

ARTICLES

The Local Identity of Smart Growth: How Species Preservation Efforts Promote Culturally Relevant Comprehensive Planning

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Summary

The concept of sustainable development encourages practitioners to view national, regional, and localized growth in terms of environmental, economic, and sociocultural impact. Traditional planning strategies primarily address the environmental and economic elements of metropolitan planning; in many circumstances, the sociocultural element is limited to efforts to achieve greater social interaction via walkable downtowns, parks, and other institutions conducive to community interface. A fundamental change in the manner in which planning authorities view the sociocultural element of sustainability is necessary. Culture exists in many forms, including historic buildings and battlefields, traditional market economies, predominant ethnic and spiritual traditions, and important geophysical attributes. Using local culture to inform the nature of growth can create a sense of place that is socially and culturally relevant. Shared cultural ideals, namely the preservation of politically and culturally significant species, can be utilized as a vehicle for comprehensive planning strategy.

Great structures or basic physical attributes—location along rivers, oceans, trade routes, attractive green space, or even freeway interchanges—can help start a great city, or aid in its growth, but cannot sustain its long-term success. In the end, a great city relies on those things that engender for its citizens a particular and strong attachment, sentiments that separate one specific place from others. Urban areas, in the end, must be held together by a consciousness that unites their people in a shared identity.¹

Far too often, upon returning home from a business trip or vacation, the wayfaring traveler describes the visited city as “worth seeing” or “pretty neat,” or in some rare instances, even “a once-in-a-lifetime opportunity.” The traveler, however, often qualifies this statement, expressing his or her relief to be home; after all, the destination is “just a city.” There are, of course, exceptions—truly memorable cities; old European cities, for example, that have captured the hearts and minds of residents and visitors alike for centuries. These cities share a common aspiration: the defining attributes of the city or metropolitan region emanate from the historical, cultural, and ethnic characteristics of its residents, thus distinguishing one city from another. Unfortunately, many modern cities fail to encapsulate this aspect of urban planning, instead adopting traditional smart growth strategies to mitigate suburban sprawl and the resulting impoverishment of once vibrant intercity neighborhoods, but neglecting the more nuanced, yet equally important, features of the urban experience. Traditional smart growth elements are critical to the planning process. However, sustainability requires more than smart “growth” and responsible “development.”

The concept of sustainable development includes three distinct yet interrelated aspects: environmental; economic; and sociocultural. Effective comprehensive planning must acknowledge each prong of sustainable development in order to facilitate continued growth (economic prong) in an environmentally responsible manner (environmental prong), while also increasing the standard of urban “livability” (sociocultural prong). When included within this overarching sustainability framework, traditional smart growth principles improve the efficacy of comprehensive planning. Traditional strategies designed to promote city livability, for example, reduce suburban sprawl, improve public transportation options, enhance the aesthetic appearance of the city, and increase social interaction among residents by providing, inter alia, walkable down-

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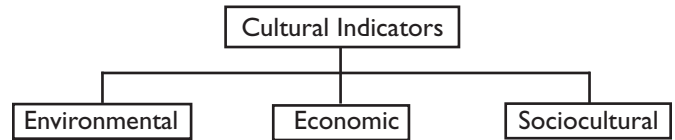
1. JOEL KOTKIN, *THE CITY: A GLOBAL HISTORY* 157 (Modern Library 2005).

towns, urban parks and green space, and civic institutions.² While certainly vital to the planning process, such strategies alone fail to capture the inherent identity of the local people and the culture unique to the region.³ Stated another way, by promoting urban livability in an isolated manner, divorced from cultural relevancy, city planners fail to create a desired sense of place.⁴

Rather than attempt to fictitiously create community identity or compel social interaction among residents, sustainability planning should be designed to reflect the intricacies of the local culture that already exists. Comprehensive planning should embody the region's deep-seated identity, informed by long-institutionalized indicators of regional culture. Once realized, these cultural indicators (as they may be called) provide guiding principles, or an overarching theme, under which sustainable smart growth, with respect to each of the three prongs of sustainability, may occur (see Figure 1).

Cultural indicators exist in various contexts, including, for instance, local historic buildings or battlefields, renowned culinary practices, predominant religious or ethnic establishments, popular tourist destinations, or historically significant natural terrain. Each offers a context-specific focal point from which local or regional comprehensive planning may evolve with far-reaching societal implications. For example, by identifying culture as a conceptual premise of the planning process, subsequent policy

Figure 1: Proposed Framework for Sustainability Planning



decisions made pursuant to the resulting plan reiterate the common goals with which the region identifies. Acknowledging these shared objectives increases public support for sustainability-based smart growth and fosters a community base tolerant of new land use regulations and public investments that coincide with the regulatory shift to a sustainable community. By enhancing urban livability in a way that reflects local identity, planners also create a sense of place socially and culturally relevant to the community in which it exists. This model of urban planning, however, implies more than simply building “cultural” and “social” institutions into society; it is about analyzing and understanding the culture of a particular locale and then integrating *that* element into the planning process. It is about capturing the inherent cultural mindset of the community—its deeply rooted uniqueness—and utilizing that perspective as a catalyst for smart growth. In sum, planners should embrace regional diversity and local uniqueness—the qualities that define a city—as vehicles for inspired change in development strategy.

The precise structure of the sociocultural model will vary depending on the cultural indicator adopted as a guiding theme for comprehensive planning. This Article analyzes one type of cultural indicator: iconic animal species of political and cultural significance. Unlike most threatened or endangered species, the preservation of an individual species representing an inherent regional commonality (whether by historic association or political identity) is deeply rooted in the local, regional, and, at times, national psyche. Not only does this increase public support for wide-scale delineation of open space and protected habitat, but it also impacts the manner in which all sustainability-based decisionmaking occurs. In cities adopting this model, sustainable smart growth strategies underlying species preservation appear throughout the planning framework. And this is true in both the United States as well as internationally in the context of both developed and developing economies.

Part I of this Article sets forth the context in which sustainability fits into the metropolitan planning paradigm. This part discusses the consequences of cities failing to engage in sustainability-based planning and how adopting a “sustainable smart growth” planning model mitigates

2. MOSHE SAFDIE & WENDY KOHN, *THE CITY AFTER THE AUTOMOBILE: AN ARCHITECT'S VISION* 31 (HarperCollins Publ., Inc. 1997):

Spontaneous, unplanned, physical interaction is the essential stuff of life: it makes for a better and richer society; it is a healthier setting for the education and maturing of young people; and it is the condition by which conflicts and suspicion are better dissipated. . . . [W]e must do all in our power to create an urban structure that fosters stimulating and vital interactive centers.

3. Local identity is fundamental to the character of the laws and governance regimes that influence sustainable development. Culture significantly affects the economic, political, and legal structures of a region. Accordingly, neither culture nor policy can exist in isolation. See Carol J. Pierce Colfer & Laurene Feintrenie, *A Dozen Indicators for Assessing Governance in Forested Landscapes*, in *COLLABORATIVE GOVERNANCE OF TROPICAL LANDSCAPES* 217, 217 (Carol J. Pierce Colfer & Jean-Laurent Pfund eds., Earthscan Publ. 2011) (“The ways day-to-day governance plays out in a given landscape are very dependent on historical and cultural contexts.”); LAWRENCE ROSEN, *LAW AS CULTURE* 4-5 (Princeton Univ. Press 2006).

4. Although the principles of traditional smart growth encourage planners to build a livable city that increases social interaction among residents, planning must nevertheless recognize the significance of culture in shaping the unique character of the region. “Differences of culture, scale, and architectural vocabulary all contribute to making cities particular. . . . Fundamental to developing a sense of place is the art of recognizing and seizing upon the very special, sometimes subtle, features over which an urban diagram is laid.” SAFDIE & KOHN, *supra* note 2, at 104. See KOTKIN, *supra* note 1, at xvii (Introduction) (“[C]ities increasingly seem to lack a shared sense of sacred place, civic identity, or moral order.”); see also Adrienne Lyles-Chockley, *Building Livable Places: The Importance of Landscape in Urban Land Use, Planning, and Development*, 16 *BUFF. ENVTL. L.J.* 95, 97 (2008-2009) (discussing the role of landscape architecture in city planning, which, according to the author, “is literally rooted in social issues as expressed through physical space”).

these problems. The policy analysis of Part II takes this discussion a step further, describing how governmental entities can develop a comprehensive plan integrating cultural indicators—in this case, preservation laws targeting culturally and politically significant species—with traditional smart growth. Lastly, Part III examines the methodology of two metropolitan areas having developed neighborhood, city, and regional plans revealing widespread support for species preservation. First, comprehensive regional planning of giant panda habitat around Chengdu, Sichuan Province, China, offers valuable insight regarding the potential for regional planning around species preservation in the developing world. Within the United States, Seattle, Washington, in response to a long, tainted history of watershed degradation, adopted several measures for habitat preservation and recovery of salmon stocks, which have long been part of the Pacific Northwest's cultural heritage. The case studies illustrate how one cultural indicator has influenced the methodology of regional planning on a large scale. The significance of this analysis, however, is far more valuable. Ultimately, this Article seeks to create a generally applicable framework for integrating the socio-cultural element of sustainability into the urban planning paradigm in a manner that reflects the local identity and shared ideals of the impacted community.

I. Sustainable Smart Growth: What Does It Mean and Why Is It Important?

A. Modern Context: Problems of the Metropolitan Region

The planning-based problems of modern cities and metropolitan regions, from which many other sustainability-based concerns arise, include two separate yet concurrent demographic phenomena. The first major issue relates to the rapidly increasing rate of urbanization.⁵ With population levels on the rise, urban planners and local governments struggle to maintain some semblance of control over regional growth. The impacts of urbanization-related development, proceeding without concern for sustainability, have far-reaching consequences.⁶ Efforts to provide for the health and welfare of growing populations strain the fiscal capacity of local governments.⁷ Expanding populations demand new and improved infrastructure, and the economic capacity of the region must continue to grow in order to support the employment needs of the working-age demographic.⁸ Where the region lacks efficient public transportation, rising vehicle use, as a result of a more concentrated urban population, contributes to traffic congestion, localized air pollution, greenhouse gas emissions,

and an overall decrease in quality of life.⁹ Further, as the population grows, so does the pressure on the surrounding environment and natural resources.¹⁰ If the rate of growth continues as projected over the next few decades, the challenges related to urbanization will also increase.

