Clean Mobility Options

Needs Assessment

Data Collection Guide

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Introduction

The Clean Mobility Options Voucher Pilot Program (CMO) features two types of voucher-funding to help communities access clean mobility options projects: Clean Mobility Project Vouchers and Community Transportation Needs Assessment Vouchers. The Community Transportation Needs Assessment (needs assessment) is central to both types of vouchers. Clean Mobility Project Vouchers are intended to launch and operate a clean mobility project such as zero-emission carsharing, carpooling/vanpooling, bikesharing/scooter-sharing, innovative transit services, and ride-on-demand services. Needs Assessment Vouchers are intended to support communities in identifying their unmet transportation needs and evaluating gaps through a community transportation evaluation process, which can then inform the type of mobility need(s) for a mobility project application.

Needs assessments evaluate community transportation gaps, help identify and understand unmet mobility needs of communities, and develop solutions in collaboration with community residents. As established in the CMO Implementation Manual, needs assessments require the following three elements:

1. **Transportation Access Data Analysis:** Quantitative analysis of community’s mobility needs from sources such as resident surveys and analyses of at least three additional data sources, which can include but are not limited to the data sources or indicators in this document. Surveys may be administered through in-person interviews, paper or online questionnaires, and options must be provided for residents that do not have access to a computer or the internet.

2. **Community Engagement:** Documented ongoing engagement with a clearly defined audience through at least two venues such as community forums, in-person or virtual workshops, webinars, house meetings, focus groups, interviews, etc.

3. **Summary Report:** A Summary report on the findings of the Transportation Access Data Analysis and the Community Engagement efforts, including outcomes of how the two elements reinforce or contradict each other. Mobility Project applications must demonstrate a direct connection between the needs assessment findings and the proposed project.

In order to receive Clean Mobility Project Voucher funding to launch and operate a clean mobility project, applicants must conduct (or have conducted) a needs assessment before applying for funding and describe the conclusions of the assessment in their application. In order to receive Needs Assessment Voucher funding, applicants must submit an application to conduct a needs assessment for identifying unmet mobility needs and write a report detailing its outcomes. These applicants can then develop an application for a Clean Mobility Project Voucher for subsequent program funding windows. This guide is intended to help applicants complete the Transportation Access Data Analysis portion of the needs assessment, which will inform the Community Engagement portion of the assessment by providing a baseline understanding of travel behavior and gaps in transportation access in the proposed project areas.
There are various data sources and indicators outlined in this guide which can be used to conduct a Transportation Access Data Analysis. Applicants are not limited to the data sources and indicators outlined in this guide and may use other resources if they are representative of the project area, such as studies conducted by local or regional agencies or other entities in the community where the project is located.

Consistent with the Implementation Manual, this guide focuses on data sources and indicators that explore *accessibility, reliability, and affordability* of current transportation options, which are three key characteristics for determining mobility patterns of regions and communities. Applicants are not limited to these characteristics and may include other characteristics in their analyses. The data sources and indicators listed in this guide provide some guidance on assessing travel behavior and availability of existing transportation options on a neighborhood and local level.

The instructions in the following pages will help applicants begin identifying, exploring, and analyzing data about their proposed project area.
How to Use This Guide

To use this guide, applicants should follow the steps described below:

Step 1: Identify the Project Area.

Before applicants use this guide for Needs Assessment data collection, they should identify the neighborhood that is the target Project Area for the Clean Mobility Options Voucher (CMO) project. For more information on appropriate project areas, please see the CMO Implementation Manual or the CMO Project Design Guide to be published in Spring 2020.

Step 2: Find an Address and Census Tract or Block Group Number for the Project Area.

Applicants can use Census tracts or block group numbers to get the necessary data for their project area. To lookup Census tracts or block group number, applicants may enter the project address in AllTransit or the Housing and Transportation (H+T®) Affordability Index. To lookup specific addresses, applicants may use a map website, such as Google Maps, to search the address of a centrally located place in the project area. For consistent analyses of different data sources and indicators, applicants should keep in mind that census block groups are smaller clusters of blocks within a census tract.

Step 3: Choose the data sources or indicators.

Applicants should decide what transportation access data sources or indicators are most representative of their project area’s travel patterns and important and relevant to community residents. The data sources and indicators listed in this guide are suggestions and applicants may or may not need to use additional resources. The Appendix section in the Table of Contents provides a list of examples of potential indicators.

Step 4: Get the data.

