THE PURPOSE AND UTILITY OF SUSTAINABILITY PLANS

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Executive Summary

Triple bottom line sustainability is an increasingly important goal for cities across the country. Bringing environmental conservation, social equity, and economic stability on to even footing in the policy playing field is being recognized as a good way to create healthy, just, and happy communities. Cities are developing different ways to address sustainability, including developing sustainability plans. While creating sustainability plans may seem like a straightforward way to achieve sustainability goals, there has been no academic research to show that these plans are supporting broad triple bottom line policies, or that they are in alignment with other important city documents like comprehensive plans. This research addresses those two questions, using the Sustaining Places: Best Practices for Comprehensive Plans standards developed as part of the American Planning Association's Sustaining Places Initiative, and provides recommendations to cities thinking of developing sustainability plans or looking to better align them with their comprehensive plans.

What are sustainability plans?

Sustainability plans define the term "sustainability," explicitly and implicitly, using the triple bottom line – people, planet, profit. There is an expectation that this definition would then carry though their purpose statements, but they do not. Of the eight sustainability plans studied, four plans had a purpose statement that referenced the triple bottom line, while two were explicitly focused on environmental policy and two were focused on fiscal responsibility. Using the Sustaining Places Standards to examine the stated policies of sustainability plans, which focuses on six sustainable development Principles – Livable Built Environment, Harmony with Nature, Resilient Economy, Interwoven Equity, Healthy Community, and Responsible Regionalism – this report shows that the definition does not carry through into the policies either.

Examining the actual policies within the plans, it is clear that the environmental policies are the only ones being supported throughout all sustainability plans. The "average" sustainability plan, taking these eight plans into account, supports two-thirds of best practices under the Harmony with Nature Principle, which focuses strongly on natural resource

conservation and management, and almost half of the best practices under Healthy Community, largely focusing on access to open space, healthy food, and an environment clean of toxins. Sustainability plans have only limited support for the other Principles.

How well do sustainability plans align with comprehensive plans?

Comprehensive plans are both broader and more thorough than sustainability plans, in almost all cases. Every comprehensive plan addresses more of the best practices in the Sustaining Places Standards compared to their paired sustainability plan. The exception is the "Harmony with Nature" principle, which is almost equally supported by comprehensive and sustainability plans, and which is more thoroughly supported by sustainability plans. This trend carries into the individual best practices under any of the principles. Where the best practice addresses some kind of natural resource conservation policy, it is likely that it has more support from the sustainability plan. Where the best practice addresses something more purely related to land use, it likely has more support from the comprehensive plan. When there is a nexus between land use and natural resources, the two plans tend to align, on average.

Recommendations for City Sustainability

Recommendations were developed following analysis of the plans, through which it became clear that the sustainability plans studied had a specific environmental focus and an unclear relationship to city policy, and that cities had a choice of how to implement sustainability in their communities. The recommendations seek to guide that process.

<u>For communities looking to create a sustainability plan to achieve sustainability goals:</u>

- Define what sustainability means for the community
- Determine what existing planning documents say regarding sustainability
- Explicitly align the sustainability plan with existing planning documents
- Give the sustainability plan enough authority to be implemented

<u>For communities with sustainability plans:</u>

- Clarify how the sustainability plan interacts with the comprehensive plan
- Incorporate the policies of the plans to ensure that sustainability outcomes are achieved
- Align language in the plans to improve clarity and reduce conflicts between goals

Introduction

Since the introduction of the concept of "sustainable development" and the triple bottom line definition of sustainability, there has been increased interest in how cities can work towards municipal and community sustainability using the planning process. This has emerged as sustainability frameworks embedded in comprehensive plans, in climate action plans focused on carbon emissions, and in the form of sustainability plans outlining the city approach to sustainability. The degree of alignment between these plans demonstrates a city's capacity to put forward a coherent vision for its future needs.

Cities have a long history of using comprehensive plans to manage land use and growth, going back to the early 1900s, based on a need to ensure that basic services were available to all citizens as the city grew. Climate action plans have a shorter history, deriving their purpose from specific community goals on reducing carbon emissions. Sustainability plans lack both the history or clearly-defined purpose of these plans. While worthy of study, it is not the purpose of this research to delve deeply into the history of these documents; instead, this report focuses on examining the purpose and utility of sustainability plans, using comprehensive plans as a comparison to define their use and their alignment with a city's planning priorities. This report examines the content of sustainability plans in order to determine their effective purpose in municipal management, then compares that content to what content exists in city comprehensive plans to determine how well the plans are aligned in supporting similar policies. The report concludes with recommendations on how to effectively use sustainability plans.

Purpose

The goal of this research is twofold. First, this report defines the general purpose of sustainability plans that are currently in use in eight cities in the United States. The second goal is to identify whether the purposes of the comprehensive plans and sustainability plans in these eight cities are horizontally aligned, meaning they are addressing the same objectives, and if so to what degree they are aligned. In doing so this research determines how well the plans can support each other to achieve their mutual goals – or put another way, demonstrates how disparate or conflicting goals in these two plans can lead to mismanagement of city resources,

to the detriment of community goals. This research uses the Comprehensive Planning for Sustaining Places Standards (described below) to identify the objectives of both plans within one sustainable development framework, allowing for comparison across both types of plans.

Background

Important literature for this project includes background on the purpose of comprehensive and sustainability plans and methods surrounding plan integration. There is limited research on the purpose of sustainability plans specifically, though there is considerable research on the presence of sustainable development concepts in comprehensive plans. Additionally, there is limited research on plan alignment or integration between different city planning documents.

The Purpose of Comprehensive Plans

While city planning as a discipline began in the early 1900s, comprehensive planning emerged in the 1960s and 1970s as states established requirements for local land use and growth management, to ensure local plans were in line with state goals or interests. Burby and May (1997) found that thirteen states had some form of comprehensive planning standards for cities – indicating that consistent comprehensive planning is still a relatively new field.

Berke et al. (2006) outline the core purposes of a local plan. They state that comprehensive plans should:

- Offer a consensus-based community vision for future development that inspires action
- Provide the facts, goals, and policies for translating the vision into physical development patterns
- Inject long-range considerations into short-range actions that promote a future development pattern this is livable, socially just, economically viable, and environmentally compatible
- Represent a “big picture of the community that that is related to the trends and regional (and potentially global) interests in which the local government is located

These factors tie in to (and are likely informed by) Chapin and Kaiser’s (1979) plan evaluation criteria as well at Godschalk’s (2004) concept of the “sustainability prism” with regard to sustainable development planning, described below.

The Purpose of Sustainability Plans? – Focus on Sustainable Development

There is little to no research that specifically addresses sustainability plans, in and of themselves. That is part of the reason for this report in the first place. There is, however, some important literature addressing the concept of sustainable development, both broadly and with regard to comprehensive planning. These concepts can be extrapolated to address sustainability plans.

Sustainable development as a concept is often tied directly to a UN report titled Our Common Future (1987), often referred to as the Brundtland Report after the committee chairman. It gives the definition of sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." This helped establish the "triple bottom line" definition of sustainability in the early 1990s, focused on environmental protection, social equity, and economic development, all on equal terms (Elkington, 1994).

Campbell (1996) applied the concept of sustainable development to the planning profession and found that it created internal conflicts. Each pillar of the triple bottom line definition could be contrary to another: resources are the center of conflict between environmental protection and economic development, property the center between economic development and social equity, and development the center between social equity and environmental protection. While these conflicts exist, the search for the "elusive center" of this conflict triangle can be a useful framework when developing or analyzing plans. "It is a unifying concept, enormously appealing to the imagination, that brings together many different environmental concerns under one overarching value."

Godschalk (2004) expanded on Campbell's analysis of sustainable development to include the concept of livability, creating the "sustainability prism" of conflicts between goals. In addition to the three conflicts described above, Godschalk described three conflicts between the pillars of triple bottom line sustainability and livability: the "green cities" conflict with livability and ecology, the "gentrification" conflict with livability and equity, and the "growth management" conflict with livability and economics. As comprehensive plans (and theoretically sustainability plans) often directly focus on the place-making aspects of the built environment –

their “livability” – this framework helps place sustainability plans in context with the purpose of both comprehensive plans and the goals of sustainable development.

Evaluating Comprehensive and Sustainability Plans

The consistency of plans at the local level can be judged in three ways. First, they can have vertical consistency, judging how the plans align with state requirements. Second, they can have horizontal consistency, judging how the plans align with other nearby cities. Third, they can have local internal consistency, judging how well city actions follow the plan (Burby & May, 1997). While this was focused specifically on comprehensive plans, the framework can also be applied to sustainability plans.

Burby and May note that there was, at the time of writing, limited literature on evaluating plans. Some general guidelines, developed by Chapin and Kaiser (1979), were that plans should be based in facts, based on community goals, and are guides to decisions towards reaching those goals. These three broad categories capture the categories of plan evaluation noted by Burby and May, and are very aligned with the purposes of comprehensive planning described by Berke et al (2006) in the later edition of the same book. Burby and May also note that higher quality plans receive more attention from decision makers as references, due to their inclusion of data and specificity regarding goals and actions, underscoring the importance of plan evaluation in creating useful planning documents.

Baer (1997) concluded that plan evaluation ultimately falls to each individual plan – as the focus of each plan can differ from broad vision setting to fulfilling grant requirements. In general, Baer determined that overall categories of criteria include adequacy of context, “rational model” considerations, procedural validity, adequacy of scope, guidance for implementation, approach, data and methodology, quality of communication, and plan format.

