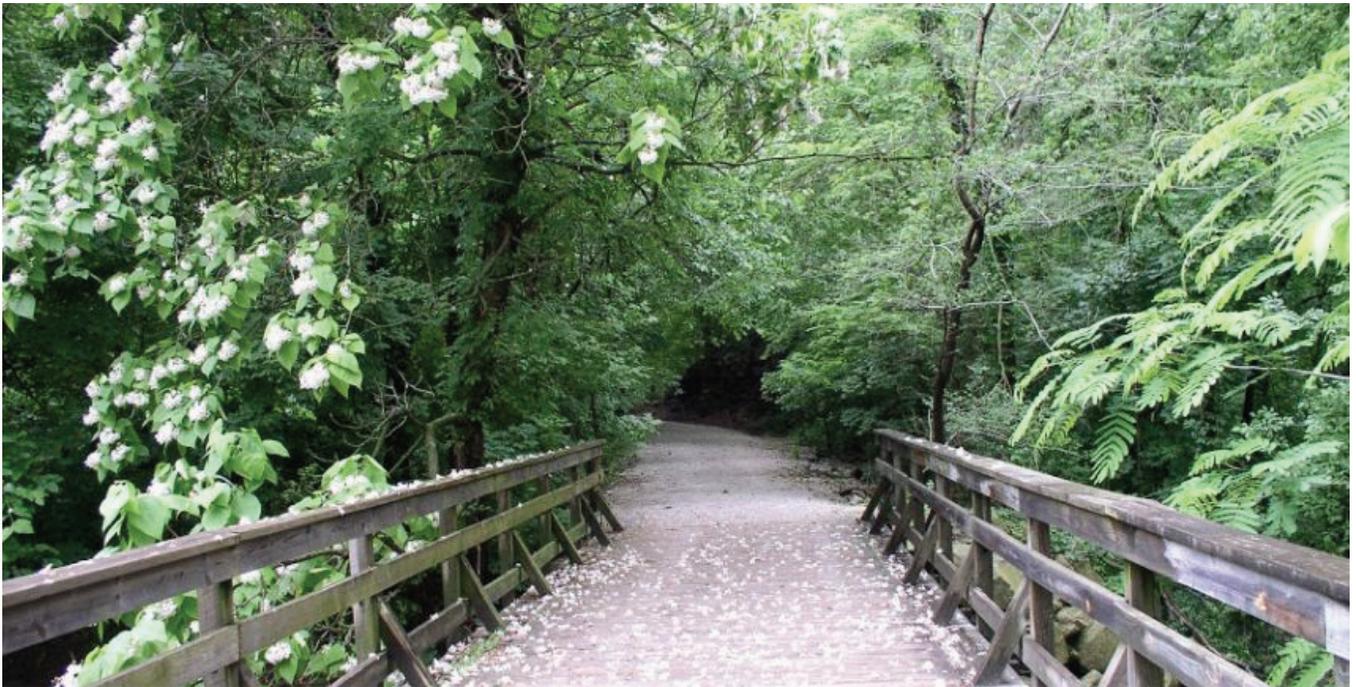


LEADING  STAR
COMMUNITY INDICATORS



2017 Methodology Guide



STAR Communities is a Washington, DC based nonprofit organization that works to evaluate, improve, and certify sustainable communities. We administer the STAR Community Rating System (STAR), the nation's leading framework and certification program for local sustainability. Cities and counties use STAR to measure their progress across social, economic, and environmental performance areas.

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Introduction

The STAR Community Rating System® (STAR) provides a comprehensive set of national goals and objectives for improving the sustainability of U.S. cities, towns, and counties. STAR contains 45 objectives with over 500 evaluation measures. The measures are divided into two types of data: outcomes and actions. Outcome measures are quantitative, such as the number of businesses in a community or median household income. Action measures are qualitative, referring to plans, policies, programs, or other activities that are intended to improve outcomes. The rating system is available for download for free on the STAR Communities website, www.starcommunities.org/rating-system/download.

A subset of the outcome measures, called the Leading STAR Community Indicators (Leading Indicators), was developed to communicate high-priority sustainability issues that U.S. communities are tackling. The Leading Indicators:

- provide communities with a simple way to get started with sustainability indicators;
- offer guidance on metrics that are commonly important and readily accessible;
- enable benchmarking and annual reporting in communities throughout the U.S.; and
- leverage local government consensus to improve access to data.

At this time, participation in reporting for STAR is limited to local governments representing communities in the United States. Local governments must have a STAR Communities account to participate.

Purpose

The Leading Indicators are intended to be used by local governments at the city or county level to collect and report on a common set of metrics. Participation in the data entry phase is limited to designees from within the local government. However, once published, the communities' data and associated graphics for aggregating and comparing other communities is available to the public. Data may consist of elements from the local government itself, universities, nonprofits, the private sector, regional, state or federal agencies, philanthropic institutions, and other community leaders.

This Leading STAR Community Indicators Methodology Guide is a supporting document. Communities engaged in data collection and reporting follow the directions contained herein to locate the appropriate data sources and understand submittal requirements.

In addition, the Methodology Guide is a tool for verifying the data reported. Whereas STAR Communities staff verifies applications for STAR certification, the Leading Indicators are self-reported without review or authentication by STAR Communities staff. Participating communities are held accountable by reporting their values in accordance with the guidance in this Methodology Guide. If a discrepancy is found, viewers should notify the community's contact, listed on the Indicators dashboard, and refer it to STAR Communities at info@starcommunities.org.

While many of the outcome measures within STAR are designed to track progress over time, the Leading Indicators are designed to provide an annual snapshot. However, the methodologies for each indicator and its respective STAR outcome are based on the same data sources and limitations. Therefore, the data collected for the Leading Indicators can also help communities understand and transition to STAR certification.

Development

The concept for the Leading STAR Community Indicators emerged from an informal group of approximately 15 U.S. communities, affiliated with both the Urban Sustainability Directors Network (USDN) and STAR Communities. The communities expressed interest in identifying a subset of STAR's outcome measures that could be used for annual reporting and peer city benchmarking, in between re-certification efforts. The ability to attract new communities to STAR by providing a smaller set of measures to report on was also of interest.

With the support of the STAR Communities Board of Directors, the working group received philanthropic support to pursue the project in early 2015. The group then surveyed USDN and STAR Communities members about indicators and performance measurement; reviewed analyses of the first 30 STAR certifications; assessed potential alignment with long-standing city indicators projects; convened regular work group and sub-committee meetings; and traveled to Washington, DC to hold an in-person convening.

By summer 2015, the working group had selected a set of 25 outcome measures from the rating system for further study and analysis. That draft set was reviewed by the STAR Technical Advisory Group in June 2015 and Steering Committee in July 2015 and by late summer the final set of 21 measures was decided on.

A small set of working group members agreed to pilot test the indicators in advance of the Annual Meeting of the USDN. STAR Communities staff provided technical guidance and support to those communities. A workshop was held in Minneapolis, MN in late October for USDN members ready to commit to the project. Working group members challenged other USDN members to participate in the pilot and support the Leading STAR Community Indicators project. Almost 40 communities participated in the pilot phase of the Leading STAR Community Indicators project from January until November 2016.

The following groups were directly involved in the development of the Leading Indicators:

Urban Sustainability Directors Network: The Urban Sustainability Directors Network (USDN) is a peer-to-peer network of local government professionals from cities across the United States and Canada dedicated to creating a healthier environment, economic prosperity, and increased social equity. Our dynamic network enables sustainability directors and staff to share best practices and accelerate the application of good ideas across North America.

STAR Communities: STAR Communities is a nonprofit organization that works to evaluate, improve, and certify sustainable communities. We administer the STAR Community Rating System, the nation's leading framework and certification program for measuring social, economic, and environmental sustainability at the communitywide scale.