At the other end of the spectrum, and in many ways a response to growing urbanization, suburban sprawl refers to “low-density development on the ends of cities and towns that is poorly planned, land-consumptive, automobile-dependent and designed without regard to its surroundings.”¹¹ The categorical problems associated with peripheral sprawl are at least threefold. First, from an institutional perspective, sprawl is fiscally imprudent.¹² As sprawl redefines the land area subject to development, public funding must finance the necessary infrastructure to service these areas, and in many instances “the long-term costs to taxpayers to serve scattered growth often outweigh the increased tax revenues from new growth.”¹³ Further, the dedication of funding to developing suburban areas severely diminishes funds available to intercity neighborhoods, indirectly resulting in economic impoverishment and increased crime, thus perpetuating continued suburban flight.¹⁴ Second, the impacts of sprawl have serious demographic consequences. As the price of suburban housing rises, low- and middle-income families, including a significant percentage of minorities, remain in declining, intercity neighborhoods, while their wealthier counterparts move to the suburbs.¹⁵ Thus, sprawl reinforces racial, gender, and economic segregation, and decreases the demographic diversity of suburban neighborhoods.¹⁶ Lastly, sprawl significantly undermines the success of sustainable smart growth and comprehensive regional planning. Sprawling suburban development, for example, causes increased traffic congestion and the deterioration of supporting infrastructure, land degradation and loss of farmland, and inadequate services supporting the health and welfare needs of the growing suburban population.¹⁷ The combined impact of these problems results in an overall reduction of quality of life for urban and suburban residents alike.

9. *Id.*

10. *Id.*

11. ROBERT H. FREILICH ET AL., FROM SPRAWL TO SUSTAINABILITY: SMART GROWTH, NEW URBANISM & RENEWABLE ENERGY 6 (ABA Publ. 2d ed. 2010). See also Janet Kealy, *The Hudson River Valley: A Natural Resource Threatened by Sprawl*, 7 ALB. L. ENVTL. OUTLOOK J. 154, 164 (2002) (“Sprawl has been described as a phenomenon that has sucked the economic and social vitality out of many traditional communities, filling millions of acres of farmland and open space with formless structures connected to each other by their dependence on the automobile.”).

12. Oliver A. Pollard III, *Smart Growth: The Promise, Politics, and Potential Pitfalls of Emerging Growth Management Strategies*, 19 VA. ENVTL. L.J. 247, 264 (2000).

13. *Id.*

14. See *id.* at 265.

15. FREILICH ET AL., *supra* note 11, at 23.

16. *Id.* at 29.

17. *Id.* at 8.

5. See Ellen Margrethe Basse, *Urbanization and Growth Management in Europe*, 42/43 ABA URB. LAW. 385 (2010-2011).

6. *Id.*

7. *Id.*

8. *Id.*

B. Sustainable Smart Growth: A New Planning Paradigm

Smart growth planning is the antithesis of sprawl and a redeeming solution for urbanization. No universal definition of “smart growth” exists, as its objectives are inherently context-oriented and subject to fluctuation depending on the community in which the planning initiative develops. However, planners generally accept certain principles underlying smart growth as essential planning elements. The Smart Growth Network, for example, suggests a list of 10 basic principles designed to facilitate diverse, context-specific planning:

- (1) mixed land uses;
- (2) compact neighborhood design;
- (3) a variety of housing options;
- (4) walkable communities;
- (5) communities rooted in a strong sense of place;
- (6) protected open space and preservation of critical environmental areas;
- (7) infill development in existing neighborhoods;
- (8) increased transportation choices;
- (9) public decisionmaking that is predictable, fair, and cost-effective; and
- (10) public collaboration.¹⁸

To further these objectives, smart growth incentivizes development within designated growth areas, consistent with the region’s planning or revitalization strategy.¹⁹ Although smart growth planning does not typically prohibit development outside said designated areas, it may financially disincentivize undesirable growth.²⁰

“Sustainable Smart Growth”—or “sustainability planning”²¹—carries planning strategies a step further, emphasizing the social, ecological, and geographic elements of a community, as well as its development needs.²²

18. See F. KAID BENFIELD ET AL., *SOLVING SPRAWL: MODELS OF SMART GROWTH IN COMMUNITIES ACROSS AMERICA* 138 (Natural Resource Defense Council 2001).

19. Pollard, *supra* note 12, at 257.

20. *Id.*

21. The terms “sustainable smart growth” and “sustainability planning” are used interchangeably throughout this Article.

22. When comparing the principles of “community sustainability” to the “new urbanism” school of planning (an architect-led movement promoting “more compact, walkable communities, based on the qualities of the traditional American town or small city”) and “smart growth,” it is suggested that Community Sustainability “extends beyond New Urbanism to social, ecological and geographic dimensions and conditions.” Timothy Beatley & Richard Collins, *Americanizing Sustainability: Place-Based Approaches to the Global Challenge*, 27 WM. & MARY L. & POL’Y REV. 193, 199 (2002). See Timothy Beatley & Richard Collins, *Smart Growth and Beyond: Transitioning to a Sustainable Society*, 19 VA. ENVTL. L.J. 287, 297 (2000):

[F]or the most part, smart growth seems little driven by environmentalism or a true concern about restoring and living within the ecological carrying capacities of the environment as a whole, but rather, seems driven mostly by parochial concerns about property values, traffic congestion, and quality of the local environment. . . .

Mark Holland, Manager of the Sustainability Office for the City of Vancouver, British Columbia, offers a widely cited and comprehensive list describing what he refers to as *The Eight Pillars of a Sustainable Community*:

- (1) *Pillar #1—A Complete Community*: A sustainable community needs to be a complete, vibrant, mixed use community. . . . The community should be structured to protect key riparian areas and other important natural features while respecting the challenges of developing on any particular site.
- (2) *Pillar #2—An Environmentally Friendly and Community-Oriented Transportation System*: A sustainable community should prioritize pedestrian and cyclist modes of mobility and provide as many alternatives to the automobile as possible.
- (3) *Pillar #3—Green Buildings*: A sustainable community should be populated by green buildings.
- (4) *Pillar #4—Multi-Tasked Open Space*: A sustainable community should offer a wide range of opportunities in its open space design, to accommodate both community and ecological needs. Key environmental areas . . . should be protected where possible.
- (5) *Pillar #5—Green Infrastructure*: A sustainable community should pursue innovative and green infrastructure where it can.
- (6) *Pillar #6—A Healthy Food System*: A sustainable community should recognize both the importance of a healthy food supply for the community, but also the great opportunities for culture and community spirit that food can offer.
- (7) *Pillar #7—Community Facilities and Programs*: A sustainable community should provide key community facilities to support a healthy lifestyle and the creation of a vibrant social community.
- (8) *Pillar #8—Economic Development*: A sustainable community should offer many economic opportunities for investment, businesses, and employment that can support an economically diverse and prosperous community.²³

Sustainability emphasizes finiteness, limits, and ways of life that will advance that priority, rather than a continued emphasis on pursuing traditional forms of growth, but in a “smarter” manner.”

SAFDIE & KOHN, *supra* note 2, at 23 (describing the goal of New Urbanists as “a return to the compact, close-knit community they present as a cherished American icon”).

23. Mark Holland, *The Eight Pillars of a Sustainable Community*, at 4-6. See also Lyles-Chockley, *supra* note 4, at 122 (offering a similar definition:

Sustainability objectives include accessibility (increased transportation choice, reduced space between destinations), housing choice (for different age groups, incomes, and household sizes), efficient use of public funds (better use of existing infrastructure and reduced demand for new services), protection of open space and natural areas (concentrated growth within existing urban areas that minimizes land consumption, infrastructure costs, and environmental consequences), and place-making (neighborhoods that are livable, vital, and attractive live/work/play environments).

By integrating sustainability-based elements into the comprehensive planning strategy, in addition to the traditional emphasis on regional development needs, sustainable smart growth provides a mechanism to advance each of the three elements of sustainability: environmental; economic; and sociocultural.

C. The Role of the Sociocultural Element in Sustainability Planning

Unlike traditional smart growth, a sustainability-based planning model places as much emphasis on the sociocultural element of sustainable development as it does the economic and environmental elements. Place-based and context-specific decisionmaking is essential to create a sustainable society.²⁴ Public support for a particular policy and the political will to accomplish its objectives cannot exist out of context: “Legal systems must have some way of attending to concepts, values, and remedies which, even if they are not explicitly included in the law’s design, are indispensable to the law’s legitimacy and its capacity to respond to change.”²⁵ The laws and regulations that govern society reflect societal values; accordingly, the built environment of society should likewise reflect deeply engrained cultural elements of the local human community.

Identifying local cultural values and successfully incorporating the sociocultural element into the planning framework creates a sense of place and civic pride among residents, increasing public support for future planning strategies and land use regulations. Regional “cultural indicators”—those commonly held community ideals and values—thus serve as a catalyst from which other land use and community development decisions evolve. For example, public support for the preservation of the historic buildings in the city center of Salzburg, Austria, influences urban planning decisions on a citywide scale.²⁶ Planning decisions for the six farming landscapes and 18 urban centers comprising Columbia’s Coffee Cultural Landscape preserve the traditional economy of the region, as well as the architectural design of historic Antioquian-Spanish influence.²⁷ Furthermore, nationwide recognition of the ecological and economic (ecotourism) value of Yellow-

stone National Park may, in the future, inspire decisions by regional authorities to restrict development in undeveloped outlying areas.²⁸

The sociocultural element of sustainable smart growth also advances the social equity of urban planning. Utilizing a common cultural element shared by the majority of the population within a region as an umbrella for sustainability planning broadens the inclusive diversity of the decisionmaking body and provides a voice to traditionally underrepresented minorities.²⁹ Additionally, by emphasizing the sociocultural element, planning decisions and public investments are funneled to areas that most readily promote the advancement of regional culture, regardless of the relative wealth of the neighborhood. Thus, both intercity neighborhoods and wealthier suburbs receive due consideration within a sustainability-based planning model. Planners come to view the region as an integrated whole and make decisions to advance regional culture generally, rather than continue with the suburban-centric investment decisions of the past.³⁰

II. Incorporating the Sociocultural Element: How Species Preservation Provides a Unifying Theme for Sustainability Planning

This part analyzes one type of cultural indicator: preservation laws protecting individually significant animal species and how these laws serve as a vehicle for sustainable smart growth. While species preservation laws are certainly not the only indicator of regional culture, such laws illustrate the extensive influence that culture plays in shaping other aspects of comprehensive planning. Species preservation represents a cultural indicator particularly conducive to the type of umbrella planning envisioned by this Article. While environmental planning may appear most relevant to species preservation, the character of the local economic market, as well as other aspects of the sociocultural ele-

24. Beatley & Collins, *Americanizing Sustainability*, *supra* note 22, at 213.

25. ROSEN, *supra* note 3, at 30.

26. *Historic Centre of the City of Salzburg*, UNESCO World Heritage List (1996), available at <http://whc.unesco.org/en/list/784> (“The centre of Salzburg has retained its historic townscape and street pattern to a high degree. . . . Over the last forty years there has been an increasing collective awareness regarding the heritage value of the urban fabric.”); see also *Land Salzburg*, Heritage Alive! (2008), <http://www.heritagealive.eu/partners/altsstadterhaltung-salzburg> (last visited Nov. 13, 2012); see generally Richard Moe & Patrice Frey, *Finding Common Ground: Historic Preservation and Green Building*, in *GREEN COMMUNITY 64* (Susan Piedmont-Palladino & Timothy Mennel eds., 2009).

