Community Sustainability Self-Assessment Tool

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Acknowledgements

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Introduction

The importance of comprehensive sustainability

Communities are constantly changing, dynamic and complex. Their needs shift in response to an unimaginable number of factors. Changes in technology, climate, global markets, housing demands, popular culture and many more factors all pose new challenges to how a municipality is able to sustain itself. History has shown that communities must be able to balance what worked in the past with innovative solutions for tomorrow. This balance can be difficult to establish because of the myriad factors that contribute to a locality's well-being. It is essential that public officials, local leaders and residents are able to identify and consider the many challenges and opportunities for their community in a deliberate manner. Then, it is important to develop plans to mitigate short- and long-term risks and capitalize on unique local features. Places that are able to do this successfully over time are considered sustainable.

How the assessment tool is organized

This *Community Sustainability Self-Assessment Tool* is intended to help local leaders think about the best practices often associated with sustainability and how they can implement these practices locally. Because sustainability is multi-faceted, the tool is divided into four main categories: economic, social, coastal and environmental. These categories are further broken down into topics, each with a set of benchmarks. In total, there are 39 sustainability topics with 254 benchmarks. **While all of these benchmarks are related to a best practice, not all of them will fit into the unique context of every community.** Local officials can decide for themselves whether or not a particular benchmark is appropriate to review when assessing their overall sustainability. The categories and topics used for this assessment are listed on the following page.

Photos: LIAA

Sustainability Topics

Economic	Social	Coastal	Environmental
Local business attraction, development and expansion	Recreation opportunities	Data gathering and mapping	Efficient energy use
Housing affordability	Public safety and crime prevention	Zoning regulations	Stormwater management
Job market diversity	Historic preservation	Structural design near dunes and bluffs	Pollution/waste prevention
Job training and workforce readiness	Arts and culture	House siting	Biodiversity and invasive species
Educational opportunities	Transportation options	Critical facilities and infrastructure	Green infrastructure
Poverty	Public outreach methods	Disaster preparedness	Watersheds
Local food systems	Social equity	Bluff and ravine protection	New development siting
Information security	Volunteer opportunities	Professional training	
Regional cooperation	Aging in place	Hazard planning	
Leveraging funding from state and federal governments	Children and the planning process		
Community branding and marketing	Design standards		
Infill and redevelopment			

How to use this assessment tool

Each sustainability principle features various benchmarks that are often used as an indicator of local resilience. To complete the community self-assessment, read the benchmark question and its description and choose from the following response options:

Example of how a community may score themselves

Yes (Y) - The community has included this sustainability principle in its planning efforts and/or local policies and initiatives.

Yes, but should improve (I) - The community either practices this sustainability principle but does not explicitly include it in its planning documents, or the principle can be found in planning documents but could be implemented to a greater degree.

No (N) - The community has not considered this sustainability principle in its plans or local initiatives.

Don't know (?) - It is unclear if the community is practicing this sustainability principle or if this sustainability principle is applicable given local conditions.

Not applicable (NA) - This sustainability principle is not applicable given local conditions (for example, dune protection in a community without dunes).

	Benchmark	Self-Assessment	Description
2.4	Does the master plan, zoning ordinance or other municipal plan, regulation or program call for incentivizes or regulations for developments to include affordable housing options?		For a community to effectively address housing issues, it should have adopted plans that describe the local goals, objectives and action steps to achieve greater sustainability as it pertains to housing. Support for these plans acts as support for the "sticks and carrots" that the municipality can use to implement the community's vision for its housing.

The purpose of this self-assessment tool is to evaluate each of the benchmarks and look for gaps in your community's overall sustainability by identifying what is working well (Y), what is present but needs improvement (I), what is missing (N) and what is unclear (?). Once each benchmark has been categorized, the community can begin to plan for a more resilient future by addressing the best practices that would benefit the local economy, social opportunities, environment and coastlines.

Economic
Sustainability

Local business attraction, development and expansion

Economically resilient communities are attractive to business owners looking to relocate, expand or set up shop in a new area. These communities are attractive because they have a supportive business climate that seeks out collaborative efforts to benefit the community as a whole.

	Benchmark	Self-Assessment	Description
1.1	Does the municipal website list available commercial properties?		Businesses are more likely to locate in a particular municipality if they can easily find clear and accurate information regarding available properties.
1.2	Is the process for potential business owners to purchase or rent space for their business clearly described through an accessible platform?		Business owners want clarity when it comes to finding a space to set up shop. Making this process as easy as possible can go a long way in attracting entrepreneurs to the area.
1.3	Is the process for potential business owners to acquire a business license clearly described through an accessible platform?		Similar to finding a work space, the municipality should also provide easy-to-follow instructions on the necessary steps to acquire a business license.
1.4	Does the municipality actively promote the benefits of locating a business within its jurisdiction?		Every community is unique in what it offers to someone wanting to conduct business there. Make sure that these unique features are described somewhere, such as on the municipal website and/or in a pamphlet.
1.5	Does the municipality work with local business owners to identify opportunities for expansion?		When local businesses succeed, the community succeeds. The private sector should have a platform to describe barriers or missed opportunities that the local government may help overcome.
1.6	Are there local institutions that actively work to foster a collaborative business community (e.g., local chamber of commerce, business association)?		The purpose of this benchmark is to align local businesses around a common vision. Collaboration can be instrumental in attracting and growing businesses, as well as getting support from the business community for public initiatives.
1.7	Does the community have a business incubator to support startups?		Business incubators provide low-cost workspaces and technical assistance to help new businesses establish themselves. Incubators are important to the local economy and new businesses because they help offset a portion of the startup costs.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Housing affordability

A thriving housing market is a good indicator that a community is implementing many of the best practices described in this guide. However, a high-demand housing market can also lead to overburdensome housing costs, especially for low- to medium-income residents. This often has a negative impact on the many industries and institutions that rely on the local labor force, and may also result in strained social cohesion. Fortunately, local governments have tools at their disposal to increase the share of affordable housing options in the community.

	Benchmark	Self-Assessment	Description
2.1	Has the municipality identified the number of residents that are rent burdened?		"Rent burdened" often refers to individuals paying more than 30% of their gross income on housing expenses. By knowing what percent of the population is using a disproportional amount of their income on housing, the local government can better inform plans, policies and resource allocations to address the issue.
2.2	Does the municipality have a program in place that addresses housing affordability?		If housing affordability is a problem in the community, it is important for the local government to provide resources to rent burdened or otherwise financially strained households. This could mean a municipal program such as a housing commission, public-private partnerships, or policies that require developers to set aide a portion of units for low-income tenets.
2.3	If there are housing units that are subsidized, are these units located in places near a diverse range of amenities (groceries, pharmacies, schools, public transportation, etc.)?		Subsidized housing units should be dispersed across the community to avoid creating areas of condensed income constraint. Siting these housing units close to amenities can help connect low-income residents to a variety of important economic and social resources.
2.4	Does the master plan, zoning ordinance or other municipal plan, regulation or program call for incentivizes or regulations for developments to include affordable housing options?		For a community to effectively address housing issues, it should have adopted plans that describe the local goals, objectives and action steps to achieve greater sustainability as it pertains to housing. Support for these plans acts as support for the "sticks and carrots" that the municipality can use to implement the community's vision for its housing.

Y—Yes **I**—Yes, but should improve **N**—No **?**—Don't know **NA**—Not applicable

	Benchmark	Self-Assessment	Description
2.5	Does the master plan address "missing middle" housing?		Many communities offer single-family detached and apartment housing and little else. Providing more options such as condos, townhouses and duplexes can help attract a diverse range of workers to the area.
2.6	Does the zoning ordinance allow for a wide range of housing types?		A key component to promoting missing middle housing options is to make sure that the zoning ordinance permits these types of development in appropriate districts.
2.7	Can manufactured housing be sited within the community?		Manufactured housing is frequently prohibited in zoning ordinances because of stigmatization. However, allowing manufactured housing can help to increase the community's share of affordable housing. These structures can also be regulated for specific design standards.
2.8	If manufactured housing is allowed in the zoning ordinance, is it sited near amenities such as schools, grocery stores, public transportation, etc.?		While many communities allow manufactured housing within the municipality, they often site these neighborhoods in isolated locations. These residents should have access to resources and points of interest, too.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Job market diversity

A resilient community has an employment base comprised of a wide range of industry types. These communities are less susceptible to short- and long-term shocks to the economy when markets shift. These communities understand their economic base and have identified opportunities to build their local identity around their strongest and most adaptable industries.

	Benchmark	Self-Assessment	Description
3.1	Does the municipality have a diverse range of industries representing its workforce?		A community is considered to have a diverse economic base when its employment is spread across major industries such as manufacturing, retail, education, health, entertainment, finance and technology. The loss of one industry would not cause a long-term disturbance to the community's well-being.
3.2	Has the community conducted a *location quotient analysis* to identify its economic base(s), and is the community working to grow its import sectors? (See the following page for more details on conducting an LQ Analysis.)		A location quotient analysis shows how concentrated a particular industry is in the municipality or region compared to a larger geographic measure. This is an important measure to inform economic strategic planning and other efforts to diversify the local economy. See more on the LQ on the following page.
3.3	Has the community identified which industry sectors or sub-sectors make it unique, so that it can expand its economy around these businesses?		This can also be determined by LQ scores. For example, Ingham County, Michigan has an LQ score of 1.39 for NAICS 524, insurance carriers and related activities. The locality can capitalize on this high concentration of insurance companies by hosting conferences for the insurance industry, thereby drawing in more dollars to support other businesses such as hotels, restaurants, entertainment venues and gas stations, among others.
3.4	Has the community adopted plans that specify goals, objectives and action steps for increasing the diversity of industries in the local economy?		The community should have clearly defined steps for achieving a diverse job market. This should include overarching goals, achievable objectives, policy options and initiatives, and possibly assigned responsibilities to carry out these goals.
3.5	Does the local government work with the business community to identify gaps in employment?		There are times when the business community cannot secure consistent employees for a variety of reasons (lack of particular skills, housing is unaffordable for employees, etc.). Local governments should understand these gaps so that collaborative problem solving can take place.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

How to Conduct a Location Quotient Analysis

The location quotient analysis is a measure of how concentrated an industry is in the local economy. Knowing the LQ score for various industries can help the municipality:

1. to determine which industries make the regional economy unique,

2. to identify which industries the locality is exporting,

3. to identify emerging export industries that are starting to bring economic activity into the local market, and

4. to identify export industries that have the potential to threaten the region's economic base.