Users of this document should follow the links for each indicator within the document. The links connect to instructions in the Appendix that have step-by-step details on how to access different data sets and what to do with the information.
Data Sources and Indicators by Characteristic

Accessibility

Accessibility measures how much transportation provides access to opportunities (jobs, education, etc.), and vital services (schools, healthcare, legal services, etc.), and demonstrates how much mobility is available to residents in the project area. When reviewing the accessibility of transportation options, applicants should consider using the data sources and indicators to explore the answers to the following questions:

Applicants should determine which transportation options are currently available and the types of options that are available for vital services for commuting and recreation, as well the following considerations:

- How walkable are different neighborhoods or regions?
- How close are job opportunities relative to where people live? How long does it take for people to commute?
- What options are available for unbanked community members to access mobility options? Are those options readily and publicly available?
- Are there options for community members without smartphones to access mobility options?
- Are there travel challenges for people based on factors such as gender or age?

Safety is also an important element in accessibility measures, and some guiding questions for applicants to consider include:

- How safe are areas around bus stops or other transportation hubs and/or routes to transportation options? Are routes and areas to and around transportation options well-lit and surrounded by shade?
- Are there designated and/or protected bike lanes that make it safe for cyclists? Are streets and sidewalks in good repair?
- How safe are different transportation options? Are there security cameras? Is there a high rate of crime or violence in or near the project area?

Finally, applicants should also consider some of the following Americans with Disabilities Act (ADA) questions:

- What physical abilities are required for different types of transportation options? Is there wheelchair access? How about access to elevators?
- Where elevators are available, are they frequently out of service? If so, how does this affect people with limited mobility or families with strollers, etc.?
- What is the quality of street pavement for routes typically used for accessing transportation options?
Data sources and indicators that can help measure accessibility, may include, but are not limited to:

**Measure Walkability**
- **EPA National Walkability Index**
  - The EPA National Walkability Index is a nationwide geographic data resource that ranks census block groups according to their relative walkability.
- **AllTransit**
  - Walkable Neighborhoods lists the average amount of time it takes to walk around a block that is within ½ mile of transit. This information can be found in the health tab and used to show how long it takes for people to access local transportation options.
- Local Metropolitan Planning Organizations (MPOs) or Councils of Government (COGs)
  - These entities may have more locally focused indicators, such as street pavement or sidewalk quality data. MPOs or COGs can be found when searching an address in AllTransit or H & T.

**Measure Distance to Transportation Options from Origin Points**
- **EPA Smart Location Database Mapping Tool**
  - Summarizes characteristics such as housing density, diversity of land use, neighborhood design, destination accessibility, transit service, employment, and demographics.
- **AllTransit**
  - Measures distance to shared mobility options. This information can be found in the mobility tab.
- **Google Maps**
  - Determines distance (in miles) between transit stops and a particular origin point.

**Measure How Accessible Jobs are Relative to Where People Live**
- **AllTransit**
  - Measures access to job opportunities by transit, walking or biking. This information can be found in the Jobs tab.
  - Determines how feasible it is for people to commute to work using a bicycle. This information can be found in the Health tab.
  - Shows the bikeshare locations near transit. This information can be found in the Mobility tab.
- **Longitudinal Employer-Household Dynamics Origin-Destination Employment Statistics (LEHD-LODE)**
  - This dataset provides information on how many jobs are in a specific area. It also shows how many people commute in and out of a specified area for employment.

**Measure How Accessible Services are for People without Smartphones or Bank accounts**
Applicants can review the websites of local transit providers about how they address these issues, such as the availability of cash payment options for people who are unbanked, or call-in numbers to request service for people without smartphones. If the information is not readily available, or if there are additional questions, schedule a meeting via a phone call or email with the transit provider to ask about any gaps in information or for additional details. A list of transit providers by county and city can be found on the American Public Transit Association website. Other options to find out the ability for people without smartphones or bank accounts to access transportation can include:
• Surveys. Click here to access the CMO sample survey: Community Transportation Needs Assessment Sample Survey.
• Community forums. Host community forums to hear about how residents are accessing services.
• One-on-one conversations. Host conversations with residents to hear how they navigate their experiences.

**Measure Safety of Transportation Options**

• Inventory of Protected Bike Lanes
  o This resource is a spreadsheet of built and proposed protected bike lanes throughout the United States and Canada by city, street, and state and includes details on the status of the lane and protection type. The spreadsheet is continually being updated and can be found here.