Berke and Godschalk (2009) construct a similar framework for evaluating plans, stating that the two dimensions of evaluation should be internal plan quality, meaning the content and formation of the key components of the plan, and external plan quality, meaning the relevance of the plan in reflecting stakeholder values and the local context. Internal Plan Quality includes four factors: the issue and vision statement, which describes current and future issues and opportunities; the fact base, which describes both existing and future conditions; the goals and

policy framework, which elaborates on the vision and establishes policy for future land use management; and plan proposals, including spatial designs, implementation, and performance monitoring. External Plan Quality is judged on whether the plan: creates opportunities to use the plan; creates clear understanding of the plan; accounts for interdependent actions under the plan; and reveals participation in creating the plan.

Berke and Conroy (2000) were the first to evaluate comprehensive plans within the context of sustainable development. Using content analysis, they evaluated thirty comprehensive plans based on their support for six sustainable development concepts: harmony with nature; a livable built environment; a place-based economy; equity; a polluters-pay principle; and responsible regionalism. They found that there was little to no correlation between the presence of support for these concepts and whether the plan was expressly designed to address them.

Finally, Godschalk and Anderson (2012) and Godschalk and Rouse (2015) established and published a robust evaluation tool for comprehensive plans based on sustainable development. It builds on the concepts laid out in Campbell (1996), Baer (1997) Berke and Conroy (2000), and Godschalk (2004), in addition to many others. This tool is what I will use to evaluate both comprehensive plans and sustainability plans, as it expands slightly on Berke and Conroy's six concepts of sustainable development.

Gaps in Research

As mentioned, there is no research on sustainability plans or their purposes, and there is limited research on plan alignment or how it works. This research will illuminate the purpose of some sustainability plans, giving a general sense of what they do, in order to close that gap. This research will also use an existing framework to measure the alignment between sustainability plans and comprehensive plans, but it will not provide any more than an indication of how alignment between those two plans can be measured. The alignment framework developed and used here is particular to this report and this analysis and no considerable effort has been made to generalize the framework, though the author believes the process is repeatable.

Research Questions and Methodology

Two questions are at the core of this research:

- **What are sustainability plans? What do they do?**
- **How well do sustainability plans align with comprehensive plans?**

This research uses the "Sustaining Places Framework" described below to answer them both.

The Sustaining Places Framework

In 2010, the American Planning Association announced its "Sustaining Places Initiative," addressing the role of planning in achieving sustainable development outcomes (American Planning Association, 2018). One of the main deliverables of this initiative is the Comprehensive Plan Standards for Sustaining Places, in addition to other applied research on planning and sustainability. The standards "provide a set of recommended planning practices to serve as a resource for the preparation of local comprehensive plans," describing best practices in comprehensive planning that lead to sustainable outcomes (Godschalk & Rouse, 2015). These practices fit into six categories called Principles, similar to the six sustainable development concepts put forward by Berke and Conroy (2000). They are: a Livable Built Environment; Harmony with Nature; a Resilient Economy; Interwoven Equity; a Healthy Community; and Responsible Regionalism. A scoring mechanism is included which allows planners and others to measure the effectiveness of the plan based on the degree to which the plan supports the principles and outlines how plan implementation supports the principles.

This research applies the Comprehensive Plan Standards for Sustaining Places to eight different comprehensive plans, using content analysis to measure how many of the listed best practices they support and to what degree they support them – a "yes/no" approach as well as a scored approach. Each plan uses different terminology, but there is generally a list of "objectives" or "policies" which were the focus of the research – more specific than section headers or goals, these objectives outlined in detail each city's purpose in creating the comprehensive plan and the direction the city wished to move, making them the appropriate targets of analysis.

While the best practices in the Sustaining Places Framework were developed for comprehensive plans, they can be applied to sustainability plans as well, performing the same content analysis process to determine what practices are present in sustainability plans and to what degree they are supported. Without guidance from the literature on how to evaluate sustainability plans, an evaluation tool based on sustainable development concepts seems like a straightforward application for evaluating those plans, especially since they will be compared to comprehensive plans using the same tool. In doing so, the general purpose of each city's sustainability plan can be identified within a known sustainable development context, and the alignment between a city's sustainability plan and comprehensive plan can be measured.

Selecting Cities

Cities were selected primarily to ensure that they were adequately distributed geographically and had varying total populations and population densities. This would ensure that any identified trends were generalized, rather than specifically focused on cities with any particular characteristic. US Census Regions were used as dividers to split all US cities into four groups, from which two cities were selected from each. I prioritized my search for cities using the overall rate of population growth between 2010 and 2016 for all cities with a population above 50,000,[1] starting with the city with the highest rate of change and searching for both a comprehensive plan and a sustainability plan on the city website. The first two cities in each Census Region identified as having both of those plans were added to the list of selected cities. Despite all being some of the fastest growing cities in their Census Regions, the rate of growth in the eight selected cities ranged from 2.7% to 19.5%, while also providing a set of cities with a variety of characteristics, described below.

[1] U.S. Census Bureau. (2017). Annual Estimates of Resident Population Change for Incorporated Places of 50,000 or More in 2015, Ranked by Percent Change: July 1, 2015 to July 1, 2016. Retrieved from https://www.census.gov/data/tables/2016/demo/popest/total-cities-and-towns.html#tables

Characteristics of Selected Cities

The eight cities selected were: New Rochelle, NY; Philadelphia, PA; Sioux Falls, SD, Madison, WI; Franklin, TN; Orlando, FL; Broomfield, CO; and Hillsboro, OR.

Table 1. Characteristics of Selected Cities, 2016

City	Census Region	Total Area (Sq Mi)	Land Area (Sq Mi)	Population (2016)	Population % Change 2010 - 2016	Population Density (People/Land Area)
New Rochelle	1	13.24	10.35	79,557	3.2%	7,662
Philadelphia	1	142.71	134.10	1,567,872	2.7%	11,633
Sioux Falls	2	73.47	72.96	174,360	13.3%	2,301
Madison	2	94.03	76.79	252,551	8.4%	3,204
Franklin	3	41.45	41.23	74,794	19.5%	1,713
Orlando	3	110.69	102.4	277,173	15.9%	2,572
Broomfield	4	33.6	33.03	66,529	19.1%	1,890
Hillsboro	4	23.91	23.90	105,164	14.1%	4,204
Minimum	*N/A*	13.24	10.35	66,529	2.7%	1,713
Maximum	*N/A*	142.71	134.10	1,567,872	19.5%	11,633
Average	*N/A*	66.64	61.85	324,750	12.0%	4,397

Source: U.S. Census Bureau, American Community Survey 2012-2016

As noted above, while all cities are some of the fastest growing in their Census Regions, they are not all growing at same high rates. Growth in New Rochelle, NY (a 30-minute train ride from Grand Central Station in New York City) and Philadelphia, PA trickled upwards at 3.2% and 2.7%, respectively, from 2010 to 2016. As two of the fastest growing cities in the Census Region, New Rochelle and Philadelphia outperformed the regional average of 1.6% but fell well below the national average growth of 6% over the six-year timeframe. Philadelphia's population is exceptionally high among selected cities, 5.7 times higher than the next largest city. Philadelphia is also the largest city by both total population and population density. New Rochelle was the second densest city despite its relatively low population, perhaps a consequence of also being the smallest by land area.

In Region 2, both cities had growth rates above average both regionally and nationally, a characteristic shared by Regions 3 and 4 as well. Sioux Falls, SD and Madison, WI had growth rates of 13.3% and 8.4%, respectively, compared to the average regional rate of 2.7%. (Region 2, notably, contains over half of the cities that showed significant reduction in population from 2010 to 2016.) Excluding Philadelphia as an outlier, both Sioux Falls and Madison have above

average populations compared to the other selected cities, and are the 3rd and 4th largest cities by land area, making them some of the less dense cities in the study as well.

Franklin, TN and Orlando, FL, in Region 3, had high growth rates of 19.5% and 15.9%, respectively, well above the regional average of 8.8% which was the highest average for all regions. Franklin has below average land area, and below average population with Philadelphia excluded from the average, in addition to being the least dense city in the study. Orlando is the second largest city in the study, with the second largest population well above the average (excluding Philadelphia), but with such a large area Orlando also has below average population density. (Cities in Region 3 made up 58% of the top 100 fastest growing cities in the US.)

Finally, Broomfield, CO and Hillsboro, OR in Region 4 had 19.1% and 14.1% growth from 2010 to 2016, compared to the regional average of 6.9%. They both have well below average land area, and below average population – Broomfield is the smallest city in the study. Broomfield is also the second least dense city in the study, while Hillsboro is the third most dense behind the Region 1 cities.

Overall, Philadelphia is the only outlier in the data set, and only when it comes to population or population density. Examining it gives good insight into how large cities work with sustainable development and alignment between the comprehensive and sustainability plans. For the other seven cities, there is a good range of different land areas, populations, population densities, and rates of population change from 2010 to 2016. As such, the data set meets the previously stated need of generalizability.

Characteristics of Plans in Selected Cities

Table 2. Age and Responsible Agencies for City Comprehensive and Sustainability Plans

City	Latest Comprehensive Plan	Latest Sustainability Plan	Responsible Agency (Comprehensive Plan)	Responsible Agency (Sustainability Plan)
Franklin	2017	2013	Planning Department	Planning Department
Broomfield	2016	2011	Planning Department	Environmental Services
Orlando	2012	2013	Planning Department	Mayor's Office
Hillsboro	2016	2015	Planning Department	City Manager's Office
Sioux Falls	2016	2012	Planning Department	Environmental Services
Madison	2012	2006	Planning Department	Office of Sustainability
New Rochelle	2016	2011	Planning Department	Planning Department
Philadelphia	2012	2016	Planning Department	Office of Sustainability

Source: City Plans, City Websites. See References section for details.