Working Group: The following communities were a part of the working group: Tucson, AZ; Evanston, IL; Dubuque, IA; Dearborn, MI; San Antonio, TX; Santa Fe, NM; Las Cruces, NM; Santa Monica, CA; Ann Arbor, MI; Washington, DC; Fairfax, VA; Charlotte, NC; Minneapolis, MN; Fort Lauderdale, FL; St. Peters, MO; and Surrey, BC.

Pilots: Abington Township, PA; Albany, NY; Ann Arbor, MI; Austin, TX; Avondale, AZ; Beaverton,

OR; Blacksburg, VA; Bloomington, IN; Brookings, SD; Cary, NC; Cedar Rapids, IA; Cleveland, OH; Columbia, MO; Columbus, OH; Denver, CO; Evanston, IL; Fairfax, VA; Fayetteville, AR; Holland, MI; Hollywood, FL; Houston, TX; Indianapolis, IN; Iowa City, IA; Johnson County, IA; Kansas City, MO; King County, WA; Lakewood, CO; Las Vegas, NV; Louisville, KY; Montgomery County, MD; Northampton, MA; Oklahoma City, OK; Palm Bay, FL; Plano, TX; Sarasota, FL; Springfield, MO; St. Peters, MO; Tacoma, WA; Tucson, AZ; and Washington, DC.

Reporting Indicators

The Leading STAR Community Indicators are completed through demonstration of two types of measures: Required Indicators and Flexible Indicators. Required Indicators typically draw data from nationally available and easy-to-use sources and must be fully completed by each participant. Flexible Indicators require a more in-depth process involving local data collection. For Flexible Indicators, participants first note whether or not a relevant analysis or assessment has been completed and if data is available for the community. If data is not available, participants only need to mark “No”. If data is available, documentation is required. The Leading Indicators includes 13 Required Indicators and 8 Flexible Indicators.

A list of the Leading Indicators is provided in the Table of Contents on Page 6.

Supporting Materials

This Methodology Guide includes specific directions on how to collect data for each indicator. In addition, STAR has developed several project management tools and resources available for download from either the Online Reporting Tool's Resources section or Indicator area of STAR's website.

The Online Reporting Tool is a resource available to STAR subscribing communities and is the main tool for posting a community profile, submitting indicators, and providing a narrative to accompany individual indicators. It can be accessed by the community's primary contact person by logging into their online account. The community profile is created and maintained by the community's contact person. It may include a brief community description, up to 5 slideshow pictures, a city logo, contact information, website link, description of governance structure, and the latest population count.

Indicators are submitted via an online reporting form that includes specific fields that must be completed and a narrative section that allows a community to provide context for the values reported. The narrative section may include explanations for the reported values or highlight actions being taken within the community.

In addition to the Online Reporting Tool, participating communities are provided a data collection sheet. The data collection sheet is an Excel document that includes all the fields that must be entered into the Online Reporting Tool. The data collection sheet was created to provide a portable tool that project managers can use to compile their community's data.

Finally, there are five formula-based Excel spreadsheets to help ensure communities use consistent calculations for some of the more complicated indicators. Once completed, these spreadsheets are uploaded as supporting documentation in the Online Reporting Tool.

Online Dashboard

The Leading Indicators Dashboard can be accessed at www.starcommunities.org/indicators.

The landing page for the Leading Indicators includes a section on Getting Started as well as a map identifying participating communities throughout the United States. Navigation buttons allow website users to do one of three things: **View Indicators**, **Compare Communities**, or **Community Dashboards**.

The **View Indicators** button allows website users to view an aggregate graph of each indicator across all participating communities for the most recent reporting year. The national value for the indicator, if available, is provided under the graph.

The **Compare Communities** button allows website users to select up to 10 communities to compare specific indicators for the most recent reporting year.

The **Community Dashboards** button provides access to the community's profile and a link to the individual indicators reported by the community in the present year and any previous years reported.

Self-Reporting

The Leading Indicators are intended to be a self-reporting tool for participating communities to display annual data and apply a benchmark to other communities. The data reported is not subjected to the same rigorous verification process required for STAR certification.

Viewers of the online dashboard must be aware that there may be errors in reporting. This Methodology Guide is made freely available for any user to review and confirm values stated by any community. If an error is discovered, please notify the community's contact person (contact information found on the Community Dashboard) and STAR Communities at info@starcommunities.org.

How Data Will Be Used

The intent of the Leading Indicators is to provide an online platform for a community to share specific metrics related to sustainability and be able to compare these metrics with other communities. Where relevant, national values will be added for context.

However, the Leading Indicators will not be used to establish ranking of "most sustainable community". These Leading Indicators were identified to be meaningful for annual reporting and important for understanding underlying issues. But they are not exhaustive and collectively do not represent achievement of some qualifying status. Often there are nuances that may impact a specific indicator within a community. The point is to share where communities are at and how they are working to improve.

The narrative used to describe comparisons shall not and should not be consolidated into "best of" lists.



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Important Notes For Starting

- A community's report is submitted by the local government of either a U.S. city or county.
- Only one person is designated as a point of contact per community. If you are unsure of who this person is, open up the Community Dashboard to view the community's profile.
- A community must be an active subscriber of STAR Communities to access the reporting tools. If you are interested in signing up or having your community participate, go to www.STARcommunities.org for more information.
- **When starting this year's report, the "For Calendar Year" field must be 2017 and the "Population" field must be based on the 2015 ACS 5-year estimate: Total population row from Table DP05 of the U.S. Census.**

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Indicator 1: Drinking Water Quality

Required

Corresponds to STAR BE-2, Outcome 1

Demonstrate that the community is not in violation of EPA's drinking water rules for chemical and microbial contaminants in water pipes and turbidity

EPA's standards are primarily designed to protect public health by limiting the levels of contaminants in drinking water. This indicator focuses on standards for total coliform, turbidity, and water pathogens. It should be noted that EPA does not have the authority to regulate [private drinking water wells](#) where approximately 15% of Americans get their water. STAR encourages participants to address water quality in private wells in addition to the public system.

Data for this indicator is available from the community's water supplier, which could be either a regional organization or the community's water agency or department.

Participants must show that within the past year the community has not been in violation of EPA's [drinking water rules](#) for chemical contaminants, such as total coliform and E. coli. Specifically, participants must demonstrate compliance with the EPA's [Total Coliform Rule](#), which stipulates that small systems may have no more than one positive sample per month and large systems may have no more than 5% positive samples per month. Communities with multiple water treatment plants must meet the standards for all facilities.

In addition, participants must demonstrate that the drinking water supplied to residents in the past year is not in violation of EPA's Maximum Containment Level (MCL) [standards](#) for turbidity and any regulated water pathogens.

Note that communities that are solely supplied via groundwater may not need to report on turbidity or water pathogens. If this is the case, simply note these elements do not apply because supply is only groundwater.

Most water suppliers publish Consumer Confidence Reports (CCR) or Water Quality Reports (WQR) on their websites and/or on the EPA's [CCR webpage](#). Reports are generally issued in the spring of year following when data was collected. It should be noted that some drinking water providers title their reports based on the data year (i.e. 2016 CCR) while others title their reports based on the year released (i.e. 2017 CCR). Either is acceptable if the reported data is from the 2016 calendar year.

To complete this indicator, participants must report any violations during the 2016 calendar year and provide the CCR or Water Quality Report published in 2017. Communities with multiple water treatment plants must meet the standards for all facilities.

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Indicator 2: Safe Wastewater Management

Required

Corresponds to STAR BE-2, Outcome 3

Demonstrate that all NPDES permit holders, including publicly owned treatment works (POTWs), are in compliance with Clean Water Act effluent and reporting guidelines

Untreated or poorly treated wastewater degrades surface waters and makes them unsafe for human uses such as drinking, fishing, and swimming. The [National Pollutant Discharge Elimination System \(NPDES\)](#) permit program of the Clean Water Act (CWA) helps to control wastewater pollution by regulating point sources that discharge pollutants into U.S. waters.