• Applicants may also contact the local MPO or COG directly for their most up-to-date information. MPOs/COGs can be found when searching an address in AllTransit or H & T.
• On-the-ground observations within the project area should be conducted in conjunction with either of the above indicators to observe what currently exists within the community.
Reliability

Reliability measures how much people can depend on different transportation options to move around within their community. When reviewing the reliability of transportation options, applicants should consider using the indicators to explore the answers to the following questions:

- Do community members know about transportation services and can they trust the services to be available when required? Are transportation services and routes limited?
- Are transportation services frequently late? Are travel and wait times equally as long?
- Do transportation services break down often?
- Are streets or sidewalks often closed or inaccessible because of poor infrastructure?

The following resources can be used to measure how available different transportation options are such as walking, biking or transit, and how consistently they are available and functional to community members.

**Data sources and indicators that can help measure reliability may include, but are not limited to:**

**Local Metropolitan Planning Organization (MPO) and/or Council of Governments (COG)**

When reviewing a community’s transportation options for reliability, some options can include contacting the local MPO and/or COG in the area. Often times, MPOs or COGs have reports or surveys outlining all the available transportation options in the proposed project area along with feedback from users about their service. Applicants may access this information by either visiting relevant websites or by contacting the MPO or COG directly for their most up-to-date information. MPO’s/COG’s can be found when searching an address in AllTransit or H & T.

**Surveys or On-the-Ground Observation**

Another action to consider is to conduct a survey with the local community on questions about reliability. One resource applicants can use is an example resident survey known as the Community Transportation Needs Assessment Sample Survey. The survey can be used as a template to conduct a substantial resident survey, but there may be another format or set of questions that are more relevant to the local community. The Program Administrator Team also created a Spanish version of the Community Transportation Needs Assessment Sample Survey that is available to be used as a template by potential applicants.

**Local Transit Provider**

Applicants should also contact local transit providers to inquire if existing data sets that are available to the public that track how often their services are unavailable or late. If their datasets are not available to the public, applicants can inquire about the strategies/plans that they have in place to address these potential issues and/or how to build trust in their ridership. A list of transit providers by county and city can be found on the American Public Transit Association website.
Affordability

Affordability measures the cost of mobility in comparison to people’s income and other needs (healthcare, school, food, etc.) in the household. When reviewing the affordability of transportation options, applicants should consider using the indicators to explore the answers to the following questions:

- How much does it cost for different modes of transportation (walking, biking, driving, scooters, mopeds, transit – including shared options)? Are costs the same for everyone regardless of sex and age?
- What is the cost for driving a vehicle?
- What percentage of people’s income is spent on transportation?

Data Sources and indicators that can help measure affordability, may include, but are not limited to:

**Measuring Costs of Transportation**

- **AAA Gas Cost Calculator**
  - This indicator calculates the average cost per week for fueling a vehicle. Users visit the website and follow the prompts on the site.
- **H and T Index**
  - This tool measures different costs of transportation including annual transportation costs, annual auto ownership cost, annual vehicle-miles travelled (VMT) cost, and annual transit costs by Census block or tract level. Users select the appropriate indicator from the drop-down menu once they enter the project area and the tool calculates the appropriate costs.
- Check with local transit providers for relevant transportation costs and fees, like cost per hour for any existing shared mobility like bikeshare, carshare, and more. A list of transit providers by county and city can be found on the American Public Transit Association website.
- Conduct a survey of the local community about how often they use different transportation types and their associated monthly transportation costs. Click here for the CMO sample survey: [Community Transportation Needs Assessment Sample Survey](#).

**Measuring Transportation Costs Relative to Other Needs**

- **H and T Index**
  - Can measure the percent of income spent on transportation and housing, or transportation relative to other household expenditures like healthcare or food. Users select from the appropriate indicator from the drop-down menu once they enter the project area into the address lookup area. Areas where people spend more than 35% of their income on housing and transportation costs are typically considered burdened; areas with housing expenditures greater than 30% are typically considered burdened; and areas with transportation costs greater than 15% of income are typically considered burdened.
- Check with local transit providers for relevant transportation costs and fees, like costs for one transportation service in comparison to another. A list of transit providers by county and city can be found on the American Public Transit Association website.
- **Median Household Income**
  - Determines median household income and poverty rates in an area that allows users to compare transportation costs to other needs.
Appendix
EPA National Walkability Index

The EPA National Walkability Index is a nationwide geographic data resource that ranks block groups according to their relative walkability. To obtain your area’s walkability index, please follow the instruction below:

**Step 1:** Go to the EPA National Walkability Index [website](#). Enter neighborhood or city in upper right of home page.