Plans from selected cities are produced by specific offices and departments within the city government. In all eight cities, the comprehensive plan is developed by a planning specific department, either an independent office or within another office related to community or economic development. Four of the selected sustainability plans are produced by an executive level office, either a Mayor's or City Manager's Office of Sustainability. Two sustainability plans are produced by a sustainability initiative of a Public Works office. The final two sustainability plans are produced by the planning office that created the comprehensive plan. Franklin, TN's Office of Planning and Sustainability is responsible for both of the city's plans, while in New Rochelle the Office of Planning and Sustainability is divided in two, with the Planning department responsible for the comprehensive plan and the Sustainability department responsible for the sustainability plan.

Each of the comprehensive plans were developed to provide a city-wide growth management strategy. Within the plans are purpose statements or other language indicating that the plan will direct future development by implementing policies describing preferred land use patterns and capital investments. Four of the comprehensive plans are required by state law, including: Madison, WI; Broomfield, CO; Orlando, FL; and Hillsboro, OR. Madison and Hillsboro indicate within their plans how their stated policies align with the overall statewide planning goals.

Each of the sustainability plans were developed either in response to a community desire for sustainability policy, or as part of an overall push for sustainability initiatives from

elected officials in city government. In either case, sustainability plans have their roots in public opinion. This stands somewhat in contrast to comprehensive plans, which are used to guide growth and have roots in the fundamental work of providing adequate guidance and infrastructure for the public. While also creatures of public opinion, the growth management aspects of comprehensive plans ensure a degree of consistency and policy deference – sustainability plans may guide policy, but comprehensive plans guide when and how that policy is brought into the physical world.

In addition to sustainability plans, three of the cities examined in this study either currently have or previously had climate action plans of some kind. Climate action plans focus specifically on policies and actions that reduce greenhouse gas emissions, in recognition of the environmental and human health consequences of climate change. Hillsboro, OR's "Climate Action Opportunities Framework" was centered on energy policy for the city, but also included a recommendation to develop a city sustainability task force, which was created and ultimately drafted the city's sustainability plan. Madison, WI had a climate action plan as recently as 2002, but no updates have occurred since – the city's sustainability plan was published in 2011, though there is no clear connection between it and the defunct climate action plan. Finally, Philadelphia, PA developed a new climate action plan in 2016 which outlines preferred city actions to limit carbon emissions and to increase resilience for city infrastructure and community health with continued climate change. Philadelphia's sustainability plan references some of the same actions, but does not link explicitly to the climate action plan. With this, this report assumes that sustainability plans are inherently different from climate action plans, though they share some characteristics.

Plan Analysis

Stated Purposes of Sustainability Plans and Stated Relationship to Comprehensive Plans

In trying to define what a sustainability plan is, it is likely best practice to first examine what it is that the plans say of themselves, beginning with their definitions of sustainability. Each of the eight sustainability plans examined used a triple bottom line definition of sustainability. The definition was sometimes explicit, as in Madison's sustainability plan: "Madison defines sustainability as meeting the current environmental, social and economic needs of our community without compromising the ability of future generations to meet their needs."[2] More commonly, though, the definition was found implicitly in a line in the introduction, as in Franklin's plan: "It's about doing things to reduce costs, positively affect people, and improve our local environment."[3]

This would imply that the sustainability plans would give equal regard to environmental, social, and economic outcomes – but this was not the case when examining the vision or purpose statements of the plans. Only four of the plans carried the triple bottom line through the stated purpose of the plan ("Broomfield enjoys prosperity as an environmentally, economically, and socially sustainable community")[4], while two were explicitly focused on environmental policies ("Through the Green Works Orlando program the City of Orlando strives to become one of the greenest cities in America")[5], and two focused explicitly on the economic impacts of sustainability ("Working together, [Sioux Falls] will promote a vibrant community through the innovative and wise use of our resources")[6]. With this, there is less of an expectation that these plans will implement the broader focus of triple bottom line sustainability overall.

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[2] City of Madison, WI. (2011). The Madison Sustainability Plan. Retrieved from https://www.cityofmadison.com/sustainability/documents/SustainPlan2011.pdf

[3] City of Franklin, TN. (2013). Sustainability Action Plan 2013. Retrieved from http://www.franklintn.gov/home/showdocument?id=16425

[4] City of Broomfield, CO. (2011). City and County of Broomfield Sustainability Plan. Retrieved from https://www.broomfield.org/DocumentCenter/View/9502/Sustainability_Plan_01-14-11

[5] City of Orlando, FL. (2013). Greenworks Orlando: Community Action Plan. Retrieved from http://www.cityoforlando.net/greenworks/wp-content/uploads/sites/9/2017/06/GreenWorksOrlando_CommunityActionPlan.pdf

[6] City of Sioux Falls, SD. (2012). Sustainability Master Plan. Retrieved from http://www.siouxfalls.org/public-works/environmental-recycling-hazardous/green/smp/docs/smp

Lastly, some of the sustainability plans examined noted some relationship to their city's comprehensive plans. Two plans were explicit in this relationship, stating that the sustainability plan replaced a chapter of the comprehensive plan or was created from strategies listed in the comprehensive plan. Two plans were tangentially related to their comprehensive plans, stating that the sustainability plan was an "adjunct" to the comprehensive plan or that the update process for the comprehensive plan should be consistent with the content in the sustainability plan. Four plans had no stated relationship to their comprehensive plans – notably including Franklin's sustainability plan, which was developed by the same department that created the comprehensive plan.

Overall, the eight sustainability plans studied here show that the concept of sustainability is well understood, but the plans created to support that concept do not maintain their broad focus on environmental conservation, social equity, and economic stability. Further, the plans are not often created with other planning efforts in mind – even when explicitly mentioned, it is more likely that the relationship between the plans is based on a sentence or paragraph, rather than some kind of framework that would ensure alignment.

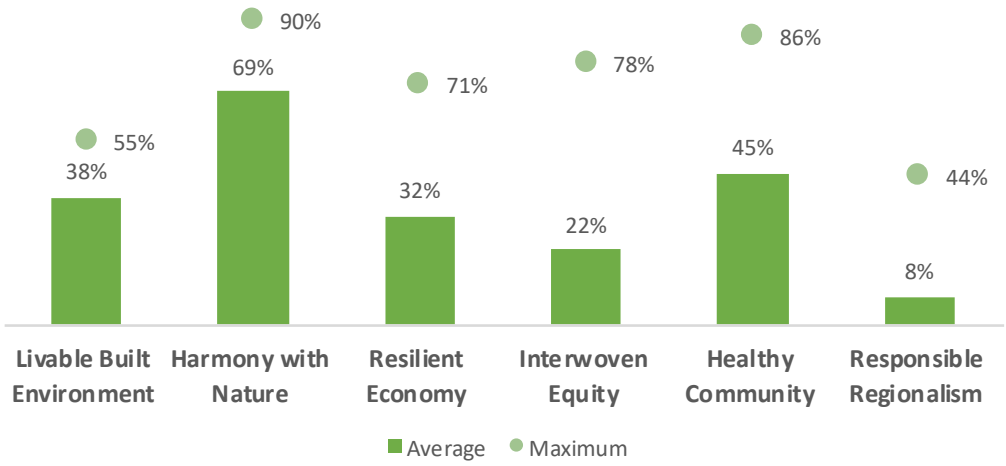
Summary of Content Analysis Findings

Regardless of what the plans state as their vision, the content within them is the real indicator of their purpose and utility. Using content analysis based on the Sustaining Places Standards, this report shows what best practices are supported by sustainability plans, and how well the plans align with comprehensive plans.

Policies Found in Sustainability Plans

Sustainability plans may state a broad focus on environmental, social, and economic concerns, but they mostly focus on natural resources, with some limited focus on community health. Though the maximum percentage of best practices found in some individual plans is high across almost all categories, that maximum is often an outlier in the whole set.

Figure 1. Average and Maximum Percentage of Best Practices Referenced in Sustainability Plans, by Principle



Source: City Sustainability Plans. See References section for details.

On average, the eight sustainability plans address 69% of the best practices under the Harmony with Nature Principle, which mostly focuses on natural resource protection and conservation. The plans also address 45% of the best practices under Healthy Community, which deals broadly in community safety, access to open space and healthy food, and the presence of centers for art and culture. The eight plans have limited support, on average, for Responsible Regionalism, which focuses on horizontal alignment with other communities, and

for Interwoven Equity, which focuses specifically on the needs of disadvantaged and at-risk communities. The maximum values here belong mostly to Madison's sustainability plan, which has the highest number of best practices present among the plans studied for Livable Built Environment, Interwoven Equity, Healthy Community, and Responsible Regionalism. It also has the second highest number of best practices present for Harmony with Nature and Resilient Economy. City-specific scores can be found below in Table 3.

From this we can determine that the plans are mostly focused on environmental concerns, rather than the full triple bottom line that half of the plans state is their vision for their community. Aside from Madison's broad sustainability plan which does have a stronger triple bottom line focus, no plan performs well across all six Principles, or even across the three Principles that most closely match the three pieces of the triple bottom line – Harmony with Nature, Resilient Economy, and Interwoven Equity.