While employment data can be gathered at the municipal level, the Bureau of Labor Statistics makes this process easier by providing county-level data on a quarterly basis (https://data.bls.gov/cew/apps/data_views/data_views.htm#tab=Tables). A score of 1 or higher indicates that an industry sector, or sub-sector, is a key part of the local economic base and that the municipality is likely exporting that industry outside of the community. A score between 0.85 and 1 indicates that it is part of the economic base with room to grow (i.e. that the municipality could potentially support more of that industry). Municipalities should seek to have many industry sectors with a score close to 1 to ensure that the economic base is diverse and not relying heavily on one or two industries. Reliance on one industry can put a local economy at risk if changes in technology, consumer preferences or global markets make that industry obsolete in that region.

Example analysis for Wayne County, MI

$$\text{Location Quotient} = \frac{\text{Local industry employment / Total local employment}}{\text{Regional industry employment / Total regional employment}}$$

Job training and workforce readiness

A sustainable community means having a populace that is ready to take on the jobs that current and emerging markets demand. These places can easily shift their education, training programs and resources to adapt to changes in the local, regional and global economy. This involves having a systems-based approach to workforce readiness by understanding how the local government, non-profits, for-profit businesses and educational institutions work together to provide the resources necessary to build a strong base of human capital.

	Benchmark	Self-Assessment	Description
4.1	Are high school graduates in the community finding employment upon graduation/attending college/ completing vocational training?		Communities with a reputation for preparing young people for the workforce are more able to attract new families to the area and provide talent to local businesses.
4.2	Are local educational institutions such as public schools and community colleges working with employers to identify market-driven skills?		Educational institutions, especially community and regional colleges, should have an understanding of market needs so that faculty hires, curricula and departmental funding reflects employer demands.
4.3	Is job training available for workers shifting to a new industry?		It is important to provide workers in diminishing industries, or workers seeking to start a new career, the opportunity to acquire the necessary training to excel in a new work environment. This is one component to retaining long-term residents to the area.
4.4	Are there job training opportunities for unemployed residents who are seeking work?		High unemployment causes social and economic woes in a community and can even increase the population of individuals susceptible to the negative effects of climate change (unemployment is one variable associated with hardship in overcoming the effects of a climate-related disaster).
4.5	Has the local government worked with the private sector in the community to finance job training programs?		Public-private partnerships can be instrumental in creating programs and funding to help facilitate job training in the municipality. Local governments often do not have the resources to accomplish this independently, creating a need for collaboration. This is an opportunity for the private sector to train the skills they need for their operations.
4.6	Does the community work with universities, state agencies, research institutes and/or industry leaders to identify relevant market and employment trends?		The local government should know if its economic trends are in line with regional or national trends to better inform policy decisions going forward. For instance, if one job sector is diminishing nationally, it may indicate a heightened need to attract an industry gaining in relevance.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Educational opportunities

An educated populace helps to meet the three traditional pillars of community sustainability. Economically, an educated community is one with innovative thinkers and skilled employees. Environmentally, they are technically-trained to deal with the negative impacts of climate change and are informed on the best practices to mitigate further environmental damages when developing. A well-informed people also presents more opportunities for effective civic participation and neighborhood cohesion. This can lead to a reduction in the social concerns that often accompany low social cohesion such as poverty and crime. Sustainable communities are attractive because they offer affordable and accessible educational advancement opportunities to all age groups and skill levels.

	Benchmark	Self-Assessment	Description
5.1	Are there lifelong educational opportunities in the community or region?		Lifelong educational opportunities may include adult education, writing or other skills workshops or guided tours. Options for personal advancement are key to creating a sustainable economy and local culture.
5.2	Are there public education opportunities and/or events offered on a regular basis?		Providing free or low cost education programming can help to create an engaged, informed and collaborative community.
5.3	Do residents have access to local funding opportunities to pay for an advanced education?		The rising cost of acquiring a higher education degree calls for proactive collaboration by local governments to address financial needs. Communities that effectively support education are more attractive to people of all ages wanting to advance their careers and knowledge base.
5.4	Does the community record the annual high school graduation rate to better understand this trend over time?		Graduation and dropout rates are good indicators of whether or not the current resources or policies directed towards education are effective, or if new thinking, programs, funding or collaborative partnerships should be considered.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Poverty

Sustainable communities are highly sought after by people of various socioeconomic statuses. These communities promote individuals' ability to develop and contribute economically and socially to the area. In this regard, these communities are highly aware of the importance of providing resources to the most disadvantaged population so they have opportunities to pursue economic and social well-being.

	Benchmark	Self-Assessment	Description
6.1	Does the municipality regularly identify areas of concentrated poverty in order to more effectively target available resources?		Collecting poverty data is a preliminary step in identifying areas that may need more access to resources. It is important to understand where vulnerable populations are located to ensure that poor living conditions do not become concentrated and more difficult to amend.
6.2	Are there resources available to help those in poverty meet their base needs such as food and shelter?		Helping individuals to meet their base needs is a crucial aspect of allowing them to pursue opportunities for personal and familial security (e.g., acquiring a full-time job, spending quality time with children, engaging in civic matters, etc.).
6.3	Does the local government have a working relationship with local institutions and private businesses based on addressing poverty in the community?		Compared to past generations, many local governments now have fewer resources on hand to deal with the social and economic problems commonly associated with poverty. For this reason it is important to partner with other entities to remedy these issues.
6.4	Do minimum wage jobs in the community pay a living wage?		This recommendation can be associated with benchmarks regarding housing, transportation and access to other necessities. Sustainable communities provide public amenities that help to reduce the cost of living. Various organizations provide living wage calculators to help give an idea of what expenditures are most burdensome to residents in a particular area.
6.5	Are poverty rates and unemployment rates analyzed on a yearly basis to understand trends over time?		This is the simplest benchmark used to understand if local policies and initiatives are working to reduce poor living conditions in the area. Because sustainable communities provide opportunities for success, individuals in poverty will often relocate to these places, meaning that poverty rates will likely never be at zero percent. Therefore, a good measure of poverty reduction may be to look at if certain demographics or neighborhoods are raising their socioeconomic statuses over time.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Local food system

Developing a local food system touches on all three of the traditionally recognized pillars of sustainability. Sourcing food locally increases environmental sustainability by reducing the vehicle miles traveled to get food to people and can promote the preservation of quality farmland. It also increases the likelihood that the food on people's tables will be fresher and contain fewer chemicals. Socially, farmers markets and farm-to-table businesses connect the agricultural industry to the local culture. There is value to people knowing who grows the food they consume. Economically, locally sourcing food indicates a self-sufficient market wherein money exchanged for goods remains in the local economy.

	Benchmark	Self-Assessment	Description
7.1	Does the master plan address food security?		Initiatives, policies and implementation strategies need to be guided and supported by the master plan. This is an important part of garnering public buy-in and awareness of how local food systems foster sustainability.
7.2	Are there ways for farmers to sell their products locally?		Farmers markets and business incubators can help support the farming industry. The local government can also establish relationships with the agricultural industry and work collaboratively to identify barriers and opportunities for establishing local food systems.
7.3	Is the public educated on the benefits of local food systems (e.g. money spent remains in the community, support for local farmers and businesses, job creation)?		Although it may seem intuitive that locally sourced foods are often better for the community, it is important to educate people and market these benefits effectively.
7.4	Does the municipality's code of ordinances support community gardening in its neighborhoods?		Municipalities can promote community gardening by allowing gardens as a permitted use in certain zoning districts. In addition, they can provide financial support, technical assistance and education to ensure that community gardens are a local success.
7.5	Does the community have programs in place to keep locally grown food, and local dollars spent on food, in the local economy?		Communities can develop programs such as a Farm to School Initiative or a Community Supported Agriculture Initiative to connect the agricultural industry's products to local schools, restaurants and food stores.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Local food system (cont.)

	Benchmark	Self-Assessment	Description
7.6	Are there farmers markets or locally sourced food stores/restaurants in the community?		The municipality can further support local food sourcing by establishing locations for farmers to sell their goods to the community.
7.7	Does the master plan promote the preservation of high-quality farmland?		Widely recognized as a contributor to the degradation of all three pillars of sustainability, sprawling developments that eliminate high-quality farmland should be avoided as much as possible.
7.8	Has the municipality identified its Food Deserts in order to plan for improved food security in those neighborhoods?		Food Deserts, as defined by the US Department of Agriculture (USDA), are areas where people have limited access to a variety of healthy and affordable food. The USDA has developed an interactive online mapping tool to help communities visualize where food deserts exist within their boundaries.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Information security

As technology becomes more integrated into the day-to-day operations of municipal governing, the threat posed by cyber hackers has increased the potential financial loss from a data breach. Communities need to be aware of their cyber vulnerabilities and work swiftly to address gaps in data security. In addition, communities need to recognize that cyber threats against municipal governments are becoming more common and backup plans for carrying out governmental functions should be planned for in advance.

	Benchmark	Self-Assessment	Description
8.1	Does the municipality have safeguards in place to prevent a potential cyber attack?		This involves a self-assessment of the municipal network's security. This can be an internal analysis or may be hired out to a third party if the municipality does not have the resources or expertise necessary.
8.2	Does the municipality have a plan to respond in the event of a cyber attack?		The municipal government should have the ability to process day-to-day operations in an alternative manner in the event that routine operations are compromised.
8.3	Does the municipality have a training program in place to help municipal employees identify potential cyber threats?		In most cases, cyber threats are avoidable. Municipal staff, elected officials and others within the local government should be trained to identify potential cyber threats and how to respond when information has been breached.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Regional cooperation

Local governments can reduce their expenses by sharing services and managing resources with neighboring jurisdictions or with the region as a whole. It is important to recognize that the locality fits into the context of a larger, regional built environment. People travel to neighboring communities to find products and services that they cannot find in their own community. Natural amenities such as rivers, lakes and forests typically do not start and end at municipal boundaries. Regional planning recognizes this and seeks to promote its own ability to realize the economic, social and environmental gains by participating in cooperative planning efforts.