To access data, go to the EPA's [Enforcement and Compliance History Online \(ECHO\)](#) system, then follow these steps:

1. Do not perform the "Quick Search". Select "More Search Options".
2. In Search Type form: select "Water";
3. In Geographic Location form:
 - a. City: if participant is a city or township, type name of city. If participant is a county, leave this field blank;
 - b. State: select the appropriate state; and
 - c. County: if participant is a county, select the name of the county;
4. In Enforcement and Compliance form, click "View More" in the upper left corner, then:
 - a. Quarters in Significant Non-Compliance (past 3 years): select "1 or More Quarters"; and
5. Select "Search".

If no facilities are listed, then this confirms that there are no quarters in significant noncompliance. Report the value as 0.

If facilities are listed in the ECHO table, then select Download Data, format "Excel". This file will be used to record the facilities in Significant Non-Compliance for the 2016 calendar year and uploaded as supporting documentation. If an error occurs in downloading, create a new Excel file and enter the data manually, including at least the Facility Name and NPDES ID.

Next, in the online ECHO table, click the Facility Name from the list to open the Detailed Facility Report. Scroll down the Detailed Facility Report to the Enforcement and Compliance section. Restrict data to "CWA only". Consider the Facility-Level Status code for any quarter within the 2016 calendar year. If the code indicates a SNC/Cat I with a SNC/RNC History code starting with S, E, X, T, or D, then record this as a facility in violation in the spreadsheet by noting the code and a brief description of the violation. Also, record whether the facility is a POTW, such as a wastewater treatment facility or industrial discharger/other. Include each facility in the online list of facilities. If the violation did not occur in the 2016 calendar year, then note that in the Comments column of the spreadsheet. Then, sum the number of POTWs and other regulated facilities in Significant Non-Compliance for the 2016 calendar year.

Participants must supply both the number of POTWs and the number of other regulated dischargers in Significant Non-Compliance in the 2016 calendar year. Upload the ECHO-derived Excel spreadsheet or a screenshot of the search results if none are listed.

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Examples of submittals for Indicator 2:

If the search results in facilities listed in SNC:

Facility Name	NPDES ID	Facility Type	SNC in 2016?	Quarters in SNC for 2016	Notes
Starsville Potable Water Facility	US0000001	Raw Water Treatment	Yes	3	The first 3 quarters of 2016 show code S(CSchVio); in 1st quarter there is a note about Limit Viol related to pH. The SNC is likely related to lack of reporting.
Starsville Wastewater Treatment Facility	US0000002	POTW	No	0	Violations occurred in 2015 calendar year
Astro Pipeline Company LP	US0100000	Industrial	Yes	1	E(EffViol) in 1st quarter of 2016 for exceeding Iron limits
		# of POTWs in SNC:	0		
		# of other in SNC:	2		

If the search results in no facilities listed in SNC:

Facility Name	NPDES ID	Reports	Street Address	City	State
No facilities found					

--OR--

Current Search ▼

0 Facilities Found

Criteria

Search Type: Water

Results View: Data Table

City: Starsville ✕

State(s): ST - State ✕

Permit Status: Effective; Expired; Administratively Continued; Pending; Retired ✕

Permit Type: NPD - NPDES Individual Permit; NGP - NPDES Master General Permit; GPC - General Permit Covered Facility; UFT - Unpermitted Facility ✕

Quarters in Significant Non-Compliance (past 3 years): 1 or More Quarters ✕

Explore Enforcement and Compliance Criteria

- 0 Facilities with Current Violations
- 0 Facilities with Current Significant Violations
- 0 Facilities with Violations (3 yrs)
- 0 Facilities with Formal Enforcement Actions (5 yrs)
- 0 Facilities with Informal Enforcement Actions (5 yrs)
- 0 Facilities with Inspections (5 yrs)

[Modify Search](#)

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Indicator 3: Housing and Transportation Costs

Required

Corresponds to STAR BE-4, Outcome I

Provide the Average Housing + Transportation Cost as a percent of income for the jurisdiction
--AND--

Provide the percentage of Census block groups where a household earning the Area Median Income (AMI) would spend less than 45% on housing and transportation combined
--AND--

Provide the percentage of Census block groups where a household earning 80% AMI would spend less than 45% on housing and transportation combined

STAR has adopted the Center for Neighborhood Technology's (CNT) [Housing + Transportation Affordability Index](#) (H+T Index) to measure household affordability because it factors in both housing and transportation costs at a neighborhood level. CNT's [methodology](#) defines affordability as combined housing and transportation costs that consume no more than 45% of household income. CNT's methodology relies on a traditionally accepted standard of 30% of household income for housing costs plus 15% for transportation costs. The H+T data is based on the Core Based Statistical Areas and uses data from the 2015 American Community Survey 5-year Estimate, National Transit Database, Consumer Expenditure Survey, and other national sources. Therefore, the reporting year for this indicator should be 2015.

The H+T Index displays data based on population, household, and neighborhood scales. The neighborhood scale is roughly equivalent to a Census block group.

Open the [H+T Index interactive map](#), then enter the city or county name into the search field. First, record the Average Housing + Transportation Costs % Income. Then, select the Neighborhood tab and sum all percentages in the "% of Neighborhoods" column for rows labeled "<24%", "24 – 36%", and "36 – 45%". The sum is the percentage of Census blocks where 45% or less of Regional Typical household income is spent on housing and transportation. Record this value.

Repeat for Regional Moderate households by selecting the radio button for "Regional Moderate" in the filter above the map.



Average Housing + Transportation Costs % Income

Sum percentages of all rows less than or equal to 45%

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Indicator 4: Transportation Mode Split

Required

Corresponds to STAR BE-7, Outcome I

Provide the percentage of residents for the following journey-to-work trips:

- Drive alone
- Carpool
- Public transit
- Walk
- Bike
- Work from home

While it would be ideal to know the transportation habits of all residents in various activities throughout the year, commuting data provides a good proxy for understanding the community’s overall mode choices. Participants must document the percentage of residents for the following 6 mode categories: Drive alone, Carpool, Public transit, Walk, Bike, and Work from home.

To access data, go to [American FactFinder2](#) and click “Advanced Search”. Then, follow these steps:

1. Enter the following dataset in the Topic or Table Name field: “S0801 – Community Characteristics by Sex”;
2. Enter the city or county name in the State, County, or Place field;
3. Click “Go”;
4. Select the 2015 ACS 5-year estimates; and
5. Record and report the percentages for each mode listed.

The graphic below demonstrates what the data source table should look like.

Subject	United States					
	Total		Male		Female	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Workers 16 years and over	140,770,488	+/-86,009	74,452,993	+/-55,396	66,317,495	+/-54,036
MEANS OF TRANSPORTATION TO WORK						
Car, truck, or van	86.0%	+/-0.1	85.8%	+/-0.1	86.1%	+/-0.1
Drove alone	76.4%	+/-0.1	75.9%	+/-0.1	76.8%	+/-0.1
Carpooled	9.6%	+/-0.1	9.9%	+/-0.1	9.3%	+/-0.1
In 2-person carpool	7.4%	+/-0.1	7.5%	+/-0.1	7.3%	+/-0.1
In 3-person carpool	1.3%	+/-0.1	1.4%	+/-0.1	1.2%	+/-0.1
In 4-or-more person carpool	0.9%	+/-0.1	1.1%	+/-0.1	0.7%	+/-0.1
Workers per car, truck, or van	1.07	+/-0.01	1.07	+/-0.01	1.06	+/-0.01
Public transportation (excluding taxicab)	5.1%	+/-0.1	4.8%	+/-0.1	5.4%	+/-0.1
Walked	2.8%	+/-0.1	2.9%	+/-0.1	2.7%	+/-0.1
Bicycle	0.6%	+/-0.1	0.8%	+/-0.1	0.3%	+/-0.1
Taxicab, motorcycle, or other means	1.2%	+/-0.1	1.5%	+/-0.1	0.9%	+/-0.1
Worked at home	4.3%	+/-0.1	4.2%	+/-0.1	4.5%	+/-0.1

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Indicator 5: Transportation Safety

Required

Corresponds to STAR BE-7, Outcome 3

Provide the number of pedestrian and bicyclist fatalities in the jurisdiction

While there are many indicators of transportation safety, STAR uses pedestrian and bicyclist fatalities because of the interconnectedness with transportation choices. People will only shift their mode of travel to walking or bicycling if they have safe supporting infrastructure, thereby gaining the affordability benefits and reducing vehicle miles traveled (VMT).