Table 3. Percentage of Best Practices Referenced in Sustainability Plans, by Principle

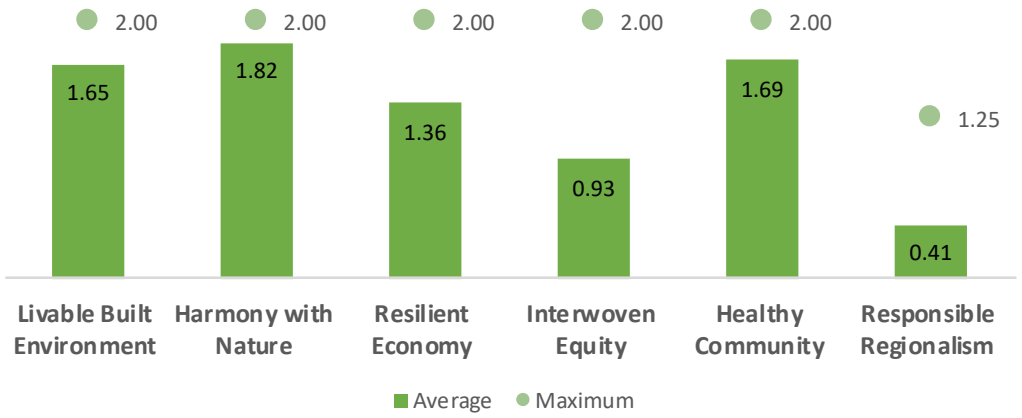
City	Livable Built Environment	Harmony with Nature	Resilient Economy	Interwoven Equity	Healthy Community	Responsible Regionalism	Total
Franklin	36%	30%	14%	0%	14%	11%	19%
Broomfield	45%	90%	71%	33%	29%	11%	47%
Orlando	45%	70%	29%	0%	43%	0%	32%
Hillsboro	27%	60%	0%	11%	14%	0%	21%
Sioux Falls	18%	50%	29%	11%	29%	0%	23%
Madison	55%	80%	43%	78%	86%	44%	64%
New Rochelle	27%	80%	29%	11%	71%	0%	36%
Philadelphia	45%	90%	43%	33%	71%	0%	47%
Maximum	55%	90%	71%	78%	86%	44%	64%
Minimum	18%	30%	0%	0%	14%	0%	19%
Average	38%	69%	32%	22%	45%	8%	36%

Source: City Sustainability Plans. See References section for details.

Scores for Best Practices in Sustainability Plans

Another measure of what sustainability plans address is how well the sustainability plans support their policy outcomes using the Sustaining Places Standards scoring guide. The Sustaining Places Standards score on a scale of 0 to 3; 0 means the best practice was not referenced, while 3 means it was referenced and supported with a thorough implementation plan. The average score for each best practice under each principle indicates how well the plans, as a whole, are supporting the policies they are describing. (No best practice received a score of 3 in any of the plans – this is more of an indication of how difficult it is to be very specific in broad plans, rather than a reflection on the quality of the plans examined.)

Figure 2. Average and Maximum Scores for Best Practices Referenced in Sustainability Plans, by Principle



Source: City Sustainability Plans. See References section for details.

As the graph of average scores shows, when a best practice is referenced under Harmony with Nature, Healthy Community, and Livable Built Environment, it tends to be supported by actions the city intends to carry out, rather than simply a broad statement of policy. For Responsible Regionalism and Interwoven Equity, and to an extent Resilient Economy, references are instead just broad policy statements, lacking the same kind of support.

The maximum scores here indicate that some plans are intentional in providing good, actionable backing for their policies, even if the plan overall does not support a particular principle. New Rochelle's sustainability plan, for example, has exactly one best practice

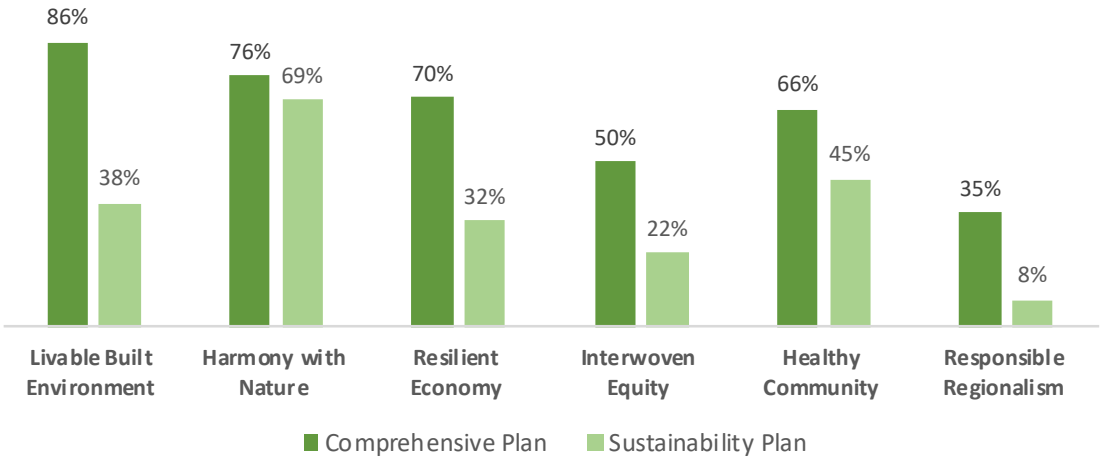
referenced under Interwoven Equity, but it adequately supports that best practice. As such, the measure of scores over references shows that New Rochelle does well, when it mentions anything at all.

Overall, taking the average and maximum scores together, the sustainability plans studied here tended to follow this pattern of best practices scoring well under the Sustaining Places Standards, when they referenced the best practices at all. Interwoven Equity and Responsible Regionalism did not follow this trend.

Comparing the Average Comprehensive and Sustainability Plan

Comparing the number of referenced best practices across each set of plans gives us a broad indication of how well comprehensive plans and sustainability plans align with each other.

Figure 3. Average Number of Best Practices References in Comprehensive and Sustainability Plans, by Principle



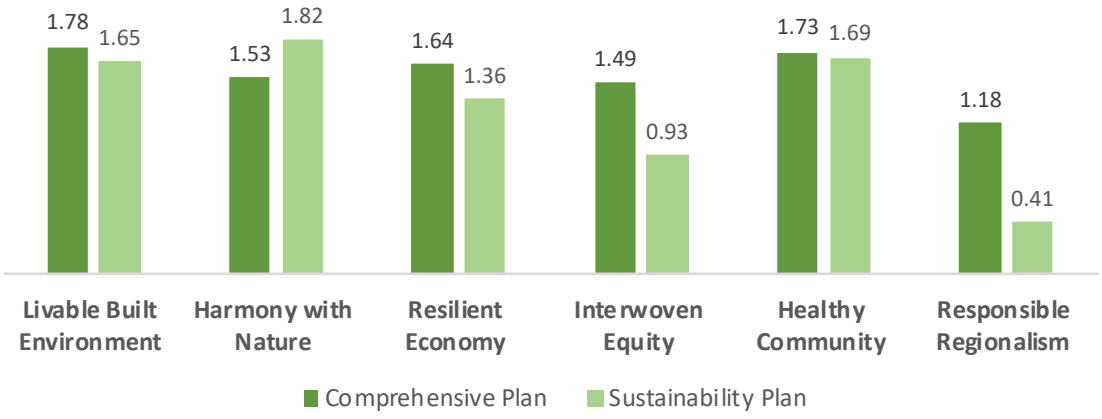
Source: City Comprehensive and Sustainability Plans. See Appendix section for details.

Across all principles, comprehensive plans address more total best practices compared with sustainability plans. This holds true even for the principles where sustainability plans have their highest number of referenced best practices, which are Harmony with Nature and Healthy Community. Comprehensive plans address more than double the number of the Livable Built

Environment, Interwoven Equity, and Resilient Economy best practices referenced in sustainability plans. Comprehensive plans are, for lack of a better term, more comprehensive than sustainability plans – even when it comes to triple bottom line sustainability concepts.

Scores for referenced practices across the principles mostly follow this trend as well, with the comprehensive plans addressing things with more detail and actionable steps than comprehensive plans. Sustainability plans, however, have more support for referenced best practices under Harmony with Nature when compared with comprehensive plans.

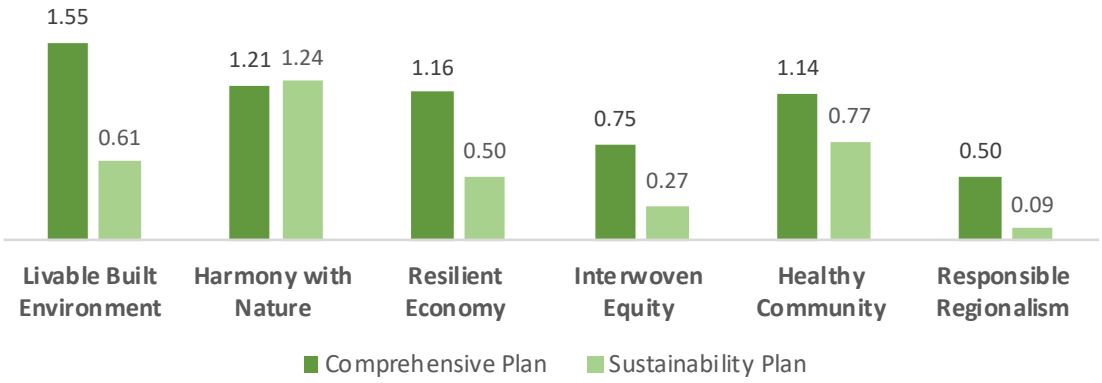
Figure 4. Average Score for Referenced Best Practices in Comprehensive and Sustainability Plans, by Principle



Source: City Comprehensive and Sustainability Plans. See Appendix section for details.