	Benchmark	Self-Assessment	Description
9.1	Does the municipality update its plans in consideration of nearby municipalities' plans for future development?/ Does the municipality have joint plans with nearby jurisdictions?		Municipalities can either critically examine how their plans fit into a regional context (how their decisions will affect their neighbors) or they can develop plans in direct coordination with another municipality(ies).
9.2	Does the municipality share services with other local governments, when possible, in order to reduce its overall expenses?		Local governments can seek opportunities to share services such as police, fire and public transportation with regional partners.
9.3	Does the municipality work with neighboring communities to plan for built and natural features that extend across borders (roads, forests, commercial corridors, etc.)?		Municipal governments should seek to understand how development in their community may affect the quality of neighboring communities. This should also be completed for natural features that cross municipal borders in order to preserve, improve and introduce assets that benefit the region as a whole.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Leveraging funding from state and federal government

Local governments in recent times often do not have the resources to independently carry out projects that make them competitive and sustainable. For this reason, it is often necessary for local officials to seek partnerships and funding opportunities from external sources. State governments and federal agencies can help to offset the costs of projects that promote sustainable practices.

	Benchmark	Self-Assessment	Description
10.1	Does the municipality regularly seek state and federal grant opportunities for local projects?		State and federal agencies have funding opportunities for community projects that local governments can apply for. Local officials should be prudent in seeking these funding sources.
10.2	Does the municipality seek partnerships with state or federal entities to help finance projects?		State and federal agencies have policy agendas that they want to see implemented at the local level. Local governments can work to form partnerships on initiatives that align with local goals and objectives. If the local government itself does not have the ability to enter into a direct relationship, a local non-profit or community foundation may help to bridge this gap.

Y—Yes　**I**—Yes, but should improve　**N**—No　**?**—Don't know　**NA**—Not applicable

Community branding and marketing

Economically sustainable communities capitalize on their unique features by establishing a branded image and marketing that brand to potential visitors, residents and businesses. This community image should be consistent throughout the area and should highlight local assets by making them easy to find. These practices help to establish a sense of place that is often associated with sustainable places.

	Benchmark	Self-Assessment	Description
11.1	Does the community have a website?		The website should provide information regarding government, business, employment, arts and recreation, public meetings, municipal departments, the local history, a community calendar and any other information that a resident, potential business owner and tourists would want to know. Consider who the audience is and cater information to those entities.
11.2	Does the community have a distinguished brand that is easily recognizable?		The community brand may contain an image and/or phrase that reflects the local history, where the community wants to be in the future or one that highlights a key asset (i.e. a natural feature or a niche quality).
11.3	Has the community identified its assets that create a unique sense of place?		Communities should promote and capitalize on their features that make them unique to other places. These features may be natural (water bodies, forest land, rock formations, etc.) or cultural (built environment designs, historic identity, advantage in a local industry or a distinct recreation identity).
11.4	Does the municipality actively market its local assets to those outside the community?		The next step after developing a recognizable community brand is to make it visible to a wider audience. This involves seeking opportunities to advertise on TV, radio, print and/or online.
11.5	Is there wayfinding in the community that directs residents and visitors to natural and cultural amenities?		If the community does well to market its amenities to a wide audience, it is reasonable to assume that more people will want to visit these amenities. Their experience is made more comfortable when these locations are easy to find (motorized and non-motorized).

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

	Benchmark	Self-Assessment	Description
11.6	Does the community implement a consistent theme into its infrastructure that represents the local identity (signage, benches, facades, banners, light posts with consistent materials, colors, symbols)?		The community brand is more successful at creating a unique sense of place when it is well-designed and visible throughout the municipality.
11.7	Does the community use public access TV, social media, newspapers and/or other mediums to let the public know about recreation, education and other community gatherings?		Civic participation and an active community are both easier to achieve when residents and visitors know what is happening in the community. A variety of mediums helps to ensure that a diverse range of people are knowledgeable about local program, services and events.
11.8	Are the main routes and gateways into the community targeted for aesthetic improvements/beautification (i.e. design standards, landscaping, etc.)?		The main routes that a person may encounter during a visit should be well-maintained to provide a positive image of the community's overall character. These may include main corridors, routes from airports to conference centers or retail districts and gateways.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Infill and redevelopment

Infill and redevelopment projects are frequently used by municipalities to promote economic, environmental and social sustainability. Infill and redevelopment efforts can be instrumental in promoting compact development patterns that maximize the efficiency of municipal services such as sewer and water in places where these services already exist. These projects also reduce the need for greenfield developments, which put a strain on municipal services and can infringe on quality farmland. Infill projects typically add economic value to the community be improving underutilized spaces, remediating brownfield sites, eliminating blighted structures and by promoting more pedestrian-oriented public spaces.

	Benchmark	Self-Assessment	Description
12.1	Does the master plan identify priority sites for redevelopment?		Sites that are underutilized, blighted or vacant should have plans for redevelopment. These plans should be created through public engagement, making them well-suited for the master plan.
12.2	Has the community identified, inventoried and prioritized brownfield sites for redevelopment, if any exist?		Brownfield sites are detrimental to the quality of a community. The municipality should work proactively to plan for their remediation into a use that contributes to the sustainability of the community.
12.3	Does the municipality work with a Brownfield Redevelopment Authority or a Land Bank to help redevelop underutilized or abandoned parcels?		Brownfield Redevelopment Authorities and Land Banks can provide the administrative, technical and financial resources that many municipalities lack.
12.4	Does the municipality promote redevelopment in the master plan as an alternative to greenfield development?		Greenfield developments, while a cheaper housing alternative to infill, create development patterns that are often economically and environmentally unsound when compared to infill.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

	Benchmark	Self-Assessment	Description
12.5	Has the community evaluated its development standards to identify ways to make it easier for developers to improve blighted or underutilized spaces?		The main reason that developers prefer to build in greenfields is that infill and redevelopment is almost always accompanied by high costs and legal barriers. Municipalities can help to make remediation efforts more attractive to developers by reducing and removing these barriers.
12.6	Are new developments designed for future adaptation to accommodate a range of uses?		Communities are constantly changing as technology, culture and living preferences change. Buildings that are designed for adaptability can help to reduce the costs for redevelopment later on.
12.7	Are blighted properties in the community identified and mapped?		Mapping blight can help the local government or land bank prioritize remediation efforts.
12.8	Are new developments in the community designed for deconstruction and material reuse?		The emerging field of Domicology views the entire life cycle of structures. Construction techniques such as modular designs and the use of nails instead of screws can make it easier for the materials that make up a structure to be reused once said structure is no longer viable in its existing use.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Social
Sustainability

Recreation opportunities

Socially sustainable communities are able to attract and retain residents of all ages because they provide programming and infrastructure for people to recreate. A complete community is one where people can live, work and play. The play component to that is not to be underestimated in its importance. People form social bonds through shared experiences and local governments perform a critical role in facilitating the settings that allow these interactions to take place.

	Benchmark	Self-Assessment	Description
13.1	Do community residents have access to a range of recreational opportunities?		This may involve inventorying all recreational assets and evaluating the extent to which each is used by the public and where gaps remain in recreation opportunities based on community input.
13.2	Is there infrastructure in place that supports recreation (trails, parks, civic centers, etc.)?		The most important part of promoting recreation in the community is having the necessary infrastructure in place. Local governments can partner with recreation groups or the business community to help fund some of these improvements.
13.3	Does the municipality have a plan in place to fund recreation opportunities now and into the future?		The municipality, in order to be truly sustainable in this sense, should have funding mechanisms, goals, objectives and implementation strategies clearly defined in an adopted document.
13.4	Are recreation opportunities marketed through a variety of platforms such as websites, emails, pamphlets, etc.?		Once programming and spaces for recreation are created it is important that people in the community and region are aware of them. Greater participation means more potential for public support and funding to sustain these activities into the future.
13.5	Has the community adopted or updated its parks and recreation plan in the last 5 years?		Not only does planning give some guidance to where the community would like to see resources allocated for parks and recreation, some state and federal grant opportunities require the municipality to have an adopted 5-year parks and recreation plan.
13.6	Does the community seek a wide range of public input from residents to help inform its recreation planning?		Individuals from various neighborhoods and who represent different interests should all be sought during the public input process so that the recreation plan or recreation part of the master plan is a true representation of community interests.
13.7	Are there recreation activities available to people in a range of age groups, socioeconomic statuses and physical abilities?		Children, the elderly, low-income individuals and people with physical handicaps should be able to access public recreation facilities. Equitable communities are considered more sustainable.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Public safety and crime prevention

Sustainable communities provide a built environment that promotes safety in coordination with function and aesthetics. These communities have plans in place to deal with possible disturbances caused by natural disasters, especially regarding resource allocation to vulnerable populations. Programming, policies and street designs all contain features aimed at reducing crime and encouraging safe and healthy neighborhoods.

	Benchmark	Self-Assessment	Description
14.1	Does the community review its safety plans, procedures, available resources and training programs for emergency responders on an annual basis?		Although natural disasters such as extreme heat, wind and flooding can cause costly damage to a locality, these costs can be reduced through effective planning before an event occurs.
14.2	Does the municipality engage in discussions with residents to identify gaps in emergency response protocols?		Residents have intimate knowledge of the gaps in their neighborhoods regarding health and safety. Gathering this input to help inform governmental decisions should be a priority.
14.3	Has the municipality identified and mapped its vulnerable populations (low-income, elderly, less educated, or minorities)?		Knowing where vulnerable populations reside is an important part of knowing where resources need to be allocated during an emergency and what gaps exist for public safety.
14.4	Does the municipality have a plan in place to provide resources to its vulnerable populations in the event of a disaster (extreme heat, flooding, etc.)?		Beyond knowing where vulnerable populations are located, the community should have clear protocols in place to help these areas during an emergency.
14.5	Does the community implement Crime Prevention Through Environmental Design (CPTED) principles into its code of ordinances?		CPTED principles are design features that help to deter crime. Implementing these into the zoning ordinance and site plan review process can help to reduce criminal activity near neighborhoods and businesses.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

	Benchmark	Self-Assessment	Description
14.6	Does the municipality map instances of crime, accidents and other emergencies and track these in a database?		Communities are better equipped to address crime and prevent it from occurring when they have aggregated crime data over time. This helps to show areas high in criminal activity, as well as patterns of specific types of crimes.
14.7	Is there a system in place for residents to report non-emergency violations such as blight, dangerous buildings and other nuisance violations?		Local officials cannot be everywhere at once. It is helpful to involve the public in gathering information on code violations so that hazards and nuisances can be dealt with quickly. The municipality can provide this platform with a call-in service or a web-based reporting platform.
14.8	Are local ordinances enforced?		The code of ordinances is only as effective as its enforcement. Municipalities must have the staff, procedures and resources to enforce these regulations.
14.9	Are the police, fire and other public safety entities actively engaged during municipal planning processes?		Public safety staff and officials should be regularly consulted, especially during the planning process. Their knowledge of local barriers and opportunities for public health and safety should be integrated into municipal plans and policies.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Historic preservation

The history of an area helps to define the sense of place that makes the community unique. Places with a distinguishable positive quality such as historic architecture and/or cultural sites, are attractive to residents, businesses, talented workers and visitors. For this reason, communities should work to preserve their historic features through incentives and regulations and market these features to attract tourism and investment in the area.