Data for this indicator is available both at the city and county level from NHTSA's [Fatality Analysis Reporting System](#) (FARS) via the Query FARS Data tool. After opening the website, follow these steps:

1. Select "2015" in the dropdown menu on the upper right of the page and click submit;
2. Select "Option 2" and click submit;
3. Select "City" or "County" from the Crashes fields, and "Injury Severity" and "Person Type" from the Non Occupant fields and click submit;
4. In a separate web page, go to the [US General Services Administration's GLCs for the USA & DC](#) website. Download the "FRPP GLC United States" Excel document. Filter table to locate the appropriate 4-digit city or 3-digit county code;
5. Go back to the FARS Query. Select the applicable state from the State list and enter the city or county code into box beneath the list. Select "Fatal Injury (K)" from the Injury Severity list, and select both "Pedestrian" and "Bicyclist" from the Person Type list. To select multiple values, hold down the "Control" key on a PC or the "Command" key on a Macintosh while clicking the variables of interest. Then, click "Univariate Tabulation"; and
6. Select "Person Type" from the variable list, "Number of Persons" from the Data to Count list and click submit.

Participants may also use local data, if it is deemed to be more accurate. Local data may be available from local law enforcement or the state's Department of Transportation. If using local data, note that this is the case in the Indicator Story section of the reporting tool.

At this time, participants shall report a combined number with both pedestrian and bicyclist fatalities. If participants want to clarify or differentiate these numbers, do so in the Indicator Story section of the reporting tool. Future iterations of the tool may require these values to be reported separately.

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Indicator 6: Climate Adaptation, Vulnerability Assessment

Flexible

Corresponds to STAR CE-I, Outcome I

Document the current vulnerability rating in up to 4 of the core areas identified locally

Climate change impacts vary by location. Given this, participants are encouraged to focus on issues of greatest concern in their local context.

The National Oceanic and Atmospheric Administration (NOAA) has developed a [U.S. Climate Resilience Toolkit](#) that details a 5-step process for planning and implementing resilience-building projects, including the identification of climate threats and assessment of vulnerability and risks. Examples of vulnerability assessments include: [King County, WA's](#) Strategic Climate Action Plan, [Broward County, FL's](#) vulnerability assessment for coastal cities, and [Baltimore, MD's](#) Disaster Preparedness and Planning Project (DP3) all provide examples of assessing climate vulnerability.

If a Climate Vulnerability Assessment has been completed for the jurisdiction based on evaluation of conditions for one or more years between 2012 and 2016, then participant should respond “Yes” and follow the instructions below. Participants with assessments conducted prior to 2012 may respond “Yes” if the assessment has been updated within the past 5 years. If a Climate Vulnerability Assessment has not been completed or the assessment is based on conditions from more than 5 years ago with no update, respond “No” and go to the next indicator.

For those reporting “Yes”, identify up to 4 core areas of local climate change adaptation concerns. The core areas must fit into at least 3 of 4 general groupings: Built Environment, Economic Environment, Natural Environment, and Social Environment.

Below are examples of core areas within the general groupings:

Built Environment

- homes threatened by fire or flooding
- roadways and evacuation routes
- stormwater infrastructure
- transportation infrastructure

Natural Environment

- biodiversity
- coastal zone threats
- forestry
- water resources

Economic Environment

- agriculture
- community development
- energy supply and/or demand
- tourism (e.g. coastal areas or winter recreation)

Social Environment

- emergency management
- recreational facilities
- public health
- sensitive and vulnerable populations

Once the core areas are recorded, move on to the next steps of quantifying the vulnerability.

While vulnerability assessments vary in terms of breadth and depth, they should be conducted every 2-5 years after the initial assessment and consider the following aspects:

- *Sensitivity* is the degree to which climate change would impair a system if projected impacts occur. Systems that are greatly impaired by small changes in climate have a high sensitivity, while systems that are minimally impaired by the same small change in climate have a low sensitivity. To determine the system's sensitivity, the local government should consider non-climate factors already affecting the

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system that weaken its ability to deal with additional stressors related to climate change.

- *Adaptive capacity* is the ability of a system to make adjustments or changes in order to maintain its primary functions even with the impacts of climate change. To determine the system’s adaptive capacity, STAR recommends that participants consider current resources and the resources needed to adapt to anticipated long-term changes. An adaptive capacity assessment should consider a minimum of 5 categories of resources: economic, environmental, governance, social, and technology or infrastructure.

The tables below provide a way to measure climate change vulnerability for systems with identified risk exposure. STAR has developed a spreadsheet based on these tables that may be used by participants to identify the Sensitive Ranking and Adaptive Capacity Ranking in each of the core areas identified.

Vulnerability, Sensitivity and Adaptive Capacity Rankings					
Sensitivity Ranking		Adaptive Capacity Ranking		Vulnerability Index	
S-0	System will not be affected by the impact	AC-0	System is not able to accommodate or adjust to impact	PO	Potential Opportunity
S-1	System will be minimally affected by the impact	AC-1	System is minimally able to accommodate or adjust to impact	V-1	Low Vulnerability
S-2	System will be somewhat affected by the impact	AC-2	System is somewhat able to accommodate or adjust to impact	V-2	Medium-Low Vulnerability
S-3	System will be largely affected by the impact	AC-3	System is mostly able to accommodate or adjust to impact	V-3	Medium Vulnerability
S-4	System will be greatly affected by the impact	AC-4	System is able to accommodate or adjust to impact in a beneficial way	V-4	Medium-High Vulnerability
				V-5	High Vulnerability

Vulnerability Index		Sensitivity Ranking: Low to High				
		S-0	S-1	S-2	S-3	S-4
Adaptive Capacity Ranking: Low to High	AC-0	V-2	V-3	V-4	V-5	V-5
	AC-1	V-1	V-2	V-3	V-4	V-5
	AC-2	V-1	V-1	V-2	V-3	V-4
	AC-3	PO	V-1	V-1	V-2	V-3
	AC-4	PO	PO	PO	V-1	V-2

If reporting on this indicator, participants must report the Vulnerability Index for each core area identified and upload either the most recent Climate Vulnerability Assessment or the completed STAR-provided Excel spreadsheet, including sources.

LEADING STAR COMMUNITY INDICATORS

Indicator 7: Greenhouse Gas Emissions

Flexible

Corresponds to STAR CE-2, Outcome I

Demonstrate communitywide greenhouse gas (GHG) emissions from within the past 5 years

The Kyoto Protocol development process established the long-term target of reducing by 80% the GHG emissions of all industrialized countries by 2050. Although the U.S. was not a participant in the Kyoto Protocol, over 1,000 mayors across the U.S. were signatories to the U.S. Conference of Mayors' Climate Protection Agreement, committing to meet or exceed the Kyoto targets.

While a potentially more aggressive target, its long-term nature did not lead to the immediate actions necessary to reduce GHG emissions. So, leaders and delegates from 195 world nations formulated a global agreement on the reduction of climate change at the 2015 Paris Climate Conference. The final agreement outlines various measures that need to be implemented to limit the rise in average global temperature to well below 2°C, ideally at below 1.5°C. In March 2015, the [U.S. set a goal](#) to reduce its greenhouse gas emission by up to 28% below 2005 levels by 2025.

For this indicator, the participant is required to submit a GHG inventory of emissions throughout the jurisdiction, not just local government operations. In addition, the reported data must be from the most recent year released between 2012 and 2016.

There are several methods to assess communitywide GHG emissions; STAR recommends either the [Global Protocol for Community-Scale Greenhouse Gas Emission Inventories \(GPC\)](#) or the more U.S. tailored version called the [U.S. Community Protocol for Accounting and Reporting on Greenhouse Gas Emissions \(USCP\)](#).