Given that the number of best practices referenced in comprehensive plans and sustainability plans is nearly equal under Harmony with Nature, it is significant that the average score for referenced best practices is higher. This indicates that sustainability plans are more thorough than comprehensive plans in this one category. While it appears as though Livable Built Environment or Healthy Community may have the same kind of support across both plans on this graph alone, examining the scores in relation to the total number of best practices, rather than just those that are referenced, shows that the gap between them is still significant.

Figure 5. Average Score per Best Practice under each Principle



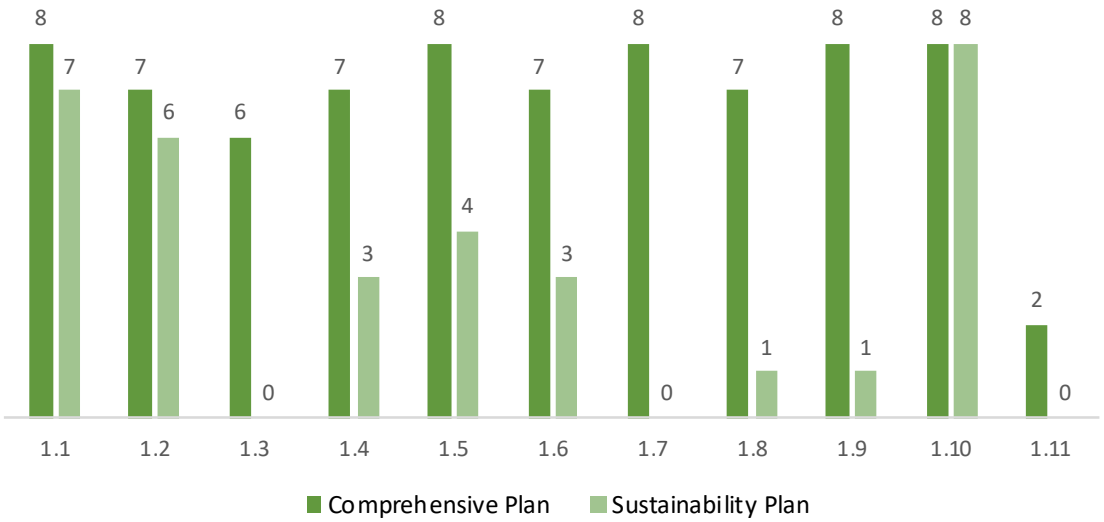
Source: City Comprehensive and Sustainability Plans. See Appendix section for details.

Dividing the total score by the total number of Principles shows that for each Principle other than Harmony with Nature, comprehensive plans are more likely to address a best practice and to do so with more detail. The gap for Harmony with Nature is smaller, but sustainability plans still hold an edge over comprehensive plans, further indicating that they are more thorough for that Principle on average.

Overall Alignment by Best Practices

The last layer of examination is at the level of the individual best practices, examining how many of the plans addressed them, and which plans are more likely to address them, beginning with the Livable Built Environment Principle. Comprehensive plans referenced 86% of the best practices in this Principle, on average, compared to 38% in sustainability plans.

Figure 6. Total Number of Comprehensive and Sustainability Plans Referencing Best Practices, Livable Built Environment



Source: City Comprehensive and Sustainability Plans. See Appendix section for details.

The plans studied align for Best Practices 1.1 (Plan for multi-modal transportation), 1.2 (Plan for transit oriented development), and 1.10 (Implement green building design and energy conservation). These share a common thread of reducing carbon emissions, often a focal area for sustainability plans, and the land use impacts of reaching carbon reduction goals. Best Practices 1.3 through 1.9 have weaker connections to natural resource or carbon footprint outcomes; instead they focus more purely on the land use outcomes of the built environment. 1.11 (Discourage development in hazard zones) is not touched on in either set of plans.

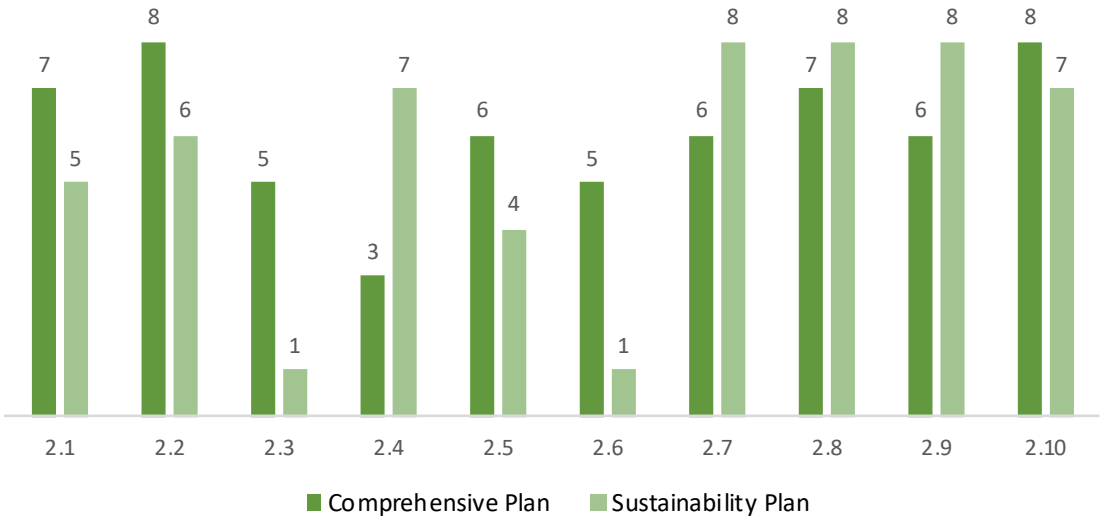
Plan Alignment Example: New Rochelle, NY – Best Practice 1.10: Green Infrastructure

Sustainability Plan, Initiative 3.19 – Flood Control and Mitigation. "Reduce the incidence and severity of local flooding by controlling storm water run-off, expanding permeable surfaces, repairing existing infrastructure, and utilizing new green infrastructure models."

Comprehensive Plan, Recommendation 7.16 – Public Facilities and Utilities. "Reduce the incidence and severity of local flooding by controlling storm water run-off, expanding permeable surface coverage, repairing existing infrastructure, and utilizing new green infrastructure models."

Comprehensive plans addressed 76% of the best practices under the Harmony with Nature Principle, compared to 69% with sustainability plans, though sustainability plans had a slightly higher average score for each best practice addressed.

Figure 7. Total Number of Comprehensive and Sustainability Plans Referencing Best Practices, Harmony with Nature



Source: City Comprehensive and Sustainability Plans. See Appendix section for details.

The plans aligned where land use issues and environmental outcomes aligned. The most aligned best practices, 2.1, 2.2, and 2.7 through 2.10, involve protecting watersheds, waste management, and green infrastructure – policies where growth management directly impacts the natural world. Sustainability plans addressed Best Practice 2.4 (Enact policies to reduce carbon footprints) more than comprehensive plans did. Almost every sustainability plan dealt specifically with carbon emissions to some degree – the exception being Franklin's sustainability plan. Comprehensive plans addressed Best Practices 2.3 (Encourage development that respects natural topography) and 2.6 (Encourage climate change adaptation) significantly more than sustainability plans. Again, these best practices deal more closely with land use than a specific natural resource protection or carbon reduction policy.

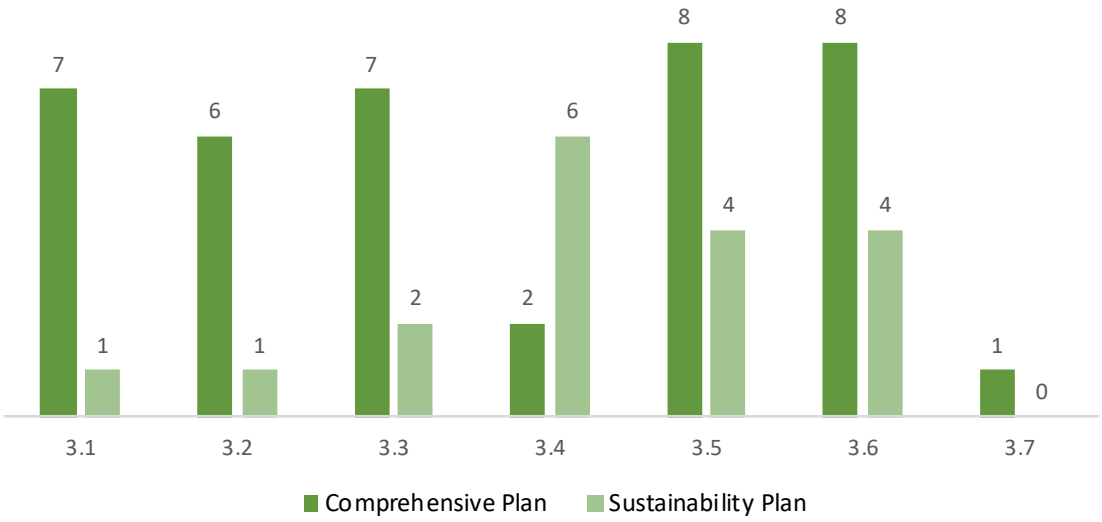
Plan Alignment Example: Broomfield, CO – Best Practice 2.8: Waste Reduction

Sustainability Plan, Policy SA.2 – Resource Conservation: Establish and use standards, policies and practices that encourage and support the reduction of waste.