	Benchmark	Self-Assessment	Description
15.1	Has the municipality created an inventory of historic structures or sites within the community?		In order to avoid redevelopment plans or improvements that threaten historic sites, the community should have a detailed inventory of these assets to inform decisions on their zoning and preservation.
15.2	Has the municipality adopted a historic preservation plan?		Once the community has identified historic structures that it would be appropriate to preserve, the next step is to include historic preservation in municipal plans. This provides the language necessary to support policy decisions.
15.3	Has the municipality adopted zoning and design regulations that support the preservation of historically significant buildings, sites or neighborhoods?		This is the implementation portion of historic preservation. Developers and residents should be well aware of the municipality's guidelines for new developments and structural improvements and these guidelines should be enforced.
15.4	Has the municipality partnered with non-profit and for-profit organizations to fund programming that celebrates and takes advantage of the economic value of historic assets in the community?		There are often residents and organizations with an interest in preserving historic places. These groups can play a vital role in maintaining and promoting the history of the area and the local government should seek partnerships whenever possible.
15.5	Has the community registered historically significant buildings, sites, structures, districts and objects with the State Historic Preservation Office (SHPO)?		Registering historically significant community features with SHPO can help preserve them for aesthetic, economic, social and environmental benefits. Each state has a SHPO that plays a critical role in carrying out many of the responsibilities in historic preservation.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Arts and culture

Economies rely on talented workers and talented workers are attracted to places with a vibrant cultural scene. Communities with creative people are more economically sustainable because they often host more entrepreneurs and innovators. It is also important that the arts and cultural scene is widely accessible. All age groups, socioeconomic statuses and physical capacities should have the opportunity to access some form of art and culture locally.

	Benchmark	Self-Assessment	Description
16.1	Does the municipality provide support to artists for public art projects such as murals and displays?		This may come in the form of establishing a local arts council or a public art authority to develop programming and garner funding for public projects.
16.2	Does the municipality provide support for arts programming or cultural tourism?		It often isn't enough to simply have historic structures and places in the municipality. Making these places part of the local cultural scene through programming and marketing is key to seeing the economic and social benefits of historic preservation.
16.3	Are art classes and programs part of the curriculum in the community's public schools?		A community developing a thriving art scene often cannot rely solely on artists moving to the area. Art education can foster the creative and innovative qualities in young people that allow them to contribute to local sustainability.
16.4	Does the community include art in public spaces?		Art in the community should be for everyone regardless of socioeconomic status. While some displays, especially those in galleries or museums may warrant a fee for entry, there should also be public displays such as murals and sculptures that people can view free of charge.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Arts and culture (cont.)

	Benchmark	Self-Assessment	Description
16.5	Does the municipality host cultural events that attract a diverse range of residents and visitors?		Cultural events in the community can be more effective at engaging residents if they celebrate a range of interests and cultures. A significant part of developing a socially cohesive locality is to make a variety of interested parties a part of the cultural landscape. These can supplement events that celebrate the community as a whole.
16.6	Are art venues or other cultural sites accessible to low-income individuals?		The municipality should try to make access to culture as feasible as possible for as many residents as possible. This may involve partnerships with local institutions or businesses to help reduce the cost of entry to events, galleries and other creative places.
16.7	Can local artists afford market rate housing or workshops in the community? If not, does the community have a program in place that targets housing/workshop affordability for artists?		One of the best ways to encourage more art to enter the community is to provide incentives for artists to relocate there. Reducing the cost of living and removing barriers to starting a workshop, gallery or business are ways to grow the art community.
16.8	Are there a variety of cultural sites and/or art displays in the community?		Art should be spread throughout the community rather than concentrated in one area alone.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Transportation options

Transportation is one of the most important aspects of community sustainability. The presence of non-motorized transportation options can help to reduce local reliance on non-renewable energy sources and can help cut down on air and water pollution. Communities that support alternative transportation options other than the personal vehicle are more equitable because they allow low-income individuals, the elderly and children the ability to access a wider range of places. There are many economic benefits to adding transportation options. One of the more obvious results is that when people have to spend less on transportation they then have more money to spend on local goods, services and entertainment.

	Benchmark	Self-Assessment	Description
17.1	Can residents safely access key community locations such as grocery stores, schools and parks using non-motorized transportation?		Condensed development patterns, wide sidewalks, clearly marked crossings, signage and streetscape amenities can all help to make a place more walkable, thereby encouraging less dependence on the personal vehicle.
17.2	Are sidewalks, widened shoulders or other multi-use paths incentivized or regulated into the planning and development process?		The municipality can promote walkable streetscapes by incentivizing or regulating their implementation into the development process. One example could be providing a density bonus to a developer if they provide landscape and streetscape improvements to the publicly accessible space around the development.
17.3	Are mixed-use developments encouraged in strategic locations to promote walkability?		Putting residences closer to the business that they often visit can play a key role in reducing automobile dependence. While mixed uses are not appropriate everywhere, their strategic placement can help promote a pedestrian-oriented community.
17.4	Has the municipality conducted a review of household income expenditures to assess how many residents are spending more than 15% of their income on transportation?		Residents are considered to be overburdened by the cost of transportation if it exceeds 15% of their gross income. A high cost of transportation is likely accompanied by a reduction in spending on other goods and services.
17.5	Does the built environment provide safety features for bikers and pedestrians?		Road markings, clearly-marked crosswalks, pedestrian islands and curb bump-outs are just a few examples of what communities can include in their streetscape to make walking and biking safer options for residents.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

	Benchmark	Self-Assessment	Description
17.6	Do individuals without a personal vehicle have access to public transportation options?		Regarding equity, people without access to a personal vehicle should still be able to travel to work, school, businesses and parks with relative ease. Walkability and efficient public transportation help to reduce automobile dependence.
17.7	Does infrastructure in the community comply with the Americans with Disabilities Act (ADA)?		Sidewalks, crossings, curb cuts and other streetscape features should all comply with the Americans with Disabilities Act to ensure that local assets are accessible to people of all ages and abilities.
17.8	Has the community conducted a traffic study, traffic count and/or access management review in the past 5 years?		The community should periodically review its traffic infrastructure to look for gaps in safety and efficiency. Some transportation planning best practices from the past are inappropriate in a modern context.
17.9	Has the community conducted a parking study in the past 5 years?		Parking studies measure demand for parking, if metered rates are adequate, where more parking is needed and who owns current parking facilities. This is a good opportunity to collaborate with the business community.
17.10	Has the community conducted a transportation demand analysis in the past 5 years?		A transportation demand analysis looks at the number of trips by persons and vehicles in the study area, how the trips are distributed throughout the area, the mode of transportation used for the trip and the route that the trip takes.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Public outreach methods

Good governance means that people are able to express their opinion, that their opinion informs local planning for the future and that people know how their input is being used. In addition, the local government should work to ensure that a representative sample of public opinions is gathered during the planning process so that plans are not catered towards a small but politically active few. Public outreach methods should be predicated on the notion that planning is for all citizens and therefore all citizens' input is worthy of consideration. Sustainable communities are those with a citizenry that trusts the local government because they are actively involved in the decision making processes.

	Benchmark	Self-Assessment	Description
18.1	Does the local government use various public engagement strategies throughout the planning process (e.g. mail survey/notification, social media, pamphlets)?		It is important to remember that not everyone can access an online survey and not everyone uses social media. Local governments can improve the representativeness of engagement efforts by gathering input in a variety of ways.
18.2	Are there public meetings that are hosted at times that allow people who work outside of normal business hours to attend?		Besides the technology gap, it is also important to remember that many people cannot attend evening meetings because of their work, school or personal obligations schedule. Communities can deal with this by hosting meetings at other times of the day.
18.3	Does the municipality seek input from a representative sample of socio-economic, race and age groups?		This is another aspect of making sure that the community's planning and data gathering is representative of the community and that a wide range of perspectives are informing the decision making process.
18.4	Does the local government provide a summary of results to the public whenever input is gathered?		Providing citizens with the results of public surveys or discussions on planning -related topics helps to show the degree to which public sentiment affects governmental decisions.
18.5	Does the local government inform the public on how their input was used for a particular plan or initiative?		Transparency is key to the public's trust in the local government. People should know how their input is being used in the planning process to give validity to the time and effort they are taking to provide their opinions.

Y—Yes **I**—Yes, but should improve **N**—No **?**—Don't know **NA**—Not applicable

Social equity

Many of the benchmarks in this guide directly and indirectly relate to social equity. However, it is also important that plans incorporate specific language indicating a community goal to promote equitable outcomes during the decision making process. In order for planning efforts to yield equitable results, they need to have an overarching aim to be equitable in the first place. Equity in this context means that every individual has the ability to meaningfully participate in the processes that lead to resource allocation.