27. *Coffee Cultural Landscape of Columbia*, UNESCO World Heritage List (2011), <http://whc.unesco.org/en/list/1121> (last visited Nov. 13, 2012) (“An exceptional example of a sustainable and productive cultural landscape that is unique and representative of a tradition that is a strong symbol for coffee growing areas worldwide.”); see also *Columbia Halts Hydrocarbon Exploration in World Heritage Area*, ENV’T NEWS SERV., Mar. 5, 2012, <http://www.ens-newswire.com/ens/mar2012/2012-03-05-03.html> (last visited

Nov. 13, 2012) (revealing possible changes in land use planning when considered in the broader context of cultural preservation).

28. Patricia H. Gude et al., *Rates and Drivers of Rural Residential Development in the Greater Yellowstone*, 77 LANDSCAPE & URB. PLAN. 131, 131 (2006), available at <http://www.montana.edu/mcwethy/GPHY441/Gudeetal06.pdf> (“Because the Greater Yellowstone Ecosystem has unique ecological value, is still largely undeveloped, and is currently characterized by unrestrictive land use policies, there are prime opportunities for improving regional growth management via the incorporation of scientific knowledge into local land use planning decisions.”).

29. See *Social Equity*, Local Government Commission, http://www.lgc.org/issues/communitydesign/social_equity.html (last visited Oct. 27, 2012); see also A. Dan Tarlock, *Contested Landscapes and Local Voice*, 3 WASH. U. J.L. & POL’Y 513, 515-16 (2000) (considering the failure to include at-risk communities in decisionmaking discussions as a common problem in community planning); see generally John Daniel Watts et al., *Information Flows, Decision-Making and Social Acceptability in Displacement Processes*, in *COLLABORATIVE GOVERNANCE OF TROPICAL LANDSCAPES* 79, 81 (Carol J. Pierce Colfer & Jean-Laurent Pfund eds., Earthscan Publ. 2011) (discussing human displacement as a potential side-effect of planning, especially in developing countries, and the necessity of “socially just conservation planning”); MIKE DAVIS, *PLANET OF SLUMS* 134 (Verso 2006) (regarding the social inequity of Third-World urban slums, generally).

30. See generally FREILICH ET AL., *supra* note 11, at 23, 29.

ment, also influence the overall efficacy of the comprehensive plan. The subparts below discuss possible regulatory options available to local entities where preservation laws are chosen as a unifying cultural element for sustainability-based planning.

A. *Comprehensive Sustainability Planning at the Regional Level Consistent With Ecosystem and Habitat Connectivity*

When regional authorities remove the urban planning process from the microenvironment of local jurisdictions and operate instead at the metropolitan scale, at the county or metroregional level of government, for example, the planning process assumes a holistic and coordinated approach not possible at the local level. For many reasons, metropolitan regions benefit from extending the scope of comprehensive planning. Regional-level planning requires authorities to view the metropolitan region as a single, intricately connected “whole” and make decisions that benefit the greater sum of its parts.³¹ A broadened perspective of the population and land area relevant to the decisionmaking process increases the diversity of stakeholder interests considered during the planning process, ideally facilitating compromise between urban-dwelling environmentalists and suburban fringe-dwelling agriculturalists.³² Regional planning also promotes coordination of regulatory mechanisms among local jurisdictions involved in the decisionmaking process, thus ensuring that land use and development regulations imposed by one locality are not frustrated by cross-jurisdiction municipal zoning conflicts or lax enforcement.³³

However, regional planning faces a number of difficult political and legal barriers that impede cross-jurisdictional management. The most immediate challenge stems from the division of authority between local jurisdictions within the metropolitan region.³⁴ Jurisdictional separation reduces the regulatory capacity and opportunities for governing authorities and urban planners to collaborate at

the regional level, thus increasing the potential for uncoordinated planning conflicts. This division of authority also extends to governing bodies operating within the same jurisdiction.³⁵ Coordination between both inter- and intra-jurisdictional authorities is essential for effective planning.

Despite the challenges, regional-level planning is critical to increase protection for vulnerable wildlife species. Cooperation among jurisdictions creates a coordinated regulatory approach for conservation that corresponds with the life cycles and processes of the natural world. Nature generally does not respect artificial, man-made boundaries delineating governing jurisdictions; rather, the confines of the natural world mirror the ecological capacity of the local environment. The human community is similarly shaped by, and dependent upon, the regional ecosystem and its provisioning of natural services. Given this mutual reliance, urban planning should develop at a regional, ecosystem-based scale.³⁶ Planning at this level facilitates connectivity of wildlife and human populations across the region, allowing urban planners to prescribe regulations that promote species' migration and life cycles while concurrently providing for human infrastructure development and regional connectivity in a manner that does not unduly interfere with the needs of the environment.³⁷ Furthermore, because regional planning compels holistic decisionmaking, taking into account environmental needs as well as regional economic desires, “planners can see the connections on the landscape, and how things like housing developments or logging concessions or new roads threaten important areas or ecological processes.”³⁸ Thus, regional planning ultimately “preordains specific types of economic use and development for some areas (urban uses, agriculture, and commercial forestry) and of legal protection for others (parks, nature reserves, and refuges).”³⁹ Integrating these competing objectives into a regional plan with equal emphasis on environment and development needs enhances the region's capacity for sustainability.

31. G. Gordon Davis, *Land Use Planning in Furtherance of Sustainable Development in Asia*, 3 WIDENER L. SYMP. J. 119, 131-33 (1998).

32. See REBECCA KIHSLINGER & JAMES McELFISH, *NATURE-FRIENDLY LAND USE PRACTICES AT MULTIPLE SCALES* 52 (ELI Press 2009) (discussing the need for effective land use planning to identify and balance the multiple values arising from social, economic, and environmental interests); but see SAFDIE & KOHN, *supra* note 2, at 112 (explaining the potential challenges of removing local planning to the regional level:

The greatest resistance to regional administration has been raised by the individual small towns and peripheral centers that make up the region itself. Development that would strengthen an entire region is often opposed by local residents who perceive any move toward regional unity as a threat to their own mandate.

33. See Bronwen Powell et al., *The Role of Wild Species in the Governance of Tropical Forested Landscapes*, in *COLLABORATIVE GOVERNANCE OF TROPICAL LANDSCAPES* 157, 158 (Carol J. Pierce Colfer & Jean-Laurent Pfund eds., Earthscan Publ. 2011) (discussing how landscape management is one area in which multiple actors may work together to establish governance regimes for sustainable management of the entire landscape).

34. See Jonathan Rose, *Creating the Planning and Infrastructure Framework for Mixed Use Mixed Income Transit Oriented and Urban-Infill Development*, in *GREEN COMMUNITY* 36, 38-39 (Susan Piedmont-Palladino & Timothy Mennel eds., 2009).

35. For example, at the federal level, the U.S. Department of Transportation controls transportation funding, the U.S. Department of the Interior manages public lands within metropolitan regions, and the Department of Housing and Urban Development oversees public housing policy. “[T]he departmentalized structure of the federal government leads to the balkanization of public policy. As a result, the agencies have developed very separate planning processes, resulting in multiple uncoordinated plans.” *Id.* at 39.

36. “[I]f we employ rational, sustainable smart growth in accord with regional needs, we can revitalize our cities and suburbs; protect our agricultural, environmental, and open space lands; and enjoy fiscal and quality of life benefits from orderly provision of infrastructure and services.” FREILICH ET AL., *supra* note 11, at 334. See also Davis, *supra* note 31, at 133; Tarlock, *supra* note 29, at 516; Beatley & Collins, *supra* note 22, at 297.

37. Regional habitat connectivity is essential to combat “island biogeography”: the isolation of individual populations of species, preventing genetic exchange between otherwise geographically isolated populations, eventually resulting in die-off. JONATHAN S. ADAMS, *THE FUTURE OF THE WILD: RADICAL CONSERVATION FOR A CROWDED WORLD* 48-9 (Beacon Press 2006). See KIHSLINGER & McELFISH, *supra* note 32, at 10.

38. ADAMS, *supra* note 37, at 57.

39. Davis, *supra* note 31, at 132.

B. Using Species Preservation Objectives as an Umbrella for Sustainability Planning

Regional planning requires balancing the interests of various stakeholders. Identifying a common cultural indicator, and using that shared value as a catalyst from which subsequent sustainable smart growth strategies evolve, can facilitate cooperation between competing interest groups. This subpart offers a framework example detailing how preservation of regionally significant species can provide a shared objective driving forward sustainability.