Comprehensive Plan, Policy ES-A.1 – Environmental Stewardship: "Establish and use standards, policies, and practices that encourage and support the reduction of waste and toxins in the environment through recycling, reuse, and composting."

Under Resilient Economy, comprehensive plans addressed 70% of the best practices, compared to sustainability plans addressing 32%.

Figure 8. Total Number of Comprehensive and Sustainability Plans Referencing Best Practices, Resilient Economy



Source: City Comprehensive and Sustainability Plans. See Appendix section for details.

Of the seven best practices under this Principle, only Best Practice 3.4 (Promote green businesses and jobs) was referenced in a significant way by the sustainability plans. Otherwise, sustainability plans largely ignored a focus on the economic piece of sustainability. There is some exception for Best Practices 3.5 (Encourage community-based economic development and revitalization) and 3.6 (Provide and maintain infrastructure capacity in line with growth or decline demands).

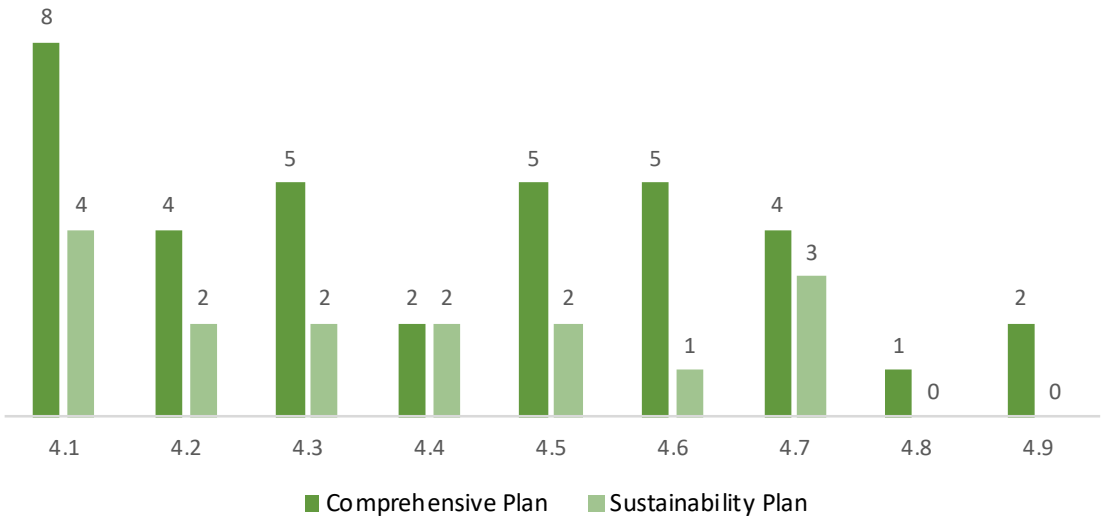
Plan Alignment Example: Madison, WI – Best Practice 3.5: Green Jobs

Sustainability Plan, Goal 2, Carbon and Energy: "Systematically upgrade existing buildings, equipment and infrastructure."

Comprehensive Plan, Objective 7, Economic Development: "Support Madison's diversified economic base by providing adequate land and infrastructure to make locations in the City attractive to business."

50% of the Best Practices under Interwoven Equity are found in comprehensive plans, compared with 22% in sustainability plans.

Figure 9. Total Number of Comprehensive and Sustainability Plans Referencing Best Practices, Interwoven Equity



Source: City Comprehensive and Sustainability Plans. See Appendix section for details.

Many of the best practices here are related to other Principles, with an added focus on ensuring that the city is supporting people and areas that are distressed or at risk. All comprehensive plans and half of the sustainability plans included some kind of policy surrounding Best Practice 4.1 (Provide a range of housing types). Best Practices 4.3, 4.5, and 4.6 all deal explicitly with the physical improvement of the disadvantaged or substandard areas of the city, and have some support in comprehensive plans – but as they do not deal as explicitly with natural resources or carbon emissions, they have limited support in sustainability plans. Best Practice 4.7 (Plan for workforce diversity and development) has the second highest support from sustainability plans, because it crosses over with Best Practice 3.4 (Promote green businesses and jobs).

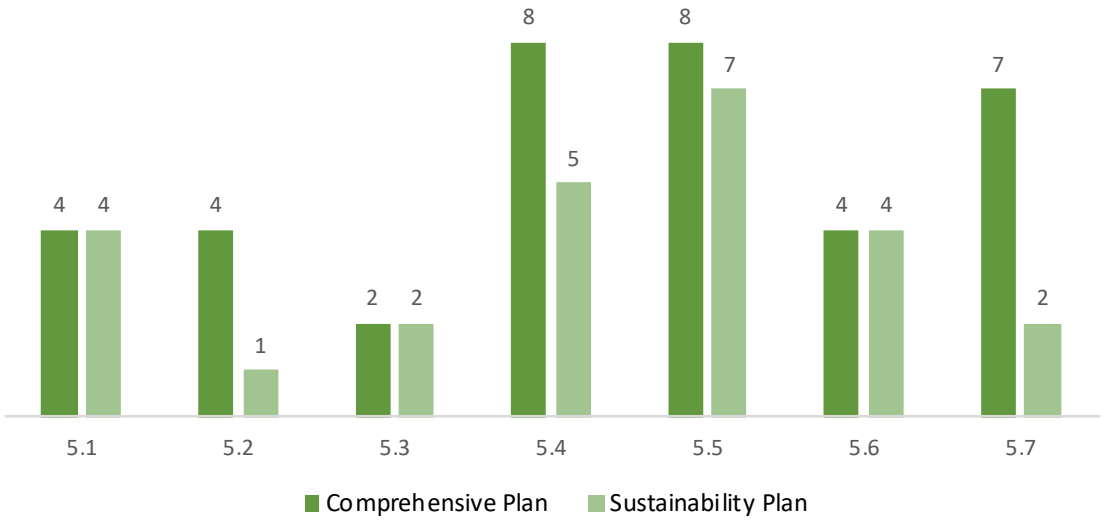
Plan Alignment Example: Hillsboro, OR – Best Practice 4.1: Housing Variety

Sustainability Plan, "Potential Projects," Energy Goals: "Diversify housing options."

Comprehensive Plan, Goal 1, Housing: "Provide opportunities for the development of a variety of housing choices that meet the needs and preferences of current and future households."

Comprehensive plans addressed 66% of the best practices under Healthy Community, compared to 45% for sustainability plans.

Figure 10. Total Number of Best Practice Referenced in Comprehensive and Sustainability Plans, Healthy Community



Source: City Comprehensive and Sustainability Plans. See Appendix section for details.

Best Practices 5.4 (Plan for physical activity and healthy lifestyles) and 5.5 (Provide accessible parks, recreation, facilities, greenways and open space near all neighborhoods) have more substantial support from both plans, as they both focus on access to open areas. Best Practices 5.1 (Reduce exposure to toxins and pollutants in the natural and built environments) and 5.6 (Plan for access to healthy, locally-grown foods for all neighborhoods) have equal support in comprehensive and sustainability plans. Best Practice 5.7 (Plan for equitable access to health care providers, schools, public safety facilities, and arts and cultural facilities) is broad and is supported by most comprehensive plans, but only two sustainability plans.

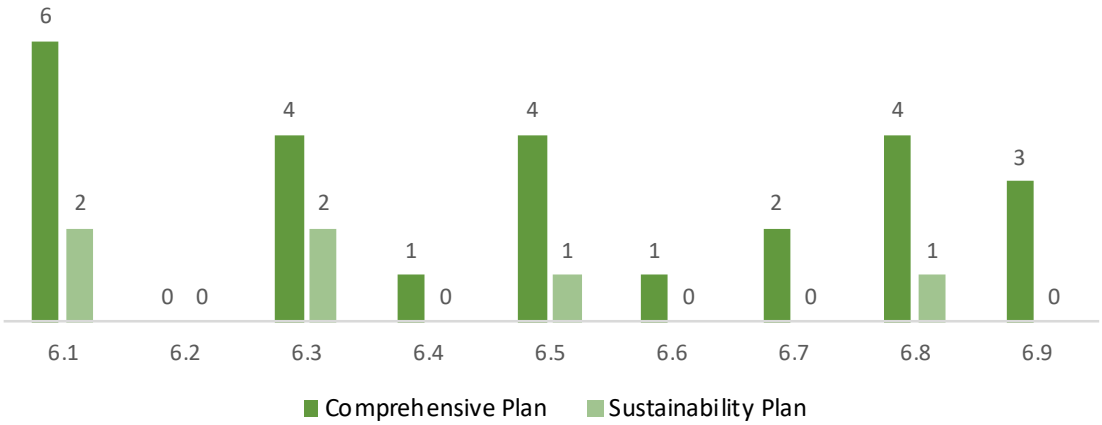
Plan Alignment Example: Orlando, FL – Best Practice 5.5: Open Space

Sustainability Plan, Goal 2, Livability: "Ensure that 95% of residential addresses are located with ½ mile of a park or open space."

Comprehensive Plan, Objective 1.1, Recreation and Open Space Goals: "The City of Orlando shall ensure that an adequate amount of park land and open space land is available to the citizens of Orlando, throughout the planning period."

Finally, 35% of best practices under Responsible Regionalism were supported by comprehensives plans, while only 8% were under sustainability plans.