	Benchmark	Self-Assessment	Description
19.1	Does the master plan address social equity?		While transportation, land use, recreation and food security all indirectly relate to social equity, the community can specifically include social equity into the plan to guide its objectives and implementation strategies.
19.2	Is social equity integrated into plans for capital improvements?		Decisions on capital improvements and where resources are targeted should be well-informed by a representative sample of the public.
19.3	Do economic development plans or goals address social equity?		Economic development, while a vital component to a community's sustainability, can often be accompanied by social detriments. These can be offset to a degree by including equity as a guiding principle at the beginning of the planning process.
19.4	Are residential developments incentivized or regulated to address social equity concerns (e.g. a community benefits agreement)?		A community benefits agreement is a document signed by community-based organizations and real estate developers where the community organization provides political support for the development and the developer provides a benefit such as preserved public space, updated infrastructure or reduced rate housing. The local government can also adopt similar policies directed towards outcomes that benefit various community voices.
19.5	Does the community have representative voter turnout rates from oft-neglected populations (low-income, minorities, physically disabled, elderly, etc.)?		Similar to planning processes, elections should also aim to gather a representative sample of public sentiment. Communities with low turnout from a particular demographic should seek to identify and remove any potential barriers that this group(s) may be experiencing.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Volunteer opportunities

Sustainable communities can rely on an active volunteer base to accomplish many community projects, events and initiatives. Active volunteer bases indicate residents with a vested interest in their community's betterment. Communities that are socially sustainable in this way are also more economically and environmentally resilient. Increased reciprocity exchanges and bonds of solidarity, can reduce the need for governmental relief programs, thereby reducing municipal expenditures overall. Additionally, community support mechanisms logically mean that municipal budgets will incur less strain in the event of a natural disaster as residents and grassroots organizations take on part of the responsibility for helping people before, during and after a crisis.

	Benchmark	Self-Assessment	Description
20.1	Does the municipality provide support to neighborhood organizations, friends-of groups and other volunteer bases?		Volunteer-based organizations can be effective at achieving community projects that touch on certain interests. The municipality can provide support by maintaining an active relationship with these groups and facilitating collaborative efforts.
20.2	Are there opportunities for residents to engage in meaningful volunteer activities?		Connecting residents with meaningful volunteer activities is an important step towards creating a strong social fabric within the community.
20.3	Are volunteer opportunities presented publicly through a variety of mediums?		The municipality can help volunteer-based organizations such as non-profits, recruit members by listing information for these groups on the municipal website or in a widely circulated publication.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Aging in place

Communities around the US are seeing their percent of the population 65+ increase as more people in the Baby Boom generation (those born from 1946 to 1964) reach retirement age. The growing cohort of elderly individuals creates a need for built environment changes that address the social and physical needs of this aging population. Sustainable communities provide amenities for all age groups, meaning they are places where people can comfortably spend their entire lives.

	Benchmark	Self-Assessment	Description
21.1	Have local officials facilitated conversations with the population age 65+ to discuss barriers to and opportunities for comfortable living in the municipality?		Municipal officials should work to make sure that the population age 65+ is involved in public decision making processes. Their input could shed light on opportunities for built environment improvements that promote aging in place.
21.2	Does the community have events and programming for the population age 65 and older?		The community can strike a balance between events that cater to all age groups and those that would likely attract an older demographic. Events and programming should consider the interests and physical abilities of their target audience.
21.3	Can the population age 65 years and older meet its needs without the use of a personal vehicle?		Options to complete this may include setting aside housing closer to amenities, improving the community's walkability through infrastructure improvements or making sure that there are public transportation options available.
21.4	Does the zoning ordinance allow for secondary dwelling units in certain areas?		The rapid growth of the population aged 65+ calls for innovative housing solutions beyond retirement homes. Some options for secondary dwelling units include an apartment over the garage, a tiny house in the backyard or a basement apartment. The municipality can regulate these so that they do not create conflict with the aesthetic qualities of the neighborhood.
21.5	Does the municipality incentivize or require that a percentage of the housing stock be adapted for senior living?		Similar to housing for low-income residents, some communities may find it beneficial to incentivize or regulate housing for the population aged 65+ near local amenities such as grocery stores, retail, pharmacies and parks. These housing options could also contain ADA-compliant features such as widened doors and hallways, lower counters and railings.
21.6	Do public and private development projects incorporate Americans with Disabilities Act (ADA) compliant features?		ADA-compliant features should be incorporated into zoning and the site plan review process.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Children and the planning process

Stated previously, sustainable communities are places for everyone to live, work and play. Children are a critical part of the social fabric that defines a place and should be a part of the planning process. Sustainable communities facilitate programming and spaces for youth recreation, plan safe environments for children to play and travel to school and make an effort to include young people in community decision making.

	Benchmark	Self-Assessment	Description
22.1	Are residents under the age of 18 included in the planning process?		The community may accomplish this by holding youth charrettes, hosting workshops at local schools or by encouraging public meeting participants to bring their children with them. This is a key contributor to developing civically engaged citizens at a young age.
22.2	Are there public spaces for youth to recreate?		Communities should provide safe, accessible and engaging public spaces for youth under the age of 18 to recreate and socialize.
22.3	Does the municipality encourage safe non-motorized transportation to schools and parks through built environment improvements and programming?		Sidewalk connections, marked crosswalks, bike lanes, signage and programming can all help to encourage children to walk or bike to school and parks safely.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Design standards

Sustainable communities more easily attract residents, visitors and businesses because they are aesthetically appealing. Municipal design standards go a long way in creating a built environment that people choose to take part in. All of the benchmarks in this section are aimed at creating pedestrian-oriented and interesting places. While these standards may not be appropriate for all areas of a municipality, they are especially well-suited for commercial corridors, downtowns or redevelopment sites.

	Benchmark	Self-Assessment	Description
23.1	Does the municipality include design standards in the zoning ordinance related to facades, materials used and other structural features?		Part of creating a unique sense of place is guiding the built environment's development to create or preserve a local character. This is often administered through the use of a Form-Based Code.
23.2	Are new developments and redevelopments in appropriate zoning districts incentivized or regulated to provide open space to the public?		The zoning ordinance can be useful in ensuring that developments do not remove an undue amount of open space that could be enjoyed by the public. Preserving open space (possibly by providing a density bonus) allows the opportunity to develop community gardens or social spaces, increase tree canopy, reduce the heat island effect or provide for natural habitat/vegetation, amongst other community benefits.
23.3	Are developers incentivized or regulated to improve nearby infrastructure such as sidewalks and landscaping?		This benchmark is similar to 19.4. Community organizations can enter into Community Benefits Agreements or the municipality can provide density bonuses as an incentive to improve public spaces. These discussions should take place early in the development process.
23.4	Are mixed land uses allowed in the current zoning ordinance?		Mixed uses help to keep spaces alive with activity. This can be beneficial for businesses and residents alike, as active spaces provide more patrons to businesses, more eyes on the street to deter crime and set the stage for spontaneous social interactions.
23.5	Does the municipality have a sign ordinance?		Sign ordinances are instrumental in improving the visual quality of commercial and downtown areas. A sign ordinance can help to reduce visual clutter and can help protect, establish or further promote community identity.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

	Benchmark	Self-Assessment	Description
23.6	Are public spaces interesting, comfortable and well-connected?		Public spaces should engage pedestrians through aesthetically interesting designs. They should also feature various seating options, shade and a connected streetscape.
23.7	Does the zoning ordinance promote development that matches the local character?		The local character can be identified during the master planning process. Residents can provide input on whether the municipality should have an identity that reflects the past, looks towards the future, remains rural, attracts a younger demographic, etc.
23.8	Does the community have one or more spaces where people spontaneously gather?		Well-designed spaces attract people of all ages to spontaneously gather. These may be places of passive leisure, recreation or education.
23.9	Do design standards for the community consider both automobile and pedestrian needs?		Streetscape designs and new developments should be attentive to the needs of vehicles as well as pedestrians. Forgetting one or the other can lead to a dysfunctional space.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Coastal
Sustainability

Data gathering and mapping

Coastal communities can work towards implementing sustainable policies and best practices once they understand the risks that certain areas and structures are under. Data and mapping that is well-organized and easily presented can help to educate community residents on the importance of planning ahead for potential risks. This is a first step in planning for flood damages to residences, businesses, natural ecosystems and critical public facilities. Planning ahead can help to prevent damages or reduce the negative effects that these damages can cause.

	Benchmark	Self-Assessment	Description
24.1	Does the community use historical mapping of lake levels and lake level projections to inform land use decisions?		The Great Lakes fluctuate in a decadal pattern with an average reduction in shoreline at around 1 foot per year. This fluctuation wherein buildable beach is present for some time and then gone later contributes to development in high-risk areas. Historical data, projections and responsive zoning can help reduce risky development.
24.2	If adjacent to a Great Lake, has the community mapped shoreline erosion using data provide through the Great Lakes Research Center, NOAA and the State of Michigan?		Use the following link to view shoreline data for Michigan's coasts: https://portal1-geo.sabu.mtu.edu/mtuarcgis/apps/webappviewer/index.html?id=d758800bb18e460ab39aa66631051156
24.3	Are flood risk maps and related data updated every five years?		It is important that data on flood risks remain updated so that community planning mitigation efforts are based on accurate information.
24.4	Has the community benchmarked its climate risks and vulnerability to natural disasters so that it can measure improvements over time?		Measurable benchmarks may include: property damages, the number of people and/or structures at risk and public spending on disaster recovery.
24.5	Are maps (or other spatial tools like GIS) used to spatially define the vulnerability of roads, public buildings (schools, hospitals, fire stations, etc.) and public services (wastewater treatment, water distribution, power transmissions, etc.) to coastal hazards?		Using Digital Elevation Models, shoreline erosion data, lake level data and other key sources, communities can assess the risk to their most important assets. Decision makers can use these analyses to reduce hazard risks and improve sustainability.
24.6	Has the extent of past coastal hazards been identified and mapped based on historical records, existing plans and reports or scientific and local knowledge?		Understanding past events can help inform future plans. The community should try to gather information from as many sources as possible in order to create a clearer picture of what risks the community may be facing.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Data gathering and mapping

	Benchmark	Self-Assessment	Description
24.7	Do any plans, and especially the Hazard Mitigation Plan, describe the damage and cost of previous storms, floods or erosion?		Dollar amounts for past damages can help community members decide how risk averse they want to be going forward.
24.8	Does the community track repetitive loss properties within the National Flood Insurance Program?		A repetitive loss property is any insurable building for which two or more claims of more than $1,000 were paid by the National Flood Insurance Program (NFIP) within any rolling ten-year period, since 1978.
24.9	Are maps or spatial data used to predict the probable extent of future coastal hazards?		Similar to benchmark 24.7, measuring the probability of different coastal scenarios (100-year storm versus 500-year storm, for example) can help community members and decision makers decide to what extent they want to avert coastal risks.
24.10	Do community plans estimate the potential financial losses that may result from lake-level rise?		Along with understanding the sites most at risk of taking on damages, the community also benefits from knowing the potential costs of future damages so they can plan accordingly.
24.11	Does the municipality share the findings from risk and vulnerability assessments with planning staff, public works officials, transportation planners, emergency management, elected officials and the general public?		It is important for each municipal department to be on the same page, especially regarding hazard mitigation efforts. This can help increase consensus and buy-in around decision-making.
24.12	Has the community conducted a buildout analysis using current zoning to better understand the potential for development in at-risk areas?		While a full buildout is rare, communities should be aware of the potential for increased development to occur in risk prone areas. This may help inform zoning changes to improve resilience.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Zoning regulations

Municipal governments are responsible for protecting public health, safety and natural resources now and for generations to come. Zoning regulations are a useful tool for preserving natural assets and siting developments in low-risk areas. The local government should engage the community to explain the potential risks that natural hazards pose to community assets when development is not regulated. The master planning process is an ideal time for this engagement to occur.