The Environmental Element. Perhaps the most obvious sustainability-based benefit of species preservation planning is exactly what it implies: the protection of a vulnerable, possibly legally threatened or endangered species, and the habitat needed for its continued existence. Significant habitat loss, fragmentation, and degradation increasingly imperil many vulnerable species.⁴⁰ However, the environmental element of sustainable smart growth offers a solution. By utilizing a regionwide, ecosystem-specific approach developed through sustainability planning, decisionmakers can more readily identify available open space and protected areas appropriate for redesignation or rehabilitation as essential habitat. Subsequent planning may then focus on efforts to align the existing store of protected habitat areas with the realistic habitat needs of the target species. Planning efforts may include protection of the core habitat of individual populations, as well as natural “corridors” of various types reconnecting geographically isolated core areas.⁴¹

To further habitat protection, regional planning may also encourage sustainable agricultural and farming practices in the open space and farmland located on the suburban-rural periphery. Planning authorities may remove farmland from agricultural production located in environmentally sensitive areas, or work collaboratively with agriculturalists to enhance naturally occurring, yet privately held, wetlands and forested areas.⁴² By protecting significant habitat and enhancing the sustainability of intermittent farmland, planners create a “greenbelt” that envelops

the region’s major urban areas and indirectly combats sprawl. While development and population growth occur within the urban core, the outward expansion of growth is limited by the protected status of designated habitat areas. Creating a regional greenbelt thus promotes increased urban density, infill, and revitalization, as well as community and social benefits that correspond with the objectives of traditional smart growth.⁴³

Where open space areas are designated as critical habitat for a federally recognized threatened or endangered species, environmental protection laws further bolster regional preservation and sustainability planning within the greenbelt.⁴⁴ Habitat conservation plans, implemented under §10 of the Endangered Species Act (ESA),⁴⁵ for instance, demonstrate how regionwide sustainability planning promotes species conservation and recovery.⁴⁶ For example, the North County Multiple Habitat Conservation Program of the San Diego, California, region applies to seven cities and seeks to set aside approximately 19,000 acres of habitat for the protection of over 80 vulnerable, threatened, or endangered species.⁴⁷ “When completed, the habitat preservation areas will serve as a key component of the region’s smart growth efforts by preserving habitat and open space and by directing forecasted growth into appropriate areas.”⁴⁸ A habitat conservation plan for the endangered cactus ferruginous pygmy owl of the Pima County, Arizona, region likewise contributes to sustainability objectives.⁴⁹ The plan “[allows] the county to [meet] its obligations under the [ESA], yet continue to grow in an environmentally sustainable way.”⁵⁰ Protecting the habitat of the pygmy owl also guards the county against the “perils of unplanned growth” and the resulting “loss of cultural identity and quality of life in the region.”⁵¹

Where planning authorities identify species preservation as a unifying cultural element of sustainability planning, a variety of available policy mechanisms can facilitate implementation of the regional plan. The most direct way to implement planning strategies is by regulatory man-

40. KIHSLINGER & MCELFIN, *supra* note 32, at 1.

41. The theory of “rewilding,” originally developed by conservation biologists Michael Soule and Reed Noss, prioritizes three key concepts: cores, corridors, and carnivores. Cores are protected areas, including national parks and wildlife refuges, setting aside large expanses of land. Corridors establish links between core habitat, including “not just narrow pathways but also wide swaths of habitat permitting daily and seasonal movement, stepping stones, matrixes, mosaics of habitat, or ecological networks combining many forms of connectivity.” Carnivores, the last piece of the rewilding trifecta, maintain ecological balance within the ecosystem: “Because large carnivores regulate other predators and prey, exercising an influence on the ecosystem far out of proportion to their numbers, their protection and reintroduction is crucial.” CAROLINE FRASER, *REWILDING THE WORLD: DISPATCHES FROM THE CONSERVATION REVOLUTION 9* (Metropolitan Book 2009). See also ADAMS, *supra* note 37, at x (Introduction) (“A new vision for conservation means deciding where to put new parks and other protected areas, worrying about the habitat in between those reserves—for humans and non-humans alike—and wrestling with the ideas emerging from conservation biology, with mouth-filling terms like population viability, landscape connectivity, and disturbance.”).

42. FREILICH, *supra* note 11, at 302.

43. See *id.* at 34-35, 235; see also DAVIS, *supra* note 29, at 134-35 (“Cities in the abstract are the solution to the global environmental crisis: urban density can translate into greater efficiencies in land, energy, and resource use.”).

44. Shannon Petersen, *Endangered Species in the Urban Jungle: How the ESA Will Reshape American Cities*, 19 STAN. ENVTL. L.J. 423, 425 (2000) (“[F]ederal law could ‘add muscle’ to attempts to check urban sprawl, resulting in sounder transportation planning and growth management.”).

45. 16 U.S.C. §§1531-1544, ELR STAT. ESA §§2-18.

46. But see *State Habitat Plan Jeopardizes Imperiled Species*, Montana Environmental Information Center (Nov. 2010), http://meic.org/montanas_land/state_school_trust Lands/habitat-conservation-plan (encouraging a strong approach to habitat conservation, including (1) providing for periodic review of habitat conservation plans to balance conservation and land use objectives; (2) require habitat improvement, rather than preservation, under the plan; and (3) ensure that plans incorporate all critical habitat within the ecosystem or geographic region).

47. *North County Multiple Habitat Conservation Program*, San Diego Association of Governments, <http://www.sandag.org/index.asp?projectid=97&fusionaction=projects.detail> (last visited Mar. 28, 2012).

48. *Id.*

49. *Sonoran Desert Conservation Plan: Pima County, Arizona*, The Conservation Fund, available at <http://www.greeninfrastructure.net/sites/greeninfrastructure.net/files/6-sonoranfinal11.16.05.pdf>.

50. *Id.*

51. *Id.*

date, such as zoning or land use laws, amended to influence development in a manner consistent with planning objectives.⁵² Where the regional plan calls for increasing the reserve of protected lands for habitat preservation, local authorities may also exercise the power of eminent domain.⁵³ Alternatively, municipalities may acquire property for public use by purchasing land from private owners and holding it in a “land bank” dedicated for conservation purposes.⁵⁴ Municipalities may also purchase development rights or conservation easements to private property, allowing landowners to continue current land use practices while limiting future development that adversely impacts habitat preservation.⁵⁵ Creating public-private partnerships to promote conservation, either with property owners directly, or with private organizations controlling land trusts, provides additional protection.⁵⁶ Lastly, incentives offered to private property owners and land developers encouraging compliance with conservation laws also promote effective implementation.⁵⁷ Grants, funded through municipal, county, or state regulatory bodies, can encourage installation of environmentally friendly infrastructure and promote beneficial uses of land.⁵⁸ However, because municipalities, rather than joint regional bodies, generally retain authority to exercise the above-described policy options for implementation, regional coordination and open dialogue between local authorities is critical for consistent cross-jurisdictional planning.⁵⁹

The Economic Element. A commitment to environmental protection does not mean that economic development is any less important for sustainable smart growth. As Theodore Roosevelt once stated: “Conservation means development as much as it does protection.”⁶⁰ Similarly, sustainability requires that development be carried out within the *context* of the environment. Thus, where planning develops with a view toward species preservation, designated areas for new development are sited based on the habitat needs of the target species. The unsustainable siting decisions and construction practices of the past, having negatively impacted the habitat of protected species, can guide future infill and revitalization planning.

To balance the environmental and development needs of a region, planners should establish targeted urban growth areas around essential habitat cores and corridors, or modify existing zoning laws to establish regulatory lim-

its on the type of development permitted in critical areas.⁶¹ Decisions regarding the siting of new transportation routes can be made to avoid major animal migration corridors, and animal bridges and tunnels, as well as ditches that redirect harmful runoff away from critical habitat areas, can enhance the existing highway system.⁶² Additionally, within designated urban growth areas, regional planning can incentivize the use of green building materials and environmentally responsible construction practices to prevent adverse impacts on the surrounding environment and protected habitat.⁶³ Ecotourism also increases economic opportunities within the region, preserving the critical habitat of protected species while promoting economic development and social equity.

The Sociocultural Element. Numerous social benefits can derive from utilizing a widely shared cultural value as a foundational element of sustainability planning. First, deeply rooted cultural indicators serve as a unifying mechanism uniting the interests of diverse demographic and socioeconomic groups impacted by land use planning.⁶⁴ Culture thus becomes a capacity-building tool, forcing regional planners and community representatives to focus planning efforts on shared objectives and values. Finding common ground alleviates tension between competing groups and increases cooperation in furtherance of a common goal. In the context of this Article, “[f]ocusing on individual, locally important species may be the key to unifying the interests of a wide range of stakeholders.”⁶⁵ Where stakeholders view habitat preservation as a desirable planning outcome, communities may draw on their collaborative strengths—united behind a common goal—to establish a shared vision of sustainable smart growth.⁶⁶ Creating a collaborative atmosphere in which the interests of all stakeholders are respected and equally inform the decisionmaking process also increases public understanding and support for land use regulations.⁶⁷

Second, sustainable smart growth provides opportunities for public education. In addition to promoting species preservation, protecting important wildlife habitat and open space creates “outdoor classrooms” in which students witness the ecological processes occurring in forests, wet-

52. See KIHSLINGER & McELFISH, *supra* note 32, at 1; Davis, *supra* note 31, at 137.

53. Because the acquisition of public property through the exercise of eminent domain is politically unpopular, it should be employed only as a last resort where public ownership of environmentally sensitive land is critical. See Lyles-Chockley, *supra* note 4, at 119 (speaking to the rare instances in which eminent domain is used by local governments to condemn private property for “public use”).

54. *Id.* at 119.

55. *Id.* at 119-20; Tarlock, *supra* note 29, at 535-56.

56. *Id.*

57. See KIHSLINGER & McELFISH, *supra* note 32, at 1-2.

58. See *id.*

59. See Rose, *supra* note 34, at 38-9.

60. See generally GREEN COMMUNITY 54 (Susan Piedmont-Palladino & Timothy Mennel eds., 2009).

61. See Kealy, *supra* note 11, at 180; Davis, *supra* note 32, at 137.

62. See FRASER, *supra* note 41, at 35-6 (discussing the environmental and economic benefits of animal highway crossing structures: “In the United States, deer-vehicle collisions alone occur up to one and a half million times each year, costing some two hundred lives and \$8.8 billion dollars annually; collisions also imperil the survival of twenty-one endangered and threatened species.”); Lyles-Chockley, *supra* note 4, at 108-09 (discussing how modern technology can be used to mitigate transportation runoff: “Pervious concrete roadways and parking lots can double as water retention structures and reduce or eliminate the need for traditional stormwater management systems like retention ponds.”).

63. See Lyles-Chockley, *supra* note 4, at 108-09.

64. *Id.* at 109.

65. Powell, *supra* note 33, at 158.

66. ADAMS, *supra* note 37, at xvi, xxii (Introduction):

Far more than ever before, conservationists and local communities can find common ground, and they can develop shared visions for the future that reflect not simply local interests but global ones—visions that form the foundation for making decisions about how the land, both public and private, is to be both protected and used.