Figure 11. Total Number of Comprehensive and Sustainability Plans Referencing Best Practices, Responsible Regionalism



Source: City Comprehensive and Sustainability Plans. See Appendix section for details.

Though this Principle was the least supported by either set of plans, most comprehensive plans still acknowledged Best Practice 6.1 (Coordinate local land use plans with regional transportation investments). The only Best Practice here which could potentially be well supported by sustainability plans, taking into account the trend of focus on natural resources and carbon emissions, is Best Practice 6.3 (Coordinate local open space plans with regional green infrastructure plans). Though it ties Best Practice 6.1 for the most supported best practice by sustainability plans, overall sustainability plans do not address regional issues in any substantial way.

Plan Alignment Example: Madison, WI – Best Practice 6.1: Regional Open Space

Sustainability Plan, Goal 7, Restore and Maintain Natural Habitat: "Preserve open space at the City's permanent edge by utilizing intergovernmental plans, agreements and natural environmental corridors."

Comprehensive Plan, Objective 5, Parks and Open Space: "Preserve open space at the City's permanent edge by utilizing intergovernmental plans, agreements and natural environmental corridors."

Discussion

What are sustainability plans?

Looking at the content found in the set of sustainability plans, it is clear that they are primarily focused on natural resource conservation. Overall, sustainability plans are tied to natural resources much more strongly than they are tied to the other pillars of triple bottom line sustainability (social equity and economic stability). Where sustainability plans address issues outside the scope of natural resource conservation, those issues are explicitly or implicitly tied to natural resources, including policies supporting green infrastructure, multi-modal transportation, or access to open space.

Sustainability plans are not equity plans or economic development plans. Support for social equity policies was especially limited in sustainability plans, as policies often mentioned general improvement across the city without focusing on the specifically disadvantaged and at-risk communities within the city. While these communities could certainly benefit from the policies found in sustainability plans, without an explicit tie to their improvement the policies do not meet the Sustaining Places Standards for Interwoven Equity. The limited support for the Resilient Economy Principle came through again as more relationships to natural resource conservation, rather than a broader focus on how to improve the economic standing of the city as a whole.

How well do sustainability plans align with comprehensive plans?

Half of the plans examined described an explicit relationship to their other, paired plan, stating that the sustainability plan is intended to "further" the sustainability strategies in the comprehensive plan,[7] or that the sustainability plan directly replaces the environmental chapter in the comprehensive plan.[8] The other half had no such language in either document. Examining the policies themselves and their alignment around certain best practices illuminates how the plans align in their implementation.

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[7] City of Sioux Falls, SD. (2016). Shape Sioux Falls.pdf. Retrieved from http://www.siouxfalls.org/planning-building/planning/shape

[8] City of Broomfield, CO. (2011). City and County of Broomfield Sustainability Plan. Retrieved from https://www.broomfield.org/DocumentCenter/View/9502/Sustainability_Plan_01-14-11

Comprehensive plans and sustainability plans most strongly align where the land use focus of comprehensive plans crosses with the natural resource conservation focus of sustainability plans. For the majority of the Principles, which focus on the broader topics that a comprehensive plan would address, there is very limited alignment between the plans. The exception is Harmony with Nature Principle, in which the plans aligned strongly around policies on watershed management, energy conservation, and green infrastructure – all land use questions with a natural resource focus. Still here, the plans did not align where this nexus was unclear; for example, the best practice of respecting natural topography in new construction was more supported by comprehensive plans than sustainability plans, due to a lower focus on natural resource issues. In the five other Principles, the two plans aligned only where there was an obvious nexus between land use and natural resources, like multi-modal transportation and access to open space – these were found mostly in the Principles of Livable Built Environment and Healthy Community.

Comprehensive plans addressed more of the Best Practices under the Sustaining Places Standards and were usually more thorough in how they addressed them compared to sustainability plans, across all Principles including Harmony with Nature. Sustainability plans were slightly more thorough in how they described policies that matched Best Practices under that Principle. This said, comprehensive plans are overall both broader and more thorough than sustainability plans across all Principles. This holds when examining individual best practices as well. There are only five best practices that are supported by more sustainability plans than comprehensive plans. Four of them are under the Harmony with Nature Principle, focused on specific natural resource protections, and one is under Resilient Economy (3.4 – Promote green businesses and jobs), which also focuses on natural resources. Beyond that, every best practice is more supported by comprehensive plans than sustainability plans, on average.

Next Steps

Recommendations for cities implementing sustainability plans

Communities looking to improve their overall sustainability may consider creating a sustainability plan to guide their policy decisions. For communities that choose to do so, it is important that they consider the following questions. Answering these questions will help determine whether a sustainability plan is right for the community, or if there are other avenues to include sustainability into communities that do not require the creation of a new document.

- Do you have a clear, citywide definition of what sustainability means? Is it focused on environmental concerns, or is it more broadly focused on the triple bottom line?
- What do existing planning documents already say regarding sustainability in your community?
- What authority will the sustainability plan have within the community? Is it more useful to include sustainability in existing documents with known utility?
- How will the sustainability plan align with other plans and policies across the city?

For communities that have already created a sustainability plan and committed resources towards its implementation, there are a couple avenues for aligning the sustainability plan with the comprehensive plan, and ensuring that the two plans are not materially in conflict with each other:

- Clarify the purpose of each plan and how they will interact. What content do each of the plans include? When are the plans updated? How do they overlap?
- Incorporate the policies of the lower plan into the higher plan to ensure they are enacted, either by incorporating more details into the lower plan, or referring directly to the lower plan in the higher plan
- Ensure that language around similar policies in the two plans is clear and language in one plan supports the goals of the plan without undercutting the goals of the other plan

Recommendations for future researchers

This research is a first step into understanding what sustainability plans are and how they fit into the existing planning frameworks used by cities in the United States. As a graduate research project this report is a small part of what could be a larger body of research.

The most notable need for this research moving forward is intercoder reliability. As this research was done by one person with their own comprehension of plan language and biases, a second person to read the same plans and score them would add a greater degree of accuracy

to the research, potentially significantly if it is determined that there are substantial differences in how the plans can be read. Additionally, the more sustainability plans that can be found and analyzed, the stronger the trends in the data will show.

Beyond that, there are more avenues for future research directly and tangentially related to sustainability plans. The content analysis done so far is the simple, first look at the plan content and alignment. There is likely more that can be gleaned from the data, especially after another researcher can examine the plans as well. Future researchers could interview city staff who created the sustainability plans to get a better indication of what the plans were supposed to include and how they were intended to align with comprehensive plans, as well as how they have been put into practice. They could also develop Best Practices specifically for sustainability plans, either in line with their current focus on natural resource conservation or developed in a way to expand their scope to include more and stronger policies on social equity and economic stability.

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Appendix

Sustaining Places: Best Practices for Comprehensive Plans and Scoring Sheet

PRINCIPLES							
Principle	Best Practice	Not Applicable (N/A)	Not Present (0)	Low Achievement (1)	Medium Achievement (2)	High Achievement (3)	Notes (Indicate where in the plan each principle is discussed)
1. Livable Built Environment	Ensure that all elements of the built environment, including land use, transportation, housing, energy, and infrastructure, work together to provide sustainable, green places for living, working, and recreation, with a high quality of life.						
Livable Built Environment	1.1 Plan for multi-modal transportation						
Livable Built Environment	1.2 Plan for transit oriented development						
Livable Built Environment	1.3 Coordinate regional transportation investments with job clusters						
Livable Built Environment	1.4 Provide complete streets serving multiple functions						
Livable Built Environment	1.5 Plan for mixed land-use patterns that are walkable and bikeable						
Livable Built Environment	1.6 Plan for infill development						
Livable Built Environment	1.7 Encourage design standards appropriate to the community context.						
Livable Built Environment	1.8 Provide accessible public facilities and spaces						
Livable Built Environment	1.9 Conserve and reuse historic resources						
Livable Built Environment	1.10 Implement green building design and energy conservation.						
Livable Built Environment	1.11 Discourage development in hazard zones						
2. Harmony with Nature	Ensure that the contributions of natural resources to human well-being are explicitly recognized and valued and that maintaining their health is a primary						
Harmony with Nature	2.1 Restore, connect, and protect natural habitats and sensitive lands						
Harmony with Nature	2.2 Plan for the provision and protection of green infrastructure						
Harmony with Nature	2.3 Encourage development that respects natural topography						
Harmony with Nature	2.4 Enact policies to reduce carbon footprints						
Harmony with Nature	2.5 Comply with state and local air quality standards						
Harmony with Nature	2.6 Encourage climate change adaptation						
Harmony with Nature	2.7 Provide for renewable energy use						
Harmony with Nature	2.8 Provide for solid waste reduction						
Harmony with Nature	2.9 2.9 Encourage water conservation and plan for a lasting water supply						
Harmony with Nature	2.10 Protect and manage streams, watersheds, and floodplains						
3. Resilient Economy	Ensure that the community is prepared to deal with both positive and negative changes in its economic health and to initiate sustainable urban development						
Resilient Economy	3.1 Provide the physical capacity for economic growth						
Resilient Economy	3.2 Plan for a balanced land-use mix for fiscal sustainability						
Resilient Economy	3.3 Plan for transportation access to employment centers						
Resilient Economy	3.4 Promote green businesses and jobs						
Resilient Economy	3.5 Encourage community-based economic development and revitalization						
Resilient Economy	3.6 Provide and maintain infrastructure capacity in line with growth or decline demands						
Resilient Economy	3.7 Plan for post-disaster economic recovery						