The minimum standards from each protocol are nearly identical. The primary differences are that the USCP does not require cross-boundary sources, such as transportation, to be separated by jurisdictional boundary. However, it does require an assessment of energy used in the delivery of potable water.

If such a communitywide GHG inventory has been completed, then participant should respond "Yes". If not, then respond "No" and go to the next indicator.

For participants reporting "Yes", report the total communitywide GHG emissions from within the past 5 years (in metric tons carbon dioxide equivalent, MTCO_{2e}) and provide a link to or upload of the inventory. Note that this indicator will be converted to "GHG emissions per capita" in the public-facing dashboard display.

LEADING STAR COMMUNITY INDICATORS

Indicator 8: Renewable Electrical Energy Supply

Flexible

Corresponds to STAR CE-3, Outcome 2

Demonstrate the portion of the community's overall electric utility generating capacity includes a portion from renewable energy sources

Per EPA [estimates](#), approximately 67% of electricity comes from burning fossil fuels, such as coal, oil, and natural gas. This combustion is responsible for over 30% of total GHG emissions in the United States. Since 1990, GHG emissions from electricity have increased by about 12% as demand for energy has grown and fossil fuels remain the primary source for generation. In addition, fossil fuel combustion contributes to increased air pollution and higher rates of water consumption in comparison to renewable energy sources.

According to the [U.S. Energy Information Administration](#), renewable energy sources represented roughly 9% of non-vehicular U.S. energy consumption in 2011. To successfully address climate change and achieve energy independence, the U.S. must drastically increase its use of renewable energy-based electricity.

For the purposes of STAR, renewable energy facilities are defined as those that use biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less, hydroelectric that is third-party certified by the [Low Impact Hydropower Institute](#), digester gas, solid waste conversion, landfill gas, ocean waves, ocean thermal, or tidal currents to produce electricity. Renewable energy credits (RECs) may be included if they are [Green-e certified](#).

The first step is to identify whether the electric utility discloses the portion of their generating capacity that comes from renewable energy sources. This information may be available in an annual report, on the "About Us" section of a company's website, or in compliance reports for a renewable portfolio standard (RPS). The data must be from the most recent year released, between 2012 and 2016. If not disclosed or data is older than 2012, then mark "No" in the reporting tool and move to the next indicator.

If disclosed, there are two options for reporting. In Option A, participants report on the portion of the generating capacity coming from renewable sources. In Option B, participants may report the value of a state or local RPS and confirm compliance. For either option, use the STAR-provided Excel spreadsheet.

For Option A, establish the total generating capacity of the electricity provider. The provider's service area may or may not align with the jurisdictional boundaries. If more than one provider to the jurisdiction, estimate the percentage of the market held by each electricity provider. Then, determine the generating capacity of any renewable energy sources, as defined by STAR in the paragraph above. Divide the generating capacity of any renewable energy sources by the total capacity. If more than one utility, sum the contributions based on each provider's proportional contribution to the community. Participants may either report this value or detail each specific renewable energy source and its associated percentage. If detailing, the generating capacity of renewable energy sources that are off-grid, such as landfill gas, may be added.

For Option B, if the utility must comply with an RPS, the RPS rate may be submitted. If utility is not in compliance, the rate of record must also be submitted. If more than one utility serves the jurisdiction, then establish the percentage of the market held by each electricity provider. Participants may either report this value or detail each specific renewable energy source and its associated percentage. With Option B, off-grid renewable energy sources cannot be included.

In addition to recording the value, upload the STAR-provided Excel spreadsheet and include a link to data source.

LEADING STAR COMMUNITY INDICATORS

Indicator 9: Total Solid Waste

Flexible

Corresponds to STAR CE-7, Outcome 1

Provide the total solid waste generated within the jurisdiction that is disposed of via landfill, waste-to-energy facility, or incinerator

STAR encourages an ambitious long-term target of reducing by 100% the total solid waste generated within the jurisdiction that is disposed of via landfill or incinerator. Commonly called zero waste, this target encourages communities to reach a high level of sustainability.

Total solid waste includes municipal solid waste, construction and demolition waste, organic waste, and household hazardous waste. Participants should include all of these waste streams in total solid waste calculations.

Participants must identify whether they measure total solid waste generated within the jurisdiction that is disposed of via landfill, waste-to-energy facility, or incinerator. Data must represent waste disposed within the past 5 years, between 2012 and 2016. Ideally, solid waste counts will represent only the community's generated waste. However, some local governments share disposal facilities. Therefore, data may be reported at a larger geographic level and the portion attributable to the jurisdiction can be calculated based on a ratio to the population.

If reporting on this indicator, participants must submit the most recent annual total solid waste and upload a description of the methodology used to calculate total solid waste.

LEADING STAR COMMUNITY INDICATORS

Indicator 10: Third Grade Reading Proficiency

Required

Corresponds to STAR EAC-3, Outcomes 1

Demonstrate the percentage of third grade public school students that meet or exceed reading proficiency

According to the [2015 National Report Card](#) published by the National Assessment of Educational Progress (NAEP), average reading scores for fourth graders across the country remain below proficient with no change in the scores between 2013 and 2015. Reading proficiency standards are a key indicator of whether students have acquired the knowledge necessary to succeed in more advanced classwork in higher-grade levels.

A [study](#) by the University of Chicago found third grade reading level to be a significant predictor of eighth grade reading level and ninth grade course performance, as well as graduation and college attendance, even after controlling for demographic characteristics and school influences on individual performance.

Data for this indicator is available from either the local school district or the state department of education. If the public school district boundaries extend beyond the jurisdiction, then only count the individual elementary schools within the jurisdiction. If multiple public school districts operate within the community, submit data based on the individual elementary schools and/or each independent school district that is completely within the jurisdiction.

Use the STAR-provided Excel spreadsheet to help with data collection and weighted population calculations.

Participants must provide the percentage of third grade public school students meeting or exceeding reading proficiency standards in the 2015-2016 school year and upload the STAR-provided Excel workbook with a link to the data source.

Note that some school districts test students at the beginning of the fourth grade, rather than the end of the third grade. Fourth grade reading proficiency scores may be submitted if third grade scores are not available for the jurisdiction.

LEADING STAR COMMUNITY INDICATORS

Indicator 1 I: High School Graduation Rate & Graduate Rate Equity

Required

Corresponds to STAR EAC-3, Outcomes 3 & 4

Provide the average 4-year adjusted cohort high school graduation rate for all public schools in the jurisdiction

--AND--

Provide the average 4-year adjusted cohort high school graduation rate for all students in all public schools in the jurisdiction from groups based on race/ethnicity, special education, English language learners, and low-income

In his 2009 State of the Union address, President Obama set a [goal](#) to achieve a 90% high school graduation rate nationwide by 2020. Since then, the nation as a whole has seen significant progress with rates up to 81% in 2015.

The link between educational attainment and earnings potential is well documented. [Research](#) by the Institute for Social Research at the University of Michigan shows that, on average, households headed by a high school graduate accumulate 10 times more wealth than households headed by an individual who dropped out of high school.

In order to improve accountability at the high school level, the U.S. Department of Education (DoED) [requires](#) all state and local educational agencies receiving Title I funds to calculate and report a uniform high school graduation rate, which is called the 4-year adjusted cohort high school graduation rate.

Data for this indicator is available from either the local school district or the state department of education. If the public school district boundaries extend beyond the jurisdiction, then only count the individual high schools within the jurisdiction. If multiple public school districts operate within the community, submit data based on the individual high schools and/or each independent school district that is completely within the jurisdiction.

Because the number of graduating students in a high school may vary widely, the total graduation rate for the jurisdiction is based on a weighted average based on the number of students and individual high school graduation rate. Use the STAR-provided Excel spreadsheet to help with data collection and calculations.