	Benchmark	Self-Assessment	Description
25.1	Does the municipality use zoning regulations to reduce damages to the built environment?		Zoning regulations can work to prevent development in areas at serious risk of flooding, which can help reduce the fiscal damage that a natural disaster may cause.
25.2	Is the zoning ordinance reviewed periodically to ensure that it is effectively reducing the risk of flood damages?		If the same developed areas are repeatedly experiencing flooding, it may be time to seek regulatory options to reduce the financial burden that rebuilding these structures is having.
25.3	Does the master plan or zoning ordinance mention vegetation requirements for properties and developments near or within coastal areas?		Vegetation plays an important role in reducing runoff, preventing flooding and maintaining natural landscapes.
25.4	Does the master plan or local ordinances prevent the removal of native vegetation around houses near dunes and beaches?		Dunes and beaches are at a greater risk of deterioration when vegetation is removed during development. Planning documents and municipal ordinances can help protect these natural features.
25.5	Does the zoning ordinance work to minimize the amount of impervious surfaces in the entire community?		Impervious surfaces contribute to runoff, dune and beach loss and can be harmful to the natural and built environments. Pervious surfaces and natural landscaping should be utilized as much as possible.
25.6	Has the municipality established a buffer area around flood zones to restrict or guide development in these areas?		This is an alternative to benchmark 25.1. When it is unfeasible to restrict development in a flood-prone area (i.e. there is already development there) the municipality may look to guide redevelopments and new developments to improve that area's ability to withstand natural hazards.

Y–Yes | **I**—Yes, but should improve | **N**—No | **?**—Don't know | **NA**—Not applicable

	Benchmark	Self-Assessment	Description
25.7	Does the community have local ordinances to protect dunes, bluffs, eroding cliffs, wetlands and/or beaches from development disturbance?		These natural features are lost forever if not protected. They play an important role in economic, social and environmental sustainability.
25.8	Are frequently flooded areas zoned or planned for open space protection and/or recreation use to prevent risky developments?		Areas that are repeatedly flooded are best kept in their natural state. Maintained as open space or recreation areas, they still contribute to the overall quality of the community.
25.9	Does the community regulate the elevation of residential, non-residential and public buildings or infrastructure to be above the base flood elevation within the 100-year floodplain?		While elevating structures above the base flood elevation does not remove all risk to the property, it does reduce the chance that the structure will be damaged by a coastal hazard.
25.10	Does the community require the flood-proofing of strufctures within the 100-year floodplain?		Flood proofing refers to structural and non-structural changes, or adjustments made in the building that reduces or prevents flood damage to the structure and/or its contents. The two widely recognized types of flood-proofing are wet flood-proofing and dry flood-proofing.
25.11	Does the community prevent the rebuilding of structures destroyed by coastal hazards? (Where rebuilding is allowed, are additional design elements required to reduce the risk of future damages?)		By preventing or regulating the rebuilding of damaged structures from coastal hazards, the municipality is reducing the health and financial risks posed to the property owner, as well as the potential costs incurred by the public.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Structural design near dunes and bluffs

Traditionally, coastal homes are highly sought after (for their location and views) and for municipalities (high demand locations provide higher property tax returns). However, in recent decades some communities are finding that the social and economic costs that high-risk developments pose can often outweigh the benefits. Certain areas may need to be regulated to prevent development altogether. However, when this is impossible or undesirable, the local government can guide development to increase the sustainability of both the natural and built environments. These are best practices for all water-adjacent structures, and especially for those on dunes.

	Benchmark	Self-Assessment	Description
26.1	Are coastal homes regulated to have a smaller footprint?		Home designs with additional floors are able to provide the same amount of square footage to the homeowner but with less of a footprint on the natural environment. This also helps to reduce the amount of impervious surfaces.
26.2	Are homes built on dunes designed with innovation that promotes multiple uses for rooms in order to take up less space?		This would likely require incentives or an educational component rather than a regulatory power. Good design can work to reduce a building's footprint.
26.3	Are homes sited on dunes designed to avoid a concentrated dispersion of rainwater?		Homes in critical areas should be regulated to prevent water from dispersing concentratedly, which causes damage to the natural environment, especially on dunes.
26.4	Are homes on dunes encouraged to share driveways in order to avoid the amount of impervious surfaces?		Driveways typically use impervious materials so a reduction in their presence in critical areas can be an important step in sustaining dune and beach quality.
26.5	Are homes on dunes allowed to use pervious materials for driveways?		The municipality can help reduce runoff and dune destruction by allowing pervious materials to be used for driveways.

Y—Yes **I**—Yes, but should improve **N**—No **?**—Don't know **NA**—Not applicable

House siting

While structural design benchmarks are important factors in sustaining natural ecosystems, house siting can also contribute to the well-being of the natural environment, especially for dunes. Municipalities can work prudently to protect their dunes, which are important aspects of the environmental and economic sustainability of a place, by using regulatory controls to prevent unduly harmful development patterns.

	Benchmark	Self-Assessment	Description
27.1	Are homes on dunes and beaches regulated or incentivized to be placed at the point of arrival in order to reduce the damage created by driveways and parking?		Previously mentioned, driveways and other impervious surfaces should be avoided to the extent possible, especially near dunes and beaches. Zoning regulations and incentives can promote house siting that reduces the need for more impervious driveway material.
27.2	Are coastal homes designed to work with natural features and conditions of the site?		Developments in critical ecosystems should not place an undue burden on said ecosystem's sustainability. Developments should alter the site as little as possible.
27.3	Are homes on dunes prevented from building close to the crest of the dune?		Development on the crest of the dune can cause damage to the dune itself while also placing the structure at risk of damage or loss.
27.4	Are homes on dunes encouraged to be oriented on the long axis of the house across the slope to minimize the variation in elevation within the footprint of the structure?		Zoning regulations, incentives or education can be used by the municipality to encourage more sustainable site plans.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Critical facilities and infrastructure

Sustainable communities can experience a natural disaster and continue to provide public services to residents before, during and immediately after the emergency. They are able to accomplish this by siting critical facilities such as police stations, fire stations, hospitals and important records in locations protected from damages in the event of a natural disaster.

	Benchmark	Self-Assessment	Description
28.1	When new critical facilities are developed, are they sited in locations that are protected from possible flooding?		Critical facilities should be located outside of flood zones whenever possible. This is where data gathering and mapping play an important role.
28.2	If critical facilities are located in areas at risk of flooding, are they outfitted with additional structural protective features?		Critical facilities must be able to function in the event of a natural disaster. This means ensuring that power, water, waste disposal, communications, and occasionally natural gas and steam are protected from potential damages.
28.3	Does the community have an emergency plan in place to continue providing services during an emergency?		In the event that a critical facility(ies) cannot function during or after a natural disaster, the community should have a plan in place to continue providing public services by other means.
28.4	Does the community have a plan for upgrading/ repairing critical transportation infrastructure?		Transportation infrastructure is vitally important to the community's economic and social sustainability. Proper maintenance and hazard planning can help ensure that this infrastructure remains intact.
28.5	When critical transportation infrastructure is repaired are best practices considered to reduce the risk of future flood damages?		This may include elevating roads above predicted flood levels, moving roads landward as erosion occurs and/or incorporating future flooding and lake-level rise into culvert size and placement.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

	Benchmark	Self-Assessment	Description
28.6	When upgrading **existing** community infrastructure, does the community consider the impact of coastal hazards?		When the community updates its infrastructure it is important to consider environmental factors such as coastal erosion and/or shoreline change, lake-level rise, coastal flooding and storm surge.
28.7	When planning **new** community infrastructure, does the community consider the impact of coastal hazards?		See Benchmark 28.6

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Disaster preparedness

Historical coastline data and projections can help municipalities implement scenario-based plans. For instance, flood risks can be predicted based on lucky, expected or worst-case scenarios. Each of these scenarios can be used to see how many structures or community assets may be damaged in the event of a natural disaster. This can help the community prioritize its hazard mitigation efforts.

	Benchmark	Self-Assessment	Description
29.1	Are there public facilities available for residents to receive supplies or shelter in the event of a disaster?		In the event that a natural disaster affects the ability of residents to remain in their homes, access supplies or seek health assistance, the community should have designated facilities to support the affected public.
29.2	Do residents know where emergency relief facilities are located within the community?		Relief facilities are only as helpful as people's ability to access them. Educating the public before the occurrence of a natural disaster can help mitigate health risks.
29.3	Are there emergency relief facilities sited close to the community's vulnerable populations?		People who are low-income, elderly, disabled, living alone or spatially isolated are the most susceptible to the negative effects of a disaster. Their vulnerability to natural hazards can be reduced by siting resources close to these residences.
29.4	Has the community used scenario planning strategies to identify areas most at risk during a natural disaster?		Scenario planning helps the community to decide the extent to which it will make plans and changes to mitigate its risk of flood damages. Scenario planning is when the lucky, expected or worst-case scenario guides mitigation efforts.
29.5	Has the community adopted a Hazard Mitigation Plan, an Emergency Preparedness Plan or a plan similar in nature?		Plans can help to outline goals, objectives, action steps and responsibility for implementation. They can also give an idea of when and where budget expenditures should be allocated before, during and after flood damages have occurred.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Disaster preparedness

	Benchmark	Self-Assessment	Description
29.6	Are first responders prepared to address a natural disaster within the community?		The municipality should work closely with the police, fire department and ambulatory services to identify gaps and opportunities to response efforts in the event of a community emergency.
29.7	Are professional planners, engineers and/or certified floodplain managers involved in the formation of the capital improvements plan?		Experts in their given field can provide plan insights that may otherwise be overlooked.
29.8	Does your community have a communication system to reach the public before, during and after a disaster event?		Being able to communicate safety procedures and updates to community members is an important factor when recovering from a major storm event.
29.9	Are community members engaged through education programs about mitigation options?		Community members should understand why certain zoning regulations, local programs and public works projects exist. This can help promote public support and may encourage community members to implement mitigation features on their property.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Bluff and ravine protection

Bluffs and ravines both play important roles in the environmental, economic and social sustainability of a place. Bluffs are a tourism draw for their aesthetic qualities and provide a natural barrier for coastal homes from flooding. Ravines are important to sustain in order to reduce the risk of flooding to nearby properties. There are certain tools and best practices that municipalities can implement to make sure that these natural features are not damaged, or damaged to a lesser extent, by development.