67. See KIHSLINGER & McELFISH, *supra* note 32, at 2.

lands, and other natural environments, while educators teach science, history, or art from an environmental perspective.⁶⁸ Regional governments and municipalities may further use sustainable smart growth as a tool to educate the broader community by teaching private citizens what “sustainable development” means and how simple lifestyle changes can help achieve regional sustainability.⁶⁹ Understanding the purpose of sustainable smart growth also increases public participation in local decisionmaking, thus contributing to the democratic process and equitable political representation.⁷⁰

Lastly, utilizing the deeply rooted cultural mindset of the community to inform regional planning helps to establish a sense of place, improving the overall livability and quality of life within the region.⁷¹ Where culture functions as a foundational element of regional planning, many of the sustainability strategies emanating from the planning process reflect unique community character. Integrating culture into the planning process thus builds community cohesion and civic pride, and improves the aesthetic attributes of the region. In sum, sustainability planning informed by local identity creates a memorable sense of place that is socially and culturally appropriate for a particular region, its history, and its people.

III. Case Study: How Planning Based on Species Preservation Provides a Vehicle for Regionwide Sustainable Smart Growth

It is rather easy to theorize how cultural indicators—most commonly used to integrate local culture into urban planning with a view toward developing a heightened sense of place—may also be used as guideposts for the development of sustainable smart growth strategies. However, elevating the sociocultural element to a central role in the planning process so as to facilitate real world implementation presents a more difficult challenge. This part describes two cities having aligned the environmental, economic, and sociocultural elements of sustainability planning to promote the preservation of regionally significant species.

Although the planning instrumentation differs substantially, each region offers valuable insight with regard to how cultural indicators form an important backdrop for sustainability planning.

A. *Chengdu, Sichuan Province, China: The Political Panda and Open Space Preservation*

The iconic black and white image of the giant panda first gained worldwide notoriety in the late 19th century when French missionary P  re Armand David sent the first specimen from Sichuan Province, China, to the Paris Natural History Museum.⁷² The arrival of the specimen provoked an outburst of Western intrigue, signaling the beginning of a long period of exploitation of the giant panda and its habitat by Western game hunters, as well as Chinese rural dwellers selling pelts for shipment to Western markets.⁷³ Following World War II, however, the giant panda took on a new role as political ambassador, a diplomatic symbol of gratitude, friendship, and cooperation between the dominant powers of the East and the West.⁷⁴ The first pair of pandas directly connected to international politics was sent to the United States in appreciation for its alliance with China during World War II.⁷⁵ During the Cold War, China’s panda diplomats traveled abroad to garner political support and to establish lasting alliances: in 1957, for example, Mao Zedong sent a panda to Moscow to strengthen the international bond between the Communist countries.⁷⁶ Fifteen years later, in 1972, Mao sent the first pair of pandas to the United States in 30 years following a successful visit to China by U.S. President Richard Nixon.⁷⁷ In more recent decades, China deployed its animal emissaries to Hong Kong and Taiwan as symbols of nationalistic alliance.⁷⁸

The adoption of the giant panda as the trademark logo of the international World Wildlife Fund in 1961 and the recognition of the giant panda as a national treasure by the People’s Republic of China in 1962 made the giant panda a world-renowned symbol of international environmentalism and conservation.⁷⁹ China has set aside numerous panda reserves for preservation of critical habitat and established breeding areas and research centers to ensure future propagation.⁸⁰ Chinese law strictly prohibits hunting of

68. See generally The Belgrade Charter: A Framework for Environmental Education, UNESCO-UNEP International Workshop on Environmental Education at Belgrade (1975), available at <http://unesdoc.org/images/0001/000177/017772eb.pdf>.

69. Beatley & Collins, *supra* note 22, at 319-20 (“[F]or many residents in our communities it is unclear how to begin reshaping their lives to act more sustainably. Sustainable communities must place a high importance on facilitating lifestyle changes—giving assistance and guidance about tangible ways in which residents’ behaviors and personal decisions can be modified.”).

70. ADAMS, *supra* note 37, at xxii (Introduction); Salla Rantala & Emmanuel Lyimo, *Changing Landscapes, Transforming Institutions: Local Management of Natural Resources in the East Usambara Mountains, Tanzania*, in COLLABORATIVE GOVERNANCE OF TROPICAL LANDSCAPES 107, 107-08 (Carol J. Pierce Colfer & Jean-Laurent Pfund eds., Earthscan Publ. 2011).

71. The celebration of culture within the design and planning process helps to make a city “memorable” and establish a sense of place. See Lyles-Chockley, *supra* note 4, at 109-10 (“Establishing a sense of place requires understanding and appreciating a community’s relationship to surrounding neighborhoods, to its geographic location, and to its regional context.”); ADAMS, *supra* note 32, at 230; SAFDIE & KOHN, *supra* note 2, at 103-04.

72. SUSAN LUMPKIN & JOHN SEIDENSTICKER, SMITHSONIAN BOOK OF GIANT PANDAS 19 (Smithsonian Inst. Press 2002).

73. *Id.* at 21-22.

74. HENRY NICHOLLS, THE WAY OF THE PANDA: THE CURIOUS HISTORY OF CHINA’S POLITICAL ANIMAL 72-73 (Pegasus Books 2011).

75. *Id.*

76. *Id.* at 83.

77. *Id.* at 160-61 (regarding the significance of Mao’s Cold War era gift to the United States:

This was not just a story about a couple of animals, nor even about the first giant pandas to appear in the United States for 30 years. This was a story about global politics. History is heavily populated by animals used as gifts to cement relationships between individuals, families, tribes and even nations.

78. *Id.* at 162.

79. See *id.* at 190-91; LUMPKIN & SEIDENSTICKER, *supra* note 72, at 25.

80. As of 2011, more than 60 national parks had been designated solely for giant panda conservation, covering approximately 70% of suitable habitat

giant panda, and penalties for illegal poaching are severe.⁸¹ Partnerships between Chinese and international zoological organizations provide the government with additional funding for conservation and scientific research in exchange for pandas placed on international loan.⁸² However, despite the advances in conservation of the giant panda in recent years, habitat destruction and degradation remains a constant threat to long-term survival of the species.⁸³

Chengdu is a large regional metropolis in Sichuan Province, China, with a population exceeding 11 million people and spanning an area of over 12,000-square kilometers, including nine districts, four cities, and six counties.⁸⁴ As the capital city of Sichuan Province, Chengdu holds substantial historic and cultural significance in the region, as well as vast natural resources and extensive political and social influence.⁸⁵ Beginning in the early 1990s, Chengdu established itself as the primary economic, transportation, and scientific hub in Southwest China.⁸⁶ While focusing on the economic development of the region, however, Chengdu officials recognized the city's strategic location in the middle of prime giant panda habitat.⁸⁷ Respecting this important connection, the city developed a comprehensive planning strategy that integrates its unique geophysical location and cultural ties to the giant panda with its economic development objectives.⁸⁸

Chengdu's regional comprehensive plan, the Sustainable Development Plan for the 21st Century, adopts a "one piece, three strips, two circles" strategy.⁸⁹ First, the "one piece" element refers to the city's goal to centralize growing industrial development inside the urban core. Second, "three strips" refers to the three cultural districts the city seeks to establish: (1) the "cultural industry strip" for enter-

tainment, exhibition, and sports and recreation; (2) the "food cultural tourism strip" to venerate the region's unique culinary tradition; and (3) the "cultural recreational strip" to provide access to world heritage sites and cultural recreation. Lastly, the "two circles" element encloses the urban core of the city: the inner circle providing for development of recreation and tourism within the city's central suburbs; the outer circle limiting land use activities to ecological and cultural-based tourism highlighting natural scenery, regional history, and folk culture. In 2009, Chengdu also launched its World Modern Garden City Initiative, supported by cooperative partnerships with business leaders and sustainable urban planning experts in the United Kingdom (U.K.).⁹⁰

The regional focus on cultural preservation, in particular on giant panda conservation as a manifestation of regional culture, informs each element of sustainability planning. Much of the current focus on sustainability within the Chengdu megaregion rests with the designation of key giant panda habitat reserves.⁹¹ As of 2006, 37 protected reserves covering an area of approximately two million hectares could be found in Sichuan Province, including reserves in Dujiangyan City, Chongzhou City, and Kai County of the Chengdu megaregion.⁹² The city's comprehensive sustainable development plan incorporates these areas, as does the Chinese government's Master Plan of Natural Reserves, which calls for circular zoning designations of progressively strenuous preservation around protected areas.⁹³

and 50% of the remaining wild population. NICHOLLS, *supra* note 74, at 191, 255.

81. *Id.* at 191 (regarding China's Wild Animal Protection Act (1989)); see also John Copeland Nagle, *Why Chinese Wildlife Disappears as Cities Spread*, 9 GEO. INT'L ENVTL. L. REV. 435, 441-42 (1997).

82. See LUMPKIN & SEIDENSTICKER, *supra* note 72, at 25.

83. See *id.* at 7; Nagle, *supra* note 81, at 440.

84. *Chengdu's Application to Join the UNESCO Creative Cities Network as a City of Gastronomy*, Chengdu Municipal Government, People's Republic of China (Feb. 2008), at 15, available at http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CLT/pdf/CNN_Chengdu_Application_Gastronomy_EN.pdf.

85. *Id.* at 12.

86. *Id.* at 15.

87. See *China: Sichuan and Gansu Provinces Join Efforts to Preserve the Giant Panda and Its Habitat in the Minshan Landscape*, World Wildlife Fund (Oct. 25, 2006), available at <http://www.worldwildlife.org/species/finder/giant-panda/publications.html>; see also *Chengdu Panda Base: One Giant Helps Another*, PR NEWSWIRE, Jan. 11, 2012, available at <http://www.prnewswire.com/news-releases/Chengdu-panda-base-one-giant-panda-helps-another-137085263.html>; *Home to Giant Pandas*, Chengdu Municipal Government, <http://www.chengdu.gov.cn/echengdu/news/detail.jsp?id=274101> (last visited Nov. 14, 2012).

88. *Chengdu Panda Base: One Giant Helps Another*, *supra* note 87 ("The connection of the Panda with Chengdu has made it a symbol of the city, and has fostered a deep commitment from the community to their conservation. The Chengdu government has given full backing to the conservation efforts. . . ."); see generally Chengdu Municipal Development Planning Commission, <http://www.chengdu.gov.cn/echengdu/investment/1.jsp> (last visited Nov. 5, 2012).

89. *Chengdu's Application to Join the UNESCO Creative Cities Network as a City of Gastronomy*, *supra* note 84, at 19.

90. See *U.K.-Chengdu Sustainable Urban Planning Seminar Held in Chengdu*, U.K. in China, British Embassy Beijing, Nov. 5, 2010, <http://ukinchina.fco.gov.uk/en/news/?view=News&cid=23153222>; see also *Chengdu Panda Base: One Giant Helps Another*, *supra* note 87 (regarding the role of panda conservation contributing to the Chengdu's transformation into a world class Garden City).