Participants must provide a weighted average of the 4-year adjusted cohort high school graduation rate for all public schools located within the jurisdiction for the 2015-2016 school year. Participants must also report a weighted average 4-year adjusted cohort high school graduation rate for student subgroups attending public schools located within the jurisdiction. DoED student subgroups include:

- Race/ethnicity: American Indian/Alaska Native, Asian, Latino, Native Hawaiian/Pacific-Islander, African-American, White;
- Special education;
- English Language Learner (ELL); and
- Low-income: eligible for USDA Free and Reduced-Price Lunch Program.

Upload the STAR-provided Excel spreadsheet with a link to the data source used.

LEADING STAR COMMUNITY INDICATORS

Indicator 12: Environmental Justice, Risk and Exposure

Flexible

Corresponds to STAR EE-3, Outcome 1

Quantify risk and exposure to environmental justice conditions for overburdened neighborhoods

STAR recognizes that communities may not have the resources to work on all environmental justice conditions, such as health disparity and toxic exposure, all at once. A first step is to identify areas with high concentrations of populations that have been historically overburdened with environmental impacts. Some communities may have this data from local sources. If so, upload maps and data based on local sources.

If the community does not have existing local data, then they may use the [EPA's Environmental Justice Screening and Mapping Tool \(EJSCREEN\)](#). Begin by entering the name of the jurisdiction in the search field. Click "Map Data" in the top navigation bar and select "EJ Indexes". Click through each option and record the Blockgroup ID for any Block Group that is in the 80 percentile or higher for the jurisdiction. Take a screenshot of each map where the EJ Index is in the 80 percentile or higher and paste into a new document. Whether reporting on this indicator or not, upload the mapping document. Note that while EJScreen provides a starting point for identifying environmental justice sites in the community, these mapping efforts should be paired with robust community engagement to determine on-the-ground conditions and priorities.

Regardless of whether reporting on this flexible indicator, all participants must upload a map showing areas with that are historically overburdened by environmental impacts.

If the community has quantified risk or exposure, then select 4 areas or sites to report. Name the geographic area and describe the indicators being measured for the area. The selected sites should be those known or suspected of having higher pollution exposure levels or risks.

Participants reporting on this indicator must identify at least one indicator to assess per site; however, multiple indicators may be identified and tracked. Indicators can vary considerably depending on the environmental conditions at each site. Examples of environmental justice indicators include:

- concentration of air pollutant emissions from a specific point source, such as an industrial or incineration facility;
- concentration of chemical pollutants in waters near a specific point source or discharge site;
- number of permit exceedances by regulated facilities;
- concentration of polluted stormwater runoff into rivers and streams;
- contaminated soil from industrial processes; and/or
- noise or vibration levels.

If reporting this indicator, participants must provide the locally selected indicators and the most recently reported values for each geographic area from within the past 5 years (2012 – 2016).

LEADING STAR COMMUNITY INDICATORS

Flexible

Indicator I3: Equitable Access & Proximity to Foundational Community Assets

Corresponds to STAR EE-4, Outcome I

Demonstrate access and proximity by residents of diverse income levels and race/ethnicity to the following community facilities, services, and infrastructure:

- Public transit facilities and service levels
- Public libraries
- Public schools
- Public spaces
- Healthful food
- Health and human services
- Digital access or high speed internet
- Urban tree canopy
- Emergency response time

While there are a variety of conditions that impact the opportunity for residents to thrive, this indicator focuses on 9 categories of foundational community assets where:

- local governments typically exert influence or control;
- a deficit in access or proximity could have a significant negative bearing on residents' quality of life;
- access and proximity to them can be highly varied across neighborhoods and populations; and
- related spatial data availability affords ease of diagnosis, actionable insights, and accountability for progress.

This indicator relies on spatial analysis of demographic characteristics, specifically household income levels and racial/ethnic composition of neighborhoods.

Note that the analysis described below is only required if the participant is reporting data for this indicator.

Identifying Quintiles for Analysis

Each of the selected categories of foundational community assets must be assessed against a backdrop of the community's demographic characteristics. The following methodology describes the steps necessary to determine income and race/ ethnicity parameters to be used in the spatial analysis. The participant will use Census data on income and racial demographics to divide the community's Census tracts into quintiles. These quintiles will be overlaid with spatial data on key foundational community assets in order to assess which quintiles are receiving lower levels of access or service. The participant should conflate the income and racial layers using a weighted point structure to create one final base map for submission.

To do this, complete the following steps:

1. Determine the appropriate geographic boundary for the selected category. It may be the same as the jurisdictional boundary, or may vary based on service territories.
2. Select the most recent year for the data related to the foundational community assets being reported.
3. Identify the demographic characteristics for the established boundary using [American FactFinder2](#).

LEADING STAR COMMUNITY INDICATORS

For race/ethnicity, use the following dataset for 2010 Census block groups for the applicable city or county: QT-P6 – Race Alone or in Combination and Hispanic or Latino: 2010. For household income, use the following dataset for the 2006-2010 average household income by Census tracts: B19013 – Median Household Income in the past 12 months (in 2010 inflation-adjusted dollars). More recent 5-year averages may be used if available.

4. Distribute race/ethnicity characteristics into 5 relatively even groups based on population within the Census block groups. For example, if the total population is 100,000 residents, then the groups should reflect the race/ethnicity concentrations for the lowest 20%, the second lowest 20%, the middle 20%, the second highest 20%, and the highest 20% of the population.
5. Distribute household income characteristics into 5 relatively even groups based on population. For example, if the total population is 100,000 residents, then the groups should reflect the income range for the lowest 20%, the second lowest 20%, the middle 20%, the second highest 20%, and the highest 20% of the population.
6. Assign a score to each Census area and then add the scores to create a merged set of quintiles. For race/ethnicity, assign a score from 1 for the Census block groups with the lowest percentages of people of color to 5 for the Census block groups with the highest percentages of people of color. Then, evaluate the block groups within the respective Census tract and average the scores to create a Census tract score for race/ethnicity.
7. For income demographics, assign a score of 1 for the highest income Census tracts to 5 for the lowest income Census tracts.
8. Sum the 2 scores for each Census tract and then divide the result in a weighted set of quintiles that can be used to assess the distribution of the community's assets. A relatively equal number of Census tracts should be in each quintile.
9. Overlay the appropriate information for the categories described in Sections A – I below.
10. Calculate the lowest performing quintile at the selected year and then average the performance for all 5 quintiles to establish the community norm. This will be auto-calculated in the STAR-provided Excel workbook.

Category Standards for Submissions

Communities should use GIS spatial data layers to demonstrate access to community assets as described in Sections A – I below. Data will be needed from the local or regional GIS manager, relevant service providers in the jurisdiction, and/or the authorities specified below for each category. Reported data must be from the most recent data year, between 2012 and 2016.

A. Public transit facilities OR service levels: For this category, participants can show either proximity to transit facilities OR access to transit service levels.

- The spatial data layer for the public transit facilities option should depict transit access points (stops, stations, and terminals) in the jurisdiction based on locally collected data originated by all relevant transit service providers. Proximity is defined as a 1/4-mile walk distance from bus or streetcar stops, or a 1/2-mile walk distance of bus rapid transit stops, light or heavy rail stations, and/or passenger ferry terminals.

OR

- The spatial data layer for the transit service levels option should depict public transit service levels based on total service hours of commuter rail, light rail, heavy rail, streetcar, bus, and/or passenger ferry service available to the public in hours per week. Service should be delivered to residents in or adjacent to the Census tracts and block groups of the demographic quintiles.

LEADING STAR COMMUNITY INDICATORS

B. Public libraries: The spatial data layer should depict all public libraries in the jurisdiction based on data collected locally by the library network. Proximity to libraries is measured as households within a 1/2-mile walk distance of a library.

C. Public schools: For this category, participants can show either proximity to public schools OR access to high quality schools.

- The spatial data layer should depict all public elementary schools in the jurisdiction based on data collected locally by the school district. Proximity is measured as households within a 1/2-mile walk distance of a school.

OR

- The spatial data layer should depict information for all public elementary schools in the jurisdiction based on data collected locally by the school district and should depict performance in third grading reading level.