	Benchmark	Self-Assessment	Description
30.1	Does the master plan mention bluff and ravine protection?		Zoning regulations and other policy initiatives need to be backed up by an adopted community plan. The master planning process also helps to educate the public on the importance of protecting these natural features and how this can be accomplished by the private landowner.
30.2	Does the zoning ordinance require setbacks from bluffs and ravines for new structures, redeveloped structures or new impervious structures?		Setbacks from bluffs can help to protect the bluff itself from eroding faster than its natural tendencies and can also prevent homes from being sited in a risky location. Setbacks from ravines can help reduce erosion and the potential for flood damage near bodies of water.
30.3	Has the community identified properties near bluffs and ravines at risk of damage or loss?		Bluffs and ravines naturally erode, though developments and climate change can make these processes proceed at a faster rate. The community should work preemptively to reduce the likelihood of property damage or injuries to residents.
30.4	Does the community map bluffs and ravines in relation to fluctuating water levels?		Mapping bluffs and ravines in relation to Great Lakes changing water levels can help to identify structures at risk of damage. Not all bluffs and ravines are susceptible to changes in lake levels and some are projected to change at greater rates.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

	Benchmark	Self-Assessment	Description
30.5	Does the community prevent the use of all-terrain vehicles (ATVs) on beaches, sand ridges or dunes in order to protect native vegetation from destruction?		ATV's can damage the native vegetation that is vital to the sustainability of coastal ecosystems.
30.6	Does the municipality have a program that works to help stabilize dunes? This can include replanting native beach grass and utilizing slot-type snow fences.		The municipality on its own, or in collaboration with local organizations and volunteers, can actively place natural and built features that act to reduce dune erosion.
30.7	Are steps, bridges and ramps mounted on posts to traverse steep or unstable slopes?		These infrastructure components can help to prevent erosive damages to dunes.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Professional training

Communities hoping to implement the best practices described in this assessment tool are better positioned to do so when they have a staff that is highly trained in their respective profession. While this may include a formal education in planning, civil engineering or GIS, it is also important that current staff engage in ongoing education as new problems and best practices emerge. Municipal employees may take part in professional organizations, trainings offered by universities and should have certifications that demonstrate a thorough knowledge of topic matter.

	Benchmark	Self-Assessment	Description
31.1	Does the community have staff trained in mapping or monitoring potential hazards such as coastal erosion and/or shoreline change, lake-level rise, coastal flooding and/or storm surge?		See the Benchmarks for sustainability topic 24 on the importance of accumulating data related to coastal hazards and monitoring these trends over time.
31.2	Does the community have a certified floodplain manager (CFM) on staff?		The Association of State Floodplain Managers has established a national program for professional certification of floodplain managers. By taking part in the program, local, state, federal and private-sector floodplain managers are encouraged to take part in continuing education and professional development.
31.3	Does the community have a floodplain manager or planner who participate in professional organizations or ongoing education?		In addition to the Association of State Floodplain Managers (ASFPM), other relevant professional organizations include the American Planning Association (APA), American Society of Civil Engineers (ASCE) and the American Public Works Association.
31.4	Does the community have technical or computer mapping capabilities?		There are various GIS software programs. Communities should invest in mapping capabilities to measure coastal data, in addition to other important information such as demographics and land use.
31.5	Are municipal staff encouraged to attend professional conferences and/or trainings from universities and associations?		Conferences and trainings can help introduce staff to emerging concepts related to coastal sustainability. These events also foster information exchanges between professionals.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

	Benchmark	Self-Assessment	Description
31.6	Does the municipality hire certified building inspectors?		For developments that require flood-proofing measures or are subject to other zoning regulations related to coastal resilience, the municipality must have staff to enforce the code if it is to be successfully implemented.
31.7	Does the municipality staff an adequate number of people to enforce building codes?		See Benchmark 31.6
31.8	Does the community have planning commissioners with formal training in planning?		Many planning commissioners across the U.S. are civically engaged members of the community, but often lack formal training in planning. New planning commissioners without a planning background should be encouraged to take part in trainings or certification courses. The American Citizen Planner program is one example of these.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Hazard planning

One of the most important factors in implementing sustainable practices is to ensure that the community identifies goals, objectives and action steps in its plans. This is important for multiple reasons. First, planning processes are intended to engage the public to gather input and build consensus. Bother of these planning ingredients help make implementation more likely to occur. Second, the community needs to have a clear direction for how risk averse it wants to be. Plans help to clearly delineate what the community is willing to implement and less willing to implement as it becomes more sustainable. Plans should consider short and long-term risks and, in doing so, should identify short and long-term projects towards increased sustainability.

	Benchmark	Self-Assessment	Description
32.1	Does the community participate in the FEMA Community Rating System?		According to FEMA, "The National Flood Insurance Program (NFIP) Community Rating System (CRS) was implemented in 1990 as a voluntary program for recognizing and encouraging community floodplain management activities exceeding the minimum NFIP standards. Any community in full compliance with the minimum NFIP floodplain management requirements may apply to join the CRS. "
32.2	Does the community have a current FEMA-approved All-Hazard Mitigation Plan?		According to FEMA, "FEMA requires state, tribal, territorial and local governments to develop and adopt hazard mitigation plans as a condition for receiving certain types of non-emergency disaster assistance, including funding for mitigation projects. Jurisdictions must update their hazard mitigation plans and re-submit them for FEMA approval every five years to maintain eligibility."
32.3	Does the community's master plan have a coastal planning element or does the land use plan make recommendations to reduce coastal hazard vulnerability through planning?		A comprehensive snapshot of the community's past, present and future, the master plan guides the overall direction of areas such as transportation, infrastructure, housing and the environment. It is critical that coastal resilience appear in the plan.
32.4	Does the community have an adopted floodplain management plan?		Building off of the master plan, the floodplain management plan allows for greater detail and action step planning for managing hazardous areas.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Hazard planning

	Benchmark	Self-Assessment	Description
32.5	Do planning horizons consider potential long-term coastal hazards such as lake-level rise, coastal erosion and increased storm activity and severity?		While the master plan and other local plans often consider a 20-30 year perspective for the future, many coastal-related trends require a wider timeframe. It is important to remember that Great Lakes coastal dynamics and changes in the climate are long-term trends and should be planned for with this understanding.
32.6	Does the water and sewer plan include recommendations for relocation, abandonment or protection of infrastructure at risk to coastal flooding or other coastal hazards?		Soil erosion, coastal flooding and lake level fluctuations can expose or cause damage to infrastructure. This poses a risk to public health and can subject the municipality to expenses to repair damaged systems.
32.7	Does the community have a timeline or strategic plan for the relocation, abandonment or protection of buildings in areas at risk of flooding?		The community can get ahead of costly damages when it plans for or anticipates the risks associated with flood-prone sites.
32.8	Have Memorandums of Understanding (MOUs) or Memorandums of Agreement (MOAs) been signed with neighboring communities to help one another during before, during and/or after a disaster event?		It is important to remember that disaster events do not stop at municipal boundaries. Local units of government must recognize the importance of working with neighboring jurisdictions to support regional sustainability.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Environmental

Sustainability

Efficient energy use

Sustainable communities are able to reduce their resource consumption while still meeting local demands. Improving a community's energy and water consumption involves a multi-faceted approach that likely cannot be completed by the municipal government alone. Lessening consumption involves everything from building construction processes to local residents' behaviors. Fortunately, this category is one of the easiest to measure and can be benchmarked periodically to see if the locality's efforts are leading to improvements.

	Benchmark	Self-Assessment	Description
33.1	Does the municipality encourage new developments and redevelopments to become certified as energy-efficient? (e.g. LEED)		Certifying agencies can help guide developments to be more energy efficient by evaluating factors such as: building orientation, insulation, window materials, natural lighting, vegetation, HVAC, plumbing, light systems and electrical. While a certification often acts as an incentive, municipalities can also require energy-efficient features in the zoning ordinance.
33.2	Does the master plan contain goals and objectives related to improving energy efficiency community-wide?		A key component of guiding the community's improved energy-efficiency is making sure that it is included in local plans that the municipal government can reference during its decision making processes.
33.3	Does the zoning ordinance allow for renewable energy sources such as wind and solar?		The municipality can encourage renewable energy sources by removing barriers to their installation from the zoning ordinance. This may not be appropriate in all zoning districts so it is important for the municipality to be strategic.
33.4	Can community members purchase renewable energy credits? If yes, are renewable energy credit purchases increasing over time?		Renewable Energy Credits are tradable energy commodities that give municipalities, private citizens and businesses the opportunity to ensure that part, if not all, of their energy is coming from a renewable energy source.
33.5	Do developments, both public and private, involve project commissioning?		Project commissioning ensures that all of a building's systems are installed in a manner that maximizes the building's energy efficiency. Community's may want to provide incentives to developers that use commissioning.
33.6	Is the public educated on how it can help to improve energy efficiency? Is this benchmarked?		Community energy efficiency can start at home. The local government, a non-profit or a volunteer organization can provide education on how homeowners can reduce their energy consumption by, for example, driving less, installing rain barrels and improving insulation.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Stormwater management

Managing stormwater is essential to protecting homes, businesses, community assets and infrastructure from being damaged by floods. There are two components to stormwater management in this self-assessment tool. The first involves proactive municipal policies to guide development away from areas that are at a higher risk of flooding (25.1, 25.6 and 28.1). The second, outlined in this section, involves management strategies for existing developments and infrastructure to reduce the potential damages from a flood event.