4. Interwoven Equity	**Ensure fairness and equity in providing for the housing, services, health, safety, and livelihood needs of all citizens and groups.**						
Interwoven Equity	4.1 Provide a range of housing types						
Interwoven Equity	4.2 Plan for jobs/housing balance						
Interwoven Equity	4.3 Plan for the physical, environmental, and economic improvement of at-risk, distressed, and disadvantaged neighborhoods						
Interwoven Equity	4.4 Plan for improved health and safety for at-risk populations						
Interwoven Equity	4.5 Provide accessible and quality public services, facilities, and health care to minority and low-income neighborhoods						
Interwoven Equity	4.6 Upgrade infrastructure and facilities in older and substandard areas						
Interwoven Equity	4.7 Plan for workforce diversity and development						
Interwoven Equity	4.8 Protect vulnerable populations from natural hazards						
Interwoven Equity	4.9 Promote environmental justice						
5. Healthy Community	**Ensure that public health needs are recognized and addressed through provisions for healthy foods, physical activity, access to recreation, health care,**						
Healthy Community	5.1 Reduce exposure to toxins and pollutants in the natural and built environments						
Healthy Community	5.2 Plan for increased public safety through reduction of crime and injuries						
Healthy Community	5.3 Plan for the mitigation and redevelopment of brownfields for productive uses						
Healthy Community	5.4 Plan for physical activity and healthy lifestyles						
Healthy Community	5.5 Provide accessible parks, recreation, facilities, greenways and open space near all neighborhoods						
Healthy Community	5.6 Plan for access to healthy, locally-grown foods for all neighborhoods						
Healthy Community	5.7 Plan for equitable access to health care providers, schools, public safety facilities, and arts and cultural facilities						
6. Responsible Regionalism	**Ensure that all local proposals account for, connect with, and support the plans of adjacent jurisdictions and the surrounding region.**						
Responsible Regionalism	6.1 Coordinate local land use plans with regional transportation investments						
Responsible Regionalism	6.2 Coordinate local and regional housing plan goals						
Responsible Regionalism	6.3 Coordinate local open space plans with regional green infrastructure plans						
Responsible Regionalism	6.4 Delineate designated growth areas that are served by transit						
Responsible Regionalism	6.5 Promote regional cooperation and sharing of resources						
Responsible Regionalism	6.6 Enhance connections between local activity centers and regional destinations						
Responsible Regionalism	6.7 Coordinate local and regional population and economic projections						
Responsible Regionalism	6.8 Include regional development visions and plans in local planning scenarios						
Responsible Regionalism	6.9 Encourage consistency between local capital improvement programs and regional infrastructure priorities						

Sustaining Places: Best Practices for Comprehensive Plans Scoring Criteria

• **Not Applicable**: assigned only if it can be demonstrated that community conditions or legal constraints prevent the use of the practice. Since they are subtracted from the overall potential plan score total, Not Applicable scores do not penalize the plan rating.
• **Not Present** (0 points): assigned if the practice is applicable but not referenced or included in the plan. Not Present scores do reduce the plan rating.
• **Low** (1 point): assigned if the practice is mentioned in the plan at a basic level, but is not carried further.
Example: A plan that mentions a green infrastructure network (practice 2.2) as a goal but does not address it in the plan policies, strategies, or implementation.
• **Medium** (2 points): assigned if the practice is discussed in the narrative, goals, and policies of the plan, but is not carried forward to implementation steps.
Example: A plan that has a goal and policy related to a green infrastructure network (practice 2.2) but does not define the components of the network and how it is to be implemented.
• **High** (3 points): assigned if the practice is defined and addressed through data, analysis, and support, and included in goals, policies, and implementation actions of the plan.
Example: A plan that has a goal and policy related to a green infrastructure network (practice 2.2), describes the components of the network via data and mapping, and defines how the network will be implemented.

Comprehensive Plan Scores by City, % of Best Practices Referenced by Principle							
City	Livable Built Environment	Harmony with Nature	Resilient Economy	Interwoven Equity	Healthy Community	Responsible Regionalism	Total
Franklin	82%	30%	43%	11%	29%	11%	36%
Broomfield	91%	70%	71%	78%	86%	56%	75%
Orlando	91%	90%	71%	44%	71%	44%	70%
Hillsboro	100%	90%	86%	100%	86%	56%	87%
Sioux Falls	73%	60%	57%	22%	57%	0%	45%
Madison	91%	90%	71%	67%	86%	67%	79%
New Rochelle	82%	90%	71%	22%	57%	11%	57%
Philadelphia	82%	90%	86%	56%	57%	33%	68%
Maximum	100%	90%	86%	100%	86%	67%	87%
Minimum	73%	30%	43%	11%	29%	0%	36%
Average	86%	76%	70%	50%	66%	35%	65%

Sustainability Plan Scores by City, % of Best Practices Referenced by Principle							
City	Livable Built Environment	Harmony with Nature	Resilient Economy	Interwoven Equity	Healthy Community	Responsible Regionalism	Total
Franklin	36%	30%	14%	0%	14%	11%	19%
Broomfield	45%	90%	71%	33%	29%	11%	47%
Orlando	45%	70%	29%	0%	43%	0%	32%
Hillsboro	27%	60%	0%	11%	14%	0%	21%
Sioux Falls	18%	50%	29%	11%	29%	0%	23%
Madison	55%	80%	43%	78%	86%	44%	64%
New Rochelle	27%	80%	29%	11%	71%	0%	36%
Philadelphia	45%	90%	43%	33%	71%	0%	47%
Maximum	55%	90%	71%	78%	86%	44%	64%
Minimum	18%	30%	0%	0%	14%	0%	19%
Average	38%	69%	32%	22%	45%	8%	36%

Total Score by Principle by City, Comprehensive Plans							
City	Livable Built Environment	Harmony with Nature	Resilient Economy	Interwoven Equity	Healthy Community	Responsible Regionalism	Total
Franklin	15	3	3	1	4	1	27
Broomfield	18	13	10	11	10	9	71
Orlando	19	16	9	7	8	7	66
Hillsboro	22	18	11	14	12	6	83
Sioux Falls	13	7	7	3	6	0	36
Madison	19	14	10	11	11	10	75
New Rochelle	14	11	6	3	5	1	40
Philadelphia	16	15	9	6	8	3	57
Maximum	19	15	10	11	11	10	75
Minimum	13	3	3	1	4	0	27
Average	16	11	8	6	7	4	51

Total Score by Principle By City, Sustainability Plans							
City	Livable Built Environment	Harmony with Nature	Resilient Economy	Interwoven Equity	Healthy Community	Responsible Regionalism	Total
Franklin	8	6	1	0	2	1	18
Broomfield	7	15	7	3	3	1	36
Orlando	9	11	3	0	6	0	29
Hillsboro	3	10	0	1	1	0	15
Sioux Falls	4	10	4	1	4	0	23
Madison	11	16	5	10	11	5	58
New Rochelle	6	16	4	2	8	0	36
Philadelphia	6	15	4	3	8	0	36
Maximum	11	16	7	10	11	5	58
Minimum	4	6	1	0	2	0	18
Average	7	13	4	3	6	1	35

Total Number of References to each Best Practice, Comprehensive and Sustainability Plans

PRINCIPLES		References in Comprehensive Plans	References in Sustainability Plans
Livable Built Environment	1.1	8	7
Livable Built Environment	1.2	7	6
Livable Built Environment	1.3	6	0
Livable Built Environment	1.4	7	3
Livable Built Environment	1.5	8	4
Livable Built Environment	1.6	7	3
Livable Built Environment	1.7	8	0
Livable Built Environment	1.8	7	1
Livable Built Environment	1.9	8	1
Livable Built Environment	1.10	8	8
Livable Built Environment	1.11	2	0
Harmony with Nature	2.1	7	5
Harmony with Nature	2.2	8	6
Harmony with Nature	2.3	5	1
Harmony with Nature	2.4	3	7
Harmony with Nature	2.5	6	4
Harmony with Nature	2.6	5	1
Harmony with Nature	2.7	6	8
Harmony with Nature	2.8	7	8
Harmony with Nature	2.9	6	8
Harmony with Nature	2.10	8	7
Resilient Economy	3.1	7	1
Resilient Economy	3.2	6	1
Resilient Economy	3.3	7	2
Resilient Economy	3.4	2	6
Resilient Economy	3.5	8	4
Resilient Economy	3.6	8	4
Resilient Economy	3.7	1	0
Interwoven Equity	4.1	8	4
Interwoven Equity	4.2	4	2
Interwoven Equity	4.3	5	2
Interwoven Equity	4.4	2	2
Interwoven Equity	4.5	5	2
Interwoven Equity	4.6	5	1
Interwoven Equity	4.7	4	3
Interwoven Equity	4.8	1	0
Interwoven Equity	4.9	2	0
Healthy Community	5.1	4	4
Healthy Community	5.2	4	1
Healthy Community	5.3	2	2
Healthy Community	5.4	8	5
Healthy Community	5.5	8	7
Healthy Community	5.6	4	4
Healthy Community	5.7	7	2
Responsible Regionalism	6.1	6	2
Responsible Regionalism	6.2	0	0
Responsible Regionalism	6.3	4	2
Responsible Regionalism	6.4	1	0
Responsible Regionalism	6.5	4	1
Responsible Regionalism	6.6	1	0
Responsible Regionalism	6.7	2	0
Responsible Regionalism	6.8	4	1
Responsible Regionalism	6.9	3	0