D. Public spaces: The spatial data layer should depict public spaces based on locally collected information from the jurisdiction's natural resources or parks department. Proximity to these spaces is defined as a 1/2-mile walk distance to a public space.

E. Healthful food: The spatial data layer should depict healthful food retail outlets based on local data provided by commercial databases (ESRI's [Business Analyst](#), [InfoUSA](#), or [Dun and Bradstreet](#)) and/or other local sources. Proximity to healthful food retailers is measured as households within a 1/4-mile walk distance of the identified retailers.

F. Health and human services: The spatial data layer should depict publicly accessible hospitals and clinics in the jurisdiction based on data collected locally by the public health agency. Proximity to these facilities is measured as households within a 1/2-mile walk distance of appropriate facilities.

G. Digital access or high speed Internet: For this category, participants can show either proximity to public Internet facilities OR access to high-speed Internet service.

- The spatial data layer for the first option should depict public Internet access points based on locally collected data from libraries, community-based organizations, and other community anchor institutions that offer the service. Proximity is measured as households within a 1/2-mile walk distance of all Internet access points.

OR

- The spatial data layer for access to high-speed internet should depict the coverage of broadband service provided in the jurisdiction to residents in the Census tracts and block groups of the demographic quintiles based on information provided by all relevant companies or local/state communications authorities.

H. Urban tree canopy: The spatial data layer for urban tree canopy should show the prevalence of vegetation in Census blocks and tracts, where prevalence is determined by spatial portrayals of trees and vegetation using land cover maps from one of the following types of sources: satellite data (converted to a normalized difference vegetation index - [NDVI](#)), [Lidar resources through GIS](#), [i-Tree Canopy](#), or [i-Tree ECO](#).

I. Emergency response times: The spatial data layer should include the number of households in Census blocks and tracts where response times meet NFPA 1710 or 1720 standards based on information provided by the local fire department.

LEADING STAR COMMUNITY INDICATORS

Indicator I4: Businesses

Corresponds to STAR EJ-1, Outcome I

Required

Provide the number of business establishments in the jurisdiction

Business establishments provide employment opportunities and resources to residents and communities. This indicator helps characterize the health of the region's overall business development patterns.

Data for this indicator is published by the Census' Business Patterns in late Spring 2017. County participants must use the "County" geographic area. Cities or towns may elect to use a different geographical scale, such as county, Metro/Micropolitan Statistical Area or ZIP Code, if it is a better representation of economic activity.

To access data, go to [American FactFinder2](#) and click "Advanced Search". Then, follow these steps:

1. Select "Topics" from the blue box fields in the left margin. Then, click "Program" and select "Business Patterns". Close Topics menu;
2. Select "Geographies" from the blue box fields in the left margin. Click "Name" from the tabs along the top;
3. Type the name of the jurisdiction in the search box and click "Go". Note that data is only available for county, MSA, or ZIP Code, not individual cities;
4. Select the box next to the most appropriate geography and then select "Add". If using ZIP Codes, select the geography with "All 5-Digit ZIP Codes fully within/partially within ..."
5. Close Geographies menu; and
6. From the list of options, select the most recent Geography Area Series: County Business Patterns table for 2015.

Participants must provide the number of establishments from the "Total for All Sectors" row. If using ZIP Codes, the participant may need to sum the totals for each ZIP Code. If this is the case, do not include any values from ZIP 99999 in the total.

LEADING STAR COMMUNITY INDICATORS

Indicator 15: Employment

Corresponds to STAR EJ-1, Outcome 2

Required

Provide the percentage of the population 16 years and over employed

--AND--

Provide the unemployment rate of the population 16 years and over

Employment and unemployment rates are basic indicators of economic health. A decreasing unemployment rate signals that the economy is strong enough to provide jobs for those who are able to work. An increasing employment rate also indicates that the local workforce has the skills needed for the jobs that are available.

To access data, go to [American FactFinder2](#) and click “Advanced Search”. Then, follow these steps:

1. Enter the following dataset in the Topic or Table Name field: “S2301 – Employment Status”;
2. Enter the city or county name in the State, County, or Place field. In some cases, the Metropolitan or Micropolitan Statistical Area may be a better representation of the community than the jurisdiction. That is acceptable, but the same scale must be used for both parts.
3. Click “Go”; and
4. Select the 2015 ACS 5-year estimate.

Participants must provide the values for “Employment/Population Ratio - Estimate and Unemployment rate - Estimate from the Population 16 years and over” row.

LEADING STAR COMMUNITY INDICATORS

Indicator I6: Median Household Income

Required

Corresponds to STAR EJ-4, Outcome I

Provide the real median household income for the jurisdiction

Real median household income is commonly used to measure economic performance and is considered by many statisticians to be a better indicator than the average household income, as it is not dramatically affected by unusually high or low values.

To access data, go to [American FactFinder2](#) and click “Advanced Search”. Then, follow these steps:

1. Enter the following dataset in the Topic or Table Name field: “DP03 – Selected Economic Characteristics”;
2. Enter the city or county name in the State, County, or Place field.
3. Click “Go”; and
4. Select the 2015 ACS 5-year estimate.

Participants must provide the value for the median household income.

LEADING STAR COMMUNITY INDICATORS

Indicator 17: Living Wages

Corresponds to STAR EJ-4, Outcome 2

Required

Provide the percentage of household incomes in the jurisdiction that meet or exceed the living wage standard

In many American communities, workers in low-wage jobs do not earn sufficient income to provide basic needs, such as shelter, clothing, and nutritious food, given the local cost of living. This indicator measures whether the median household income in a jurisdiction is sufficient to allow employees to live where they work.

A living wage is the minimum income necessary for a worker to meet basic needs, such as housing payments, food, clothing, utilities, and access to health care without governmental support. It is calculated based on a 40-hour workweek and HUD guidelines that an individual or household should not spend more than 30% of income on housing.

To determine the percentage of households that meet or exceed the living wage standard, participants should follow the steps below:

1. Determine the total households and types of households by using the Census' [American FactFinder2](#), Advanced Search, Dataset "DP02 – Selected Social Characteristics in the United States", and enter the name of the jurisdiction;
2. Record the 2015 ACS 5-year estimate data into the STAR-provided Excel spreadsheet;
3. To determine the number of households in each income and benefits range group, clear the DP02 dataset and use the following dataset for the applicable city or county: "DP03 – Selected Economic Characteristics";
4. Record the 2015 ACS 5-year estimate data into the STAR-provided Excel spreadsheet;
5. To calculate the living wage standard, open the [Living Wage Calculator](#). Select the applicable jurisdiction and record the living wage standard for each of the categories listed on the STAR-provided Excel spreadsheet; and
6. Based on the data entered, the STAR-provided Excel spreadsheet will calculate the percentage of households living above the living wage in the jurisdiction.

Participants must provide the calculated living wage standards for the jurisdiction, the percent of household incomes in the jurisdiction that meet or exceed the living wage standard, and the STAR-provided Excel spreadsheet.

LEADING STAR COMMUNITY INDICATORS

Indicator I8: Food Security and Assistance

Required

Corresponds to STAR HS-4, Outcome I

Provide the percentage of the overall population and of children that are food insecure

The financial means to purchase healthful food is an ongoing challenge for millions of low-income families in the United States. Food insecurity prompts families to turn to federal assistance, food banks, or other charitable and nonprofit community resources.

To access data, go to Feeding America's [Map the Meal Gap](#) tool. [Data release for 2015 should be available in Spring 2017.] Then, follow these steps:

1. For Map Type, select "County". Participating cities should use the most relevant county. If the city's jurisdictional area crosses into more than 1 county, record the percentages for each county and calculate a weighted percentage based on the resident population;
2. For Year, select "2015";
3. For Demographic, select "Child";
4. For Location, select the relevant state;
5. The map will reposition to show the selected state. Then, click on the County; and
6. Scroll down to the graphic below the map and note the "Food Insecurity Rate for Overall and Child".

Participants must provide the Food Insecurity Rate values for the overall population and child population.