91. Concern about environmental problems and an increasing realization of the importance of habitat conservation is spreading throughout China. The national Twelfth Five-Year Plan, released in March 2011, reveals an unprecedented desire for environmental protection from the nation's top government officials. See Joseph Casey & Katherine Koleski, *Background: China's 12th Five-Year Plan*, U.S.-China Economic & Security Review Commission (June 24, 2011), at 2, available at http://www.uscc.gov/researchpapers/2011/12th-FiveYearPlan_062811.pdf ("[F]or the first time, the new plan puts forward an 'ecological security' strategy. In areas where development is limited or banned, eco-protection will be rigorously enforced and green buffer zones will be used to shield vulnerable land."); see also *Working Together With WWF to Protect China*, WWF China (2011), at 19.

92. *Home to Giant Pandas*, *supra* note 87; *China: Sichuan and Gansu Provinces Join Efforts to Preserve the Giant Panda and Its Habitat in the Minshan Landscape*, *supra* note 87.

93. Under the Chinese zoning scheme, the "core area" of a protected natural reserve includes the natural ecosystem upon which the reserve is based. Very limited or no human activity is permitted in the core zone. The "buffer zone" includes area surrounding the core zone, shielding the ecosystem protected in the innermost heart of the reserve. Limited, low-impact human activity is permitted in the buffer zone, such as scientific activity. The "experimental zone" is the outermost protected area of the reserve, and allows for increased multiple-use human activity, including scientific experimentation, tourism related infrastructure, and housing and transportation. Vanessa Hull et al., 144:12 *Evaluating the Efficacy of Zoning Designations for Protected Area Management* 3028 (Dec. 2011), available at <http://news.msu.edu/media/documents/2011/10/17603337-379f-4c3c-90a7-4f019a6e8cbf.pdf>; *Nature Reserves, the Last Line of Defense for the Eco-System*, World Wildlife Fund for Wildlife-China (2012).

Protected areas within the region provide additional benefits promoting environmental sustainability. First, both the natural reserve zoning scheme and Chengdu's comprehensive sustainable development plan promote centralized industrial development away from designated reserves, thus relegating sprawl to the confines of the urban core.⁹⁴ Second, because effective preservation of the giant panda population requires protection at the regional ecosystem level, expansive areas of open habitat designated for panda conservation indirectly provide protection for other plants and animals sharing the panda's range.⁹⁵ By guaranteeing continued protection of essential habitat, the region also safeguards the possibility for captive-bred panda reintroductions into the wild.⁹⁶ Third, limiting development within protected areas preserves essential ecosystem services upon which the regional community depends.⁹⁷

To promote economic sustainability within the context of the preservation planning strategy, government officials and private organizations work with local agriculturalists along the suburban-rural periphery to encourage sustainable farming practices. For centuries, rural dwellers in the Sichuan Basin harvested wild bamboo for food, livestock feed, construction materials, paper pulp, and fencing.⁹⁸ Because this is the same bamboo stock that wild pandas rely upon for sustenance, the Beijing-based International Network for Bamboo and Rattan have undertaken work in the Chengdu region to promote the development of bamboo plantations, providing local growers with adequate bamboo stocks for their personal use, as well as additional economic benefits from selling excess yield.⁹⁹ The Chinese government further supports Chengdu's preservation strategies through the provision of national food and seed subsidies for farmers choosing to manage the conversion of farmland back to forestland.¹⁰⁰

Perhaps most impressive, however, is the manner in which Chengdu planners have incorporated the iconic image of the giant panda into the sociocultural cityscape of the metropolitan region. Planners have piggybacked upon public opinion in favor of giant panda preservation to promote the establishment of cultural institutions in Chengdu, which contribute to developing a strong sense of place. For example, the Chengdu Research Base of Giant Panda Breeding, located in the northern suburbs of Chengdu, engages residents in wildlife research, captive breeding programs, conservation education, and academic ecotourism.¹⁰¹ The Chengdu Giant Panda Museum, founded in 1993, was the first museum in China dedicated solely to environmental conservation and has since been designated a national scientific education center, designed to promote scientific education and raise public awareness for environmental conservation.¹⁰²

B. *Seattle, Washington: The Culture of Salmon and Urban Watershed Restoration*

In the Pacific Northwest of the United States, water represents "one of the defining features of the region, and serves as the lifeblood for both native habitat and human settlement."¹⁰³ If water is the lifeblood of the Pacific Northwest, the Pacific salmon has long been its heartbeat: a symbol of the region's cultural past, as well as its modern heritage. For Native Americans living in the region, the tribal relationship with the salmon developed millennia ago.¹⁰⁴ "Salmon was a major food source and regarded as a symbol of abundance, prosperity, persistence, instinct and determination."¹⁰⁵ Salmon commonly appeared in native folklore,¹⁰⁶ and tribes held ceremonies to honor the fish giving their lives for the sustenance of the tribal people.¹⁰⁷ Today, salmon symbolize the modern heritage

94. See Hull, *supra* note 93, at 6-7 (discussing the value of the reserve zoning scheme as implemented within the Wolong Nature Reserve, near Chengdu); *Chengdu's Application to Join the UNESCO Creative Cities Network as a City of Gastronomy*, *supra* note 84, at 18-9.

95. *Working Together With WWF to Protect China*, *supra* note 91, at 1.

96. On January 11, 2012, China's first reintroduction of giant pandas into the Chengdu Panda Valley (a controlled natural environment allowing the pandas to acclimate to the wild prior to final release) was carried out under the auspices of the recently established Chengdu Giant Panda Rehabilitation Project. *Chengdu Panda Base: One Giant Helps Another*, *supra* note 87; *Chengdu Giant Panda Steps Into New Era of Rehabilitation*, PR NEWSWIRE, Dec. 21, 2011, <http://en.prnasia.com/pr/2011/12/21/USCN2545511.shtml>. The goal of the Rehabilitation Project is to release 100 giant pandas into the wild over the next 50 years. *China to Release Six Giant Pandas Into Wild*, THE GUARDIAN, Jan. 10, 2012, <http://www.guardian.co.uk/environment/2012/jan/10/china-giant-pandas>.

97. Such ecosystem services include, for example, water filtration and conservation from the Yangtze River Basin, and healthy soils and stable river banks that reduce the severity of flooding. *Working Together With WWF to Protect China*, *supra* note 91, at 1.

98. LUMPKIN & SEIDENSTICKER, *supra* note 72, at 150-51.

99. *Id.* at 153.

100. *Land Conversion From Farmland Back to Forestland: Program Plan*, People's Republic of China State Forestry Administration, Department of Forest Resources Management (Jan. 14, 2010), <http://english.forestry.gov.cn/web/article.do?action=readnew&tid=201001141128249746>; *Land Conversion From Farmland Back to Forestland: Program Progress*, People's Republic of China State Forestry Administration, Department of Forest Resources Management (Jan. 14, 2010), <http://english.forestry.gov.cn/web/article.do?action=readnew?id=201001141130506500>.

101. Chengdu Research Base of Giant Panda Breeding, <http://www.panda.org.cn/English/index.htm> (last visited Nov. 14, 2012); see also Nicholls, *supra* note 74, at 204; LUMPKIN & SEIDENSTICKER, *supra* note 72, at 11.

102. *Introduction*, Chengdu Research Base of Giant Panda Breeding, <http://www.panda.org.cn/English/us/2.htm> (last visited Nov. 14, 2012).

103. VISION 2040: The Growth Management, Environmental, Economic and Transportation Strategy for the Central Puget Sound Region, Puget Sound Regional Council (Dec. 2009), at 6, available at <http://psrc.org/assets/366/7293-V2040.pdf>.

104. Archaeologists believe that the relationship between indigenous Native Americans and salmon in the Pacific Northwest evolved approximately 9,000 years ago. JIM LICHATOWICH, *SALMON WITHOUT RIVERS: A HISTORY OF THE PACIFIC SALMON CRISIS* 28 (Island Press 1999).

105. HARRY WILAND & DALE BELL, *EDENS LOST AND FOUND: HOW ORDINARY CITIZENS ARE RESTORING OUR GREAT AMERICAN CITIES* 192 (Chelsea Green Publ. Co. 2006).

106. According to traditional Native folklore, the five indigenous subspecies of Pacific salmon—pink, chum, coho, sockeye, and Chinook—represent a distinct race of humans that live beneath the sea, each in their own house. Each year, by order of the species' leader, the salmon don silver skins and deliver themselves as a gift to the Native American people. LICHATOWICH, *supra* note 104, at 36. Similarly, in many of the creation stories of Pacific Northwest tribes, the salmon is the animal upon which everything else depends: the forests, streams, animals, and the tribes themselves. FRASER, *supra* note 41, at 290.

107. Traditional knowledge teaches that hunting and fishing do not signify man's domination over the natural world; rather, native beliefs hold that all living things, including humans, hold equal standing as members of the living

of the region; images of salmon adorn city buildings and businesses; vendors toss fish in the city's beloved Pike Place Market; and the fishing industry anchors a significant portion of the regional economy.¹⁰⁸

Pacific salmon and steelhead trout, of the genus *Oncorhynchus*, are anadromous species; born in freshwater, the fish migrate downstream to mature and spend their adult lives in the ocean before returning to their place of birth to spawn and die.¹⁰⁹ In 1909, the state legislatures of Washington and Oregon drafted the first cross-jurisdictional regulations for managing the Columbia River salmon fishery.¹¹⁰ In 1921, the Washington Legislature granted regulatory authority over salmon populations to the state Department of Fisheries.¹¹¹ The federal government assumed responsibility for fisheries management with the enactment of the 1980 Northwest Electric Power Planning and Conservation Act, which established the Northwest Power Planning Council to oversee management of salmon fisheries affected by Columbia Basin hydroelectric development.¹¹² However, salmon runs continued to decline, and by the early 1990s, the federal government commenced listing salmon populations as threatened or endangered under the ESA.¹¹³

Twenty-eight distinct population segments of Pacific salmon and steelhead trout along the Pacific Coast are currently listed as either threatened or endangered.¹¹⁴ In the Columbia Basin of the Pacific Northwest alone, 13 evolutionary significant units are listed.¹¹⁵ Unfortunately, the decline in salmon stocks is largely attributable to human activity and the unsustainable development that occurred in the region over the past two centuries.¹¹⁶ Salmon recov-

ery requires preservation of aquatic and riparian habitat at the watershed and broader bio-regional level (a component of comprehensive planning made more difficult by the fact that important aquatic corridors, necessary for salmon to reach upstream spawning grounds, flow through heavily developed areas of urban growth).¹¹⁷ Recently, in light of the protected status of salmon stocks and the cultural significance of the species, planners within the Seattle-Puget Sound region of Washington State incorporated significant watershed protection into the region's multifaceted planning framework.