	Benchmark	Self-Assessment	Description
34.1	Does the master plan address rainwater-harvesting and stormwater-control as part of the site plan review process?		The master plan should address the need for property owners to manage rainwater on their land. This can involve regulations or incentives for tools such as rain barrels, rain gardens, proper dispersion of rainwater and a professional review of any alterations to the natural landscape.
34.2	Does the master plan address the need to accommodate stormwater-control elements, even in certain instances where these elements go against the specified design standards?		Sometimes aesthetic design standards are not conducive to proper stormwater management. The municipality should work with property owners to make reasonable exceptions to certain design standards when stormwater management is in question.
34.3	Are the municipal staff members involved in developing plans educated on green infrastructure practices?		A key part of seeing green infrastructure become implemented in the built environment is having municipal staff who are well-versed in best practices.
34.4	Does the community have a rain barrel or rain garden program?		Rain barrels and rain gardens are private citizen-managed options to help prevent the ground from becoming oversaturated and reduce the amount of runoff entering natural water systems.
34.5	Are pervious surfaces regulated or incentivized to be part of new developments or redevelopments?		Communities with an excessive amount of impervious surfaces are at a higher risk of flooding than similar places that incorporate materials that allow water to disperse evenly into the ground and sewers.
34.6	Does the master plan mention adding tree canopy to reduce runoff and the risk of flooding?		Tree canopy plays a key role in reducing damages causes by stormwater. Regulations, incentives and programming can help to improve the percent of the community covered by trees.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Pollution/waste prevention

Pollution and waste prevention, well-known components of environmental sustainability, also have implications for the economic and social sustainability of a community. Forests, lakes, rivers and other natural features that are well-maintained and undamaged can be a positive local economic driver. Most people want to live in places that exhibit quality natural systems and set aside land for passive recreation uses. This economic relationship with the environment has its base in the social benefits of nature. Human exposure to nature has been associated with positive cognitive, psychological and social benefits. For these reason, pollution and waste prevention are a key contributor to overall community sustainability.

	Benchmark	Self-Assessment	Description
35.1	Is solid waste management and reduction mentioned in community plans or local ordinances?		There are many ways that a community can reduce the amount of solid waste it contributes to landfills. The first step in identifying these reduction options is laying out goals and objectives in the master plan related to solid waste.
35.2	Does the code of ordinances regulate ambient noise and light?		Communities can promote a more desirable living environment by regulating noises emitted by motor vehicles, railroads, events and residents in certain areas and at certain times. This is an important aspect of balancing human activity with natural systems. The municipality may also regulate light fixtures to point downwards to prevent further light pollution.
35.3	Does the community monitor waste infrastructure and programming regularly to ensure that pollution is not entering natural systems or causing health concerns?		The systems used to remove waste from the community including sewer systems, trash removal trucks, landfills, wastewater treatment plants, septic tanks and others should have a review process in place to ensure efficiency.
35.4	Does the community make it easy for residents to recycle materials?		Community's can encourage recycling by placing bins in public areas, educating residents on where they can drop off recyclable materials and by providing services to pick up recycling.
35.5	Are residents well-educated on recycling programs and how to recycle?		One of the main problems municipalities encounter when it comes to the cost of recycling is that many residents do not know how to properly recycle materials to avoid contamination of recyclable objects. Education and public outreach is key to improving the efficiency of local recycling programs.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

	Benchmark	Self-Assessment	Description
35.6	Does the master plan or code of ordinances mention the prevention of runoff into natural systems?		There are various ways municipalities can work alone or collaboratively to regulate, incentivize, provide education or implement programming to better protect natural systems from runoff. The master planning process can help to identify the most feasible approaches.
35.7	Are local businesses incentivized or regulated to reduce the amount of solid waste entering landfills?		The municipality can work with local businesses to either create less solid waste or redirect solid waste to a closed-loop system wherein materials are reused.
35.8	Is the community working to develop programs and/or facilities designed to keep building materials in a closed-loop system?		According to the Environmental Protection Agency (EPA), "569 million tons of Construction and Demolition debris were generated in the United States in 2017, which is more than twice the amount of generated municipal solid waste". Design standards that consider the entire life cycle of the building should be implemented to reduce the amount of solid waste created (i.e. Domicology). The community can also use creative strategies to reuse building materials.
35.9	Does the community have restrictions on the use of fertilizers for properties near water, especially wetlands?		Fertilizers that enter a watershed can be detrimental to the ecosystem by causing algal blooms, hypoxia and declines in wildlife habitat.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Biodiversity and invasive species

Maintaining the biodiversity of the local ecosystem is crucial to sustaining that ecosystem's environmental, economic and social benefits (see Pollution/Waste Prevention description for more detail on these benefits). Ecosystems are placed at a higher risk of not being able to sustain themselves when their biodiversity is reduced, especially when an invasive species is introduced. Communities can implement measurable action programs to improve the biodiversity of the community's natural habitats.

	Benchmark	Self-Assessment	Description
36.1	Has the community identified, inventoried and prioritized invasive species prevention and removal?		The details of how the municipality will accomplish invasive species controls should be presented in a municipal plan.
36.2	Are residents in the community informed and educated on invasive species prevention?		Local officials cannot be everywhere at once. Residents and businesses can play an important role in identifying, eliminating and preventing invasive species.
36.3	Does the community have a program in place to help with the prevention and elimination of invasive species?		A formal program can make it easier to organize efforts aimed at sustaining biodiversity by addressing the risks that invasive species pose.
36.4	Has the community identified threatened or endangered species in the local ecosystem?		The loss of certain species indicates a threat to the overall well-being of an ecosystem. The community should work proactively to identify at-risk species in order to develop action steps to address the issue.
36.5	Is the community working to maintain and grow the populations of threatened or endangered species?		Local programs and resources can be targeted towards public education and actions to help endangered species reach an optimal population size.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Green features

Green features are defined as built environment elements designed to work in collaboration with nature. These features may support stormwater management, climate adaptation, lower heat stress, habitat creation, more biodiversity, food production, better air quality, renewable energy, clean water and healthy soils. Green features can improve the environmental, economic and social sustainability of a community by addressing environmental concerns while also creating quality places for people.

	Benchmark	Self-Assessment	Description
37.1	Does the master plan mention green features for new development projects and redevelopment?		For green features to gain community support and find their way into the development process, they must first be described in the municipality's planning documents.
37.2	Does the municipality incorporate green features into public spaces?		Mentioned previously, green infrastructure can serve a variety of purposes. Some examples include green roofs that reduce the heat island effect and provide a habitat, rain gardens that reduce runoff and permeable paver parking lots.
37.3	Are opportunities for green features for new developments sought early in the development process?		Municipalities and community organizations can work with developers to incorporate green infrastructure into development projects. Successful negotiations are more likely to occur when these features are sought early in the project's process.
37.4	Has green infrastructure been designed and implemented to help the community better withstand a natural disaster?		Green features can work along with existing infrastructure to improve the community's overall resilience to potential flooding.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

Watersheds

Quality watersheds are environmental, economic and social assets for a community. Municipalities should actively seek opportunities to incorporate best practices near watersheds to ensure that this valuable resource is maintained now and for future generations. Similar to many of the benchmarks in this environmental category, the goal is to improve the community's ability to have human activity coexisting with natural systems. These benchmarks can help communities to balance these two needs.

	Benchmark	Self-Assessment	Description
38.1	Has the community conducted an assessment of existing or potential threats to watershed health?		The first step in creating action steps to preserving and enhancing water quality is to identify current and potential threats.
38.2	Are watersheds in the community consistently monitored for quality of health?		The municipality or partner organization should assess water quality consistently and at different points within the ecosystem.
38.3	Does the master plan mention watershed protection and/or quality improvement?		Watershed protection should be present in every community's master plan. It should identify risks, barriers and opportunities to preserving and improving water quality.
38.4	Does the community work with neighboring municipalities to maintain and improve the quality of transboundary waters?		Watersheds often cross municipal borders and the actions (or lack thereof) of one community can effect the ability of another community to enjoy a healthy body of water. For this reason, joint planning efforts are highly desirable in maintaining watershed quality.
38.5	Are regulations in place to prevent the destruction of watersheds from new development projects?		Communities can see their watersheds negatively affected by development patterns. Sometimes state and federal regulations prevent development that harms natural features. When these regulations still leave gaps in protections, local governments can implement their own regulatory controls.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

New development siting

This section is meant to combine benchmarks from throughout this guide, while adding additional recommendations, to provide a comprehensive look at how communities can site developments to be as sustainable as possible. New developments are inappropriate in various areas of a community because of their negative effects on natural assets, the strain they place on the municipality's ability to service these structures and the problems that arise when housing, jobs and amenities are long distances from one another. Sustainable communities seek to understand how development in a particular area will affect the sustainability of the community as a whole.

	Benchmark	Self-Assessment	Description
39.1	Does the master plan promote the siting of new developments in locations near existing infrastructure and public transportation?		New developments that work with the existing built environment and municipal abilities to provide services to this area should be sought to the extent possible.
39.2	Does the master plan mention open space and farmland preservation?		Without addressing these community features in the master plan, the locality runs the risk of losing some of its most important assets. Open space and quality farmland are nearly impossible to regain once they are lost.
39.3	Are new developments regulated or incentivized to incorporate green features and/or energy efficient designs?		Development presents a unique opportunity to integrate green features into the built environment. Proactive communities can use the zoning ordinance or incentive programs to encourage these practices.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable

	Benchmark	Self-Assessment	Description
39.4	Does the future land use map consider historical data and projections related to climate risks, economic outlooks, social needs and community planning input?		New developments should not be sited in areas that have a high risk of flooding. Changes in the climate have meant that previous risk assessment data may need to be updated to ensure new development siting is advisable.
39.5	Are developments in the community sited away from critical habitats and other sensitive natural systems?		While development always affects natural habitats, it is important to recognize that some habitats are more critical to the whole system and some are more fragile than others. The community needs to identify these areas and work to prevent development there.
39.6	Are new developments encouraged to be sited near a diverse range of amenities such as grocery stores, banks, schools and community centers?		Housing that is close to a range of amenities helps to reduce reliance on the personal vehicle and can help create a more socially cohesive community.

Y—Yes   **I**—Yes, but should improve   **N**—No   **?**—Don't know   **NA**—Not applicable