LEADING STAR COMMUNITY INDICATORS

Indicator I9: Access to Healthful Food

Flexible

Corresponds to STAR HS-4, Outcome 2

Demonstrate the percentage of residents living in a food desert

In recent years, the importance of convenient access to fresh food has emerged as both a public health issue and a new priority for urban planning. While obesity levels for adults and children continue to climb across the U.S., the situation is particularly dire in minority and low-income areas where disparities in access to full-service grocery stores have been repeatedly [documented](#). While access to a nearby grocery store does not guarantee improved nutrition and health, it is an essential component, especially in very low-income areas where convenience stores and fast food restaurants are prevalent alternatives.

Participants must identify whether the community has mapped and assessed food deserts within the jurisdiction. **If not, participants must still upload a map of food deserts in their jurisdiction from the USDA Economic Research Service (ERS) [Food Access Research Atlas](#).** To create map, click the link and perform the following:

1. Type jurisdiction name in “Find a place” field;
2. Select the following layers: “LI and LA at 1 and 10 miles” and “LI and LA at ½ and 10 miles”; and
3. Use the map tool to Print to PDF.

If food deserts have been mapped and assessed, participants must provide the overall percentage of residents living in a food desert and upload or provide a link to a map of community food deserts and the calculation used for measurement. This may be done using data from the ERS’s “Download the Data” website or using local data.

To perform an assessment, there are two options – one using ArcGIS Network Analyst and one using just ArcGIS.

If using ArcGIS Network Analyst, performing the following:

1. Gather and map data regarding the location of healthful food retail outlets either locally or through a national vendor, such as ESRI’s [Business Analyst](#) or [Dun & Bradstreet](#). Note that narrowly focused or specialty shops, such as seafood shops, and convenience stores should not be included; healthful food retail outlets are full-service locations where customers can purchase a variety of foods necessary for complete and balanced meals (NAICS code 445110);
2. Using business licensing permits, certificates of occupancy, or similar data, map existing healthful food retail outlets;
3. Using ArcGIS Network Analyst, create a ¼-mile walk distance buffer around each retail location;
4. Determine the percentage of residents living within a walkable ¼-mile of a healthful food outlet. Assume equal population density within the Census tract;
5. Subtract the percentage of residents living within a walkable ¼-mile of a healthful food outlet from 100% to find the percentage of residents living within a food desert.

If using just ArcGIS, open the ERS’s [“Download the Data” website](#) and perform the following:

1. Download the Current Version Food Access Research Atlas Data Download (Excel file; 5/7/2013);
2. Using ArcGIS, join the spreadsheet with a Census tract boundary file for the jurisdiction;
3. Use business licensing permits, certificates of occupancy, or similar data to identify and map existing

LEADING STAR COMMUNITY INDICATORS

healthful food retail outlets. Note that narrowly focused or specialty shops, such as seafood shops, and convenience stores should not be included; healthful food retail outlets are full-service locations where customers can purchase a variety of foods necessary for complete and balanced meals (NAICS code 445110);

4. Add a 0.5 mile (urban) or 10-mile (rural) buffer around each healthful food retail outlet;
5. Estimate the percentage of residents within the Census tracts served by healthful food outlets. Assume equal population density within the Census tract. Areas that appear as food deserts, but have no residents, such as airports or rail yards, may be excluded;
6. Subtract the percentage of residents within the buffer of a healthful food outlet from 100% to find the percentage of residents living within a food desert.

If reporting on this indicator, participants must provide the value for the percentage of residents living within defined food deserts for a reporting year within the past 5 years and upload or link to a map of community food deserts, including the calculation used for measurement.

LEADING STAR COMMUNITY INDICATORS

Indicator 20: Violent Crime Rate

Required

Corresponds to STAR HS-7 Outcome 1

Provide the violent crime rate for:

- Homicides per 100,000 residents
- Incidents of rape or attempted rape per 100,000 residents
- Aggravated assaults per 100,000 residents

At the local level, violent crime rates are provided through the FBI's Uniform Crime Reports (UCR) system. The FBI strongly cautions against using UCR data to rank communities or evaluate law enforcement effectiveness because crime rates can vary widely due to economic stability, job availability, population density and degree of urbanization, and the concentration of youth, among other factors.

To access data, go to [UCR Data Reports](#), select the "Crime Stats for 2016" under Latest Releases. [Data release should be available in the Spring 2017.] Then, follow these steps:

1. Select "Violent Crime" from the list of Offenses Known to Law Enforcement;
2. If a city or town:
 - a. Select "Table 8" from the list of data tables;
 - b. Select the appropriate state from the list;
 - c. In the table produced, scroll down to city name and record values for population, murder and nonnegligent manslaughter, rape (revised definition), and aggravated assault;
 - d. If the city includes universities or colleges that operate outside of the local government jurisdiction, repeat steps a – c using Table 9; and
 - e. Convert crime values to a rate per 100,000 residents.
3. If a county:
 - a. Select "Table 10" from the list of data tables;
 - b. Select the appropriate state from the list;
 - c. In the table produced, scroll down to city name and record values for population, murder and nonnegligent manslaughter, rape (revised definition), and aggravated assault. These values only represent unincorporated areas of the county;
 - d. If the county includes municipalities with population 10,000 or greater, repeat steps a – c using Table 8;
 - e. If county includes universities or colleges that operate outside of the local government jurisdiction, repeat steps a – c using Table 9; and
 - f. Convert summed crime values to a rate per 100,000 residents.

UCR data is only available for communities with population 10,000 or greater. For smaller communities, use local data that is normalized per 100,000 people. If the population is 10,000 or greater and it is not listed in the *Crime in the US 2016* report, it may be because the deadline for data submittals to the FBI was missed. In this case, collect the data locally from the appropriate sources.

Participants must provide the violent crime rates for homicide, rape or attempted rape, and aggravated assault per 100,000 for the 2016 calendar year.

LEADING STAR COMMUNITY INDICATORS

Indicator 2I: Designated Green Infrastructure

Flexible

Corresponds to STAR NS-I, Outcome I [[Green Stormwater Infrastructure](#)]

Provide the percentage of the jurisdiction's land area that has designated green stormwater infrastructure providing bioretention and infiltration services

According to a [U.K. study](#) on green infrastructure and climate adaptation, a community begins to see climate adaptation benefits when 35% of the community's land area is designated as green infrastructure. Designated green infrastructure implies an interconnected network of waterways, wetlands, woodlands, wildlife habitats, and other natural areas. Green infrastructure may be designated as preserved in a natural state or engineered for retention or infiltration of stormwater, such as green roofs, porous pavement, or bioswales.

Land areas used must be legally protected from development through conservation easements, forest preserves, land trusts, right-of-way, and similar conservation mechanisms. Land zoned for, and being used as, parkland and open space may also be included if it is maintained in a natural state and connected to the broader system. However, golf courses may only be included if the participant can document it was designed as part of the community's green infrastructure system.

Participants must identify whether or not the community has mapped and assessed green infrastructure within the jurisdiction. Data must be based on a year within the past 5 years (2012 – 2016). Participants supplying data must provide the total percentage of the jurisdiction's land area that has protected vegetated or pervious surfaces.

Participants will need to rely on a combination of local and national datasets for this outcome. National datasets include the [National Wetland Inventory](#) for wetlands, EPA's [National Stormwater Calculator](#) and [Enhanced River Reach GIS File](#), and [i-Tree](#), which is a tool that provides tree canopy and pervious surface data. Use ArcGIS to determine the percent of the jurisdiction's land area that is encompassed by these various forms of green infrastructure.

To calculate the percent of green infrastructure features, sum the acres of all green infrastructure features and divide by the total land area in the jurisdiction. In the total land area calculation, do not include acres of permanently saturated areas, such as lakes, streams, or ponds. Do include land areas classified as wetlands.

If reporting this indicator, participants must provide the percentage of the jurisdiction's land area classified as green infrastructure and upload or link to a map of community green infrastructure, including the calculation used for measurement.