Urban planning in Washington State is characterized by a devolving series of comprehensive plans, beginning with a planning mandate at the state level and growing narrower in geographic scope as plans are developed to address the context-specific needs of the various regions, counties, and cities (see Figure 2 below). At the state level, the Washington Growth Management Act (GMA) of 1990 mandates city planning for urban areas and some multicounty districts.¹¹⁸ The Legislative Findings section of the Act illustrates the state's recognition of the importance of sustainability and emphasizes the three underlying elements of environmental, economic, and sociocultural development:

The legislature finds that uncoordinated and unplanned growth, together with a lack of common goals expressing the public's interest in the conservation and the wise use of our lands, pose a threat to the environment, sustainable economic development, and the health, safety, and high quality of life enjoyed by residents of this state.¹¹⁹

A "land use element," including review of the area's drainage, flooding, and stormwater runoff systems, is identified as a mandatory component of comprehensive planning.¹²⁰

In the Seattle-Puget Sound metropolitan region, the Puget Sound Regional Council develops the planning

community. "[T]he killing was understood as a gift of food or fur, given by the animal to the man. The salmon or deer allowed the human to kill it, and in accordance with the rules of the gift economy, the hunter assumed an obligation to treat the animal (or gift) with respect." LICHATOWICH, *supra* note 104, at 35.

108. The fishing industry contributes approximately \$1 billion annually to the region's economy and supports over 500,000 jobs. WILAND & BELL, *supra* note 105, at 201; *see also* FRASER, *supra* note 41, at 291 (regarding the Pacific salmon as an emblem of the region's economic success).

109. Of the seven species of Pacific salmon (*Oncorhynchus*), five are native to North America: pink, chum, coho, sockeye, and Chinook. Steelhead and sea-run cutthroat trout are members of the same genus. LICHATOWICH, *supra* note 104, at 9; *see* Kristina Alexander & Eugene H. Buck, *Endangered Species Act Issues Regarding Columbia Basin Salmon and Steelhead*, 40169 CONG. REPORTING SERV. 1 (Jan. 4, 2012).

110. LICHATOWICH, *supra* note at 104, at 108.

111. *Id.* at 103.

112. *Id.* at 202.

113. *Id.* at 203.

114. Eugene H. Buck & Harold F. Upton, *Pacific Salmon and Steelhead Trout: Managing Under the Endangered Species Act*, CONG. REPORTING SERV. (Executive Summary).

115. The listed "evolutionary significant units" of Pacific salmon include: (1) Snake River sockeye salmon; (2) Snake River spring-summer run; (3) Snake River fall run; (4) Upper Columbia River spring run; (5) Lower Columbia River; (6) Upper Willamette; (7) Lower Columbia River coho; and (8) Columbia River chum salmon. Alexander & Buck, *supra* note 109, at 2.

116. The National Marine Fisheries Service estimates that "current annual salmon and steelhead production in the Columbia River Basin is more than 10 million fish below historical levels, with eight million of this annual loss attributable to hydropower development and operation." *Id.* at 2. *See also* Buck & Upton, *supra* note 114 (Executive Summary) ("Human activities—logging, grazing, mining, agriculture, urban development, and consumptive

water use—can degrade aquatic habitat. . . . Habitat alterations can lead to increased salmonid predation by marine mammals, birds, and other fish."); WILAND & BELL, *supra* note 105, at 200.

Declining salmon populations tell us that ceaseless building—new subdivisions, roads, and development—has impacted the land around rivers, contaminating the waters and eroding the soil. Logging and farming loosen the soil and leave it vulnerable to heavy rains that wash it into freshwater streams, which in turn rise high with silt. Particles from automobile exhaust, worn brake pads, fertilizers, gas, oil, transmission fluid, herbicides, and pesticides—the toxic soup of urban and suburban life—all wash into waterways with every rain. Some of the old suburbs leach raw sewage from antiquated septic tanks into the water tables.

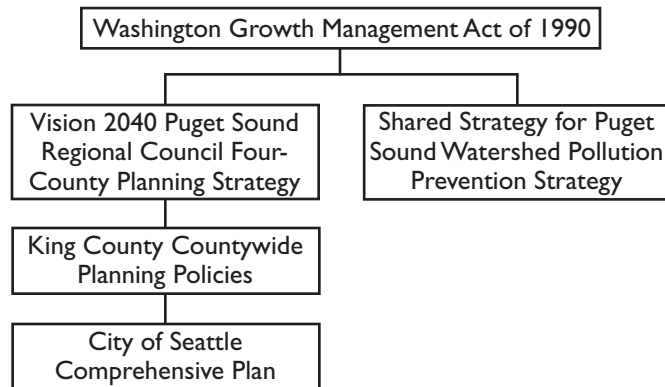
117. Petersen, *supra* note 44, at 428; *see also* Chang-Hee Christine Bae, *Salmon Protection in the Pacific Northwest: Can It Succeed?*, 17 N.Y.U. ENVTL. L.J. 559, 562 (2008) (discussing potential impacts that urban and suburban human activity may exact on the surrounding watershed: "(i) land use activities such as urban development, logging, grazing, farming, or road construction; (ii) destruction or alteration of habitat . . . ; (iii) blocking fish passage through fills, dams, or impassable culverts; (iv) pesticide applications; and (v) water withdrawals in areas where there are important spawning or rearing habitats.").

118. Growth Management—Planning by Selected Counties and Cities, RCW 36.70A, available at <http://apps.leg.wa.gov/rcw/default.aspx?cite=36.70a>; *see* FREILICH ET AL., *supra* note 11, at 99.

119. RCWA 36.70A.010 (1990).

120. RCWA 36.70A.070(1) (2010).

**Figure 2: Seattle, Washington
Comprehensive Planning Framework**



strategy, pursuant to the GMA, for the King, Kitsap, Pierce, and Snohomish four-county region.¹²¹ The current plan, Vision 2040, adopted by Resolution A-08-04 in 2009, identifies “a growth pattern that accommodates future population and employment growth in a way that minimizes adverse impacts on the environment.”¹²² Explicitly emphasizing the importance of watershed planning for salmon recovery and preservation, Vision 2040 encourages the use of “low-impact development strategies” and “environmentally sensitive approaches.”¹²³ Representatives from communities located in the region’s major watersheds also form a cooperative planning body to assist in salmon recovery and habitat restoration of streams feeding into Puget Sound.¹²⁴ The Shared Strategy for Puget Sound directs communities to identify the sources of pollution from both point and nonpoint sources that feed into local and regional waterways.¹²⁵

At a more local level, the King County Growth Management Planning Council recently published the 2011 King County Countywide Planning Policies to implement Vision 2040.¹²⁶ The county’s plan incorporates a strong environmental element encouraging low-impact development and stormwater management, as well as habitat preservation.¹²⁷ Specifically, the plan encourages ecosystemwide planning and implementation of “watershed-based salmon conservation plans” to protect surviving stocks and restore habitat for future generations.¹²⁸ The City of Seattle Comprehensive Plan, the most localized of the relevant planning documents, sets forth (i) community, (ii) environmental stewardship, (iii) economic opportunity and security, and

(iv) social equity as the city’s core planning objectives.¹²⁹ However, the concept of habitat preservation and salmonid recovery runs like a chorus throughout the plan, unifying the divergent elements of urban planning.¹³⁰ The city’s most recent revision of the Shoreline Master Program, mandated by the Washington State Shoreline Management Act, also explicitly provides for protection of priority spawning habitat for salmon.¹³¹

In light of the abundance of urban planning mechanisms operating within the Seattle-Puget Sound region, local authorities developed various strategies to satisfy planning objectives. With regard to the environmental element, planning authorities engage communities in the development of Watershed Action Plans to facilitate local efforts to improve riparian habitat along critical waterways and streams.¹³² Creek restoration projects include building fish ladders to help salmon swim upstream and bypass obstructions, dredging contaminated silt on streambeds, and limiting timber harvest near critical aquatic habitat.¹³³ Alternative strategies also involve the removal of aged or unnecessary dams and the trucking of salmon around stream obstructions, e.g., dams.¹³⁴

The sociocultural element of sustainability forms an integral aspect of the city’s planning strategy, celebrating the region’s cultural connection to salmon and increasing public support for regulatory strategies promoting watershed preservation.¹³⁵ In recent years, local communities and grassroots organizations have mobilized support for environmental protection of Pacific salmon, and various stakeholders work cooperatively to accommodate both development and environmental needs within the region.¹³⁶ The common desire to protect salmon as a shared cultural symbol and economic resource is now memorialized deep within the region’s comprehensive planning framework.

129. City of Seattle Comprehensive Plan: A Plan for Managing Growth 2004-2024, City of Seattle Department of Planning and Development (Jan. 2005), at v, available at http://www.seattle.gov/dpd/cms/groups/pan/@pan/@plan/@proj/documents/web_informational/dpdp020401.pdf.

130. See generally *id.*

131. See Shoreline Master Program, Second Draft, Seattle Department of Planning & Development (Oct. 2011), available at http://www.seattle.gov/dpd/cms/groups/pan/@pan/@plan/@shoelinemasterprog/documents/web_informational/dpdp021582.pdf; *Shoreline Master Program Update*, Seattle Department of Planning & Development, Dec. 23, 2011, <http://www.seattle.gov/dpd/Planning/ShorelineMasterProgramUpdate/Overview/>.

132. Activities undertaken pursuant to local action plans include creek restoration: “Logs have been placed to create pools where fish can rest and culverts have been redesigned or removed to restore the natural complexities of stream beds. Along the banks of streams, thousands of native shrubs and trees have been planted to replace invaders.” *Seattle Natural Drainage Systems: A Low-Impact Development Approach to Stormwater Management*, City of Seattle, Seattle Public Utilities, available at http://www.seattle.gov/util/groups/public/@spu/@usm/documents/webcontent/spu02_019984.pdf, at 4.

133. WILAND & BELL, *supra* note 105, at 200-01.

134. *Id.*

135. According to a poll taken in Washington State, approximately three-fourths of state voters believe that salmon are an important part of the cultural identity and historic heritage of the Pacific Northwest. Approximately 77% of Washington voters also believe that salmon are an important indicator of the overall health of the surrounding environment. LICHATOWICH, *supra* note 104, at 324.

136. *Id.* at 225-26.

121. The first multicounty plan, Vision 2020, was adopted by the Council in 1990. The plan divided the region into six central development areas, and classified land outside the designated development areas as open space or “existing non-center employment area.” FREILICH ET AL., *supra* note 11, at 153-54.

122. VISION 2040, *supra* note 103, at 12.

123. *Id.* at 38, 60.

124. WILAND & BELL, *supra* note 105, at 200.

125. *Id.*

126. 2011 King County Countywide Planning Policies, King County Growth Management Planning Council, Final Draft (June 15, 2011).

127. *Id.* at 11-12.

128. *Id.* at 12 (Environmental Element—Element 2: Earth and Habitats).

While the environmental and socioeconomic elements of sustainability form critical components of the region's planning structure, Seattle's most noteworthy success in sustainable smart growth involves the economic element, demonstrating the potential for managing urban development within the carrying capacity of the environment. Through various programs, the city seeks to improve watershed quality and restore riparian habitat by incentivizing the participation of commercial developers and private property owners. The Seattle Green Factor program, for example, is a landscape regulation applying to new development in commercial and neighborhood-commercial zones outside the primary downtown area, as well as multifamily residential zones.¹³⁷ The Green Factor program encourages integration of green landscape elements into new developments, thereby reducing stormwater runoff, protecting watershed riparian habitat and water quality, creating wildlife habitat, and improving neighborhood livability. The program provides flexibility in construction design, while also guaranteeing the end result, e.g., green landscape design, desired by city planners.¹³⁸ To receive a high Green Factor score, developers incorporate large plants and shade trees, permeable paving materials, vegetated walls and green roofs, or rainwater harvesting systems into new buildings. Similar neighborhood-level projects piloted by the city of Seattle include Natural Drainage Projects,¹³⁹ Street Edge Alternatives Projects,¹⁴⁰ and Green Grid Projects.¹⁴¹ Private

property owners are also encouraged to improve stormwater management and landscaping through public utilities credits and government subsidies.¹⁴²

IV. Conclusion

The challenges associated with growing urbanization and expanding sprawl call for a fundamental transformation in the way in which governing authorities and metropolitan planners view the planning process. Cultural identity represents the essence of the urban experience. Culture molds the physical character of the metroregion and defines the nature of the human community within the surrounding environment. The cultural values of the community influence the laws and policies adopted by governing institutions. Culture underlies all aspects of the governance structure and decisionmaking process, and therefore requires due consideration during planning. This Article calls on states, county and local governments, and metropolitan planners to rethink planning methodology in at least three ways.

First, planning must occur at the regional level. When compared to the localized scope of traditional urban planning, regional planning corresponds more closely to the realities of the surrounding natural environment, as well as the metroregional scale at which residents interact. Regional planning requires that authorities view the metropolitan area as an integrated whole and develop regionally applicable planning strategies and policy objectives. Unfortunately, most planning authorities operate locally; existing regional planning bodies typically cannot influence the zoning and land use ordinances of local jurisdictions. To remedy this problem of regional governance, states must provide a statutory mechanism establishing planning bodies at the regional level with regulatory authority to implement nationwide policies. Alternatively, local jurisdictions

137. *Seattle Green Factor*, Seattle Department of Planning & Development, <http://www.seattle.gov/dpd/Permits/GreenFactor/Overview/> (last visited Nov. 13, 2012); see also Mary Rickel Pelletier, *Green Infrastructure for Blue Urban Watersheds*, in *GREEN COMMUNITY* 96 (Susan Piedmont-Palladino & Timothy Mennel eds., American Planning Assn. 2009).

138. See Pelletier, *supra* note 137, at 101.

139. Natural Drainage System (NDS) projects provide an alternative to traditional stormwater management. Rather than use conventional pipes and ditches, which carry high amounts of contaminated runoff into the regional watershed, NDS projects allow for natural percolation of stormwater into the soil via vegetated swales, stormwater cascades, and wetland ponds. *Natural Drainage Projects*, City of Seattle, Seattle Public Utilities, http://www.seattle.gov/util/About_SPU/Drainage_&_Sewer/GreenStormwaterInfrastructure/NaturalDrainageProjects/index.htm (last visited Feb. 14, 2012); *Seattle Natural Drainage Systems: A Low-Impact Development Approach to Stormwater Management*, *supra* note 132.

140. The Street Edge Alternatives (SEA Streets) Project is a community design project combining the NDS approach with efforts to create "garden-street" appeal. The NDS system mimics the natural percolation of stormwater into the environment, and the garden elements of the project create a heightened sense of place. Further, the cost of SEA Streets is projected to be less than the cost of maintaining traditional streets. *Seattle Edge Alternatives*, City of Seattle, Seattle Public Utilities, http://www.seattle.gov/util/About_SPU/Drainage_&_Sewer_System/GreenStormwaterInfrastructure/NaturalDrainageProjects/StreetEdgeAlternatives/ (last visited Nov. 14, 2012); *Street Edge Alternatives: Community Cost & Benefits*, City of Seattle, Seattle Public Utilities, http://www.seattle.gov/util/About_SPU/Drainage_&_Sewer_System/GreenStormwaterInfrastructure/NaturalDrainageProjects/StreetEdgeAlternatives/CommunityCostBenefits/index.htm (last visited Nov. 14, 2012).

141. Green Grid Projects integrate sustainable landscaping, traffic calming, and community enhancement elements in addition to the benefits provided by the installation of NDS facilities. Combined, the NDS and green landscaping naturally reduce runoff and filter stormwater in a way that is both architecturally resilient and salmon-friendly. The first two projects, constructed in the Broadview and Pinehurst neighborhoods of Seattle, encompass an area of 15 and 12 city blocks, respectively, and are located in environmentally sensitive and salmon-essential watersheds. See *Broadview Green Grid*, City of Seattle, Seattle Public Utilities, http://www.seattle.gov/util/About_SPU/Drainage_&_Sewer_System/GreenStormwaterInfrastructure/

http://www.seattle.gov/util/About_SPU/Drainage_&_Sewer_System/GreenStormwaterInfrastructure/NaturalDrainageProjects/PinehurstGreenGrid/index.htm (last visited Nov. 14, 2012); *Pinehurst Green Grid*, City of Seattle, Seattle Public Utilities, http://www.seattle.gov/util/About_SPU/Drainage_&_Sewer_System/GreenStormwaterInfrastructure/NaturalDrainageProjects/PinehurstGreenGrid/index.htm (last visited Nov. 14, 2012).

142. The Stormwater Facility Credit Program, developed under the auspices of Seattle Public Utilities, allows multifamily properties to save money on annual drainage fees by reducing stormwater flow and providing private water quality treatment through installation of rain gardens, permeable pavement, or similar green infrastructure. *Stormwater Facility Credit*, City of Seattle, Seattle Public Utilities, http://www.seattle.gov/util/Services/Drainage_&_Sewer/Rates/DrainageRates/StormwaterFacilityCredit/index.htm (last visited Nov. 14, 2012). For single-family properties, Seattle Public Utilities manages the Residential RainWise Program to encourage stormwater management by reducing paved areas, improving vegetation and soil composition, and installing stormwater management infrastructure. Rebates are available to fund infrastructure improvements. *Residential RainWise Program*, City of Seattle, Seattle Public Utilities, http://www.seattle.gov/util/About_SPU/Drainage_&_Sewer_System/GreenStormwaterInfrastructure/ResidentialRainwiseProgram/index.htm (last visited Feb. 15, 2012); *RainWise: Managing Stormwater at Home*, City of Seattle, Seattle Public Utilities (2009), available at http://www.seattle.gov/util/groups/public/@spu/@usm/documents/webcontent/spu01_006289.pdf; *RainWise Rebates for Cisterns and Rain Gardens*, City of Seattle, Seattle Public Utilities, http://www.seattle.gov/util/About_SPU/Drainage_&_Sewer_System/GreenStormwaterInfrastructure/ResidentialRainwiseProgram/Incentives/index.htm (last visited Nov. 14, 2012).

may coordinate their land use policies, maintaining open dialogue among planning authorities within the region to ensure strategic, cross-jurisdictional consistency.

Second, planners must adopt a sustainable smart growth model as the policy foundation for future planning. Widespread use of a sustainability-based model entails a fundamental departure from traditional smart growth, which incorporates principles of environmental and economic sustainability, but typically fails to effectively embrace the sociocultural element. The sustainable smart growth model encourages planners to elevate the sociocultural element of sustainability on a par with environmental and economic considerations. However, rather than diminishing the value of conventional ideology, sustainability planning incorporates traditional planning strategies within a new planning paradigm.

Third, planners must recognize the value of cultural identity as an essential aspect of sustainable smart growth. Developing a regional plan that contributes to the existing culture of the community increases public support for planning policies and land use regulations, facilitates cross-demographic cooperation, and helps create a recognizable sense of place within the region. Thus, the sociocultural element of sustainability represents an important cornerstone upon which the remainder of the regional plan may develop. Recognizing the sociocultural element as the unifying principle requires that planners identify common aspects of the region's shared culture. Cultural indicators exist in many contexts, each providing a potential focal point from which sustainable smart growth planning in a broader context may evolve. However, once planners iden-

tify widely applicable cultural indicators, other planning strategies can then develop within this context.

The analysis in this Article regarding the preservation of politically and culturally significant animal species represents one type of cultural indicator used as a framework for sustainability planning. In Chengdu, preservation of the giant panda strengthens public support for the designation of expansive open space protected areas, forming a green belt around the city and confining development within the boundaries of the urban core. In Seattle, public desire to recover the culturally (and economically) significant Pacific salmon informs the region's planning objectives and shapes economic development and population growth strategies. In both cases, planning authorities have piggybacked their efforts to achieve sustainable smart growth on the shared values of the community and the existing public desire to protect regionally significant faunal icons.

Environment-related cultural values do not exist in every community. Some regions possess a particularly strong connection to their natural surroundings, while historical, ethnic, or spiritual values define the local identity of other regions. The overarching lesson to take from this Article is the importance of identifying the common cultural bonds of a community, in whatever form they exist, and integrating those cultural elements into the broader planning strategy to ensure that future development preserves the unique local character of the region. Sustainability planning thus operates as an analytical framework facilitating the use of culture as a catalyst for context-specific, place-building smart growth.