**Step 2:** Click on the “Legend” tab on the upper left of the screen to view the walkability index.

The data can be used to show how the project area, or particular areas within the project area, are walkable. Ideally more detailed data can be obtained with on-the-ground observation within the project area.
AllTransit

This resource provides an overall transit access score and detailed data on job accessibility, transit access, and equity.

Please note: AllTransit contains data for metropolitan areas with a population over 100,000, and the tool may not generate reliable data for more rural locations.

**Step 1:** Go to the AllTransit website. Enter neighborhood or city information into search bar on the home page

![Discover the social and economic benefits of transit.](image)

**Step 2:** Look up Census Tract and/or Census Block Group number and MPO/COG:

![Explore over 200 AllTransit™ metrics that reveal the social and economic impact of transit.](image)

Click on the arrow next to the city name.

**Step 3:** Close the arrow selection and scroll down to view a map and the Performance Score of the address or city entered:

- AllTransit™ Performance Score: Overall transit score that looks at connectivity, access to jobs, and frequency of service.
Step 4: Continue to scroll down past the map to view each AllTransit metric:

Each metric shows a breakdown of more detailed information:

**Jobs**
- Transit Access to Jobs
- Transit access to workers
- Jobs nears transit
- Workers near transit

**Economy**
- Transportation costs
- Transit to customers

**Health**
- Commute by walking
- Walkable neighborhoods
- Neighborhood form
- Farmers market near transit
- Access to farmers markets

**Equity**
- Households near transit
- Households near high frequency transit
- Population near transit
- Population near high frequency transit
- Low income Housing Tax Credit (LIHTC)
- LIHTC units near transit

**Transit Quality**
- Transit performance score
- Transit connectivity index
- Transit accessshed
- Transit trips per week

**Mobility**
- Commuters
- Commuters near transit
- Carshare location nears transit
- Bikeshare location near transit
- Transit routes within ½ mile
- High frequency transit routes
- Transit stops near transit
EPA Smart Location Database Mapping Tool

The Smart Location Database is a nationwide geographic information system (GIS) data resource for measuring location efficiency. GIS is a framework for gathering, managing, and analyzing spatial location data that organizes layers of information into visually pleasing maps. The Smart Location Database includes more than 90 attributes summarizing characteristics such as housing density, diversity of land use, neighborhood design, destination accessibility, transit service, employment, and demographics. Most attributes are available for every census block group in the United States.

**Step 1:** Before the Smart Location Database Mapping tool can be accessed, sign-in, or create an account:

Create an ArcGIS Public Account

An ArcGIS public account is a free account designed for personal, non-commercial use. With a public account you can:

- Create, store, and manage maps, scenes, layers, apps, and other geospatial content
- Share content with others.
- Access content shared by Esri and GIS users around the world.

First name

Last name

Email

Confirm email

Review the Terms Of Use and Privacy Policy

Review the Terms of Use and Privacy Policy in other select languages

I accept and agree to be legally bound by:

- Esri ArcGIS Online Terms of Use
- Esri ArcGIS Online Privacy Policy

Next
Tips for using the Smart Location Database mapping tool

The ArcGIS.com interface for browsing Smart Location Database variables can be a little confusing at first. Here are some tips for navigating the data.

The default screen when you arrive at the interactive mapping tool has selectable content pages, including About, Content, and Legend. About shows what you're looking at, Content includes what is included in the map, and Legend is how the data looks on the map. It should look like the screenshot below.

**Step 2:** Click on the “content” button to see a list of variables available for viewing.
**Step 3:** After you click “content” a list of layers will appear. Click on “SmartLocationDatabase” to expand the list of variables available for viewing.

**Step 4:** A list of variables will appear below. Click the checkbox next to the variable of interest. If more than one variables are checked, only the top one will be viewable. To read a brief description of a particular variable, click on the little button to the left of the variable name and select “description”.
**Step 5:** To see a legend for the variable selected, click the “Legend” button.

**Step 6:** Click on an area of the map to retrieve the data value for a specific location of interest. Different data values can be chosen and used for additional analysis.
Google Maps

Google Maps is a useful resource to determine distance (in miles) between transit stops and a particular origin.

**Step 1:** Go to the Google Maps website. Enter the destination point in “Search Google Maps” box.

**Step 2:** Click “directions.”

**Step 3:** Click which mode you want to measure in time and miles: car, public transit, walking, biking

**Step 4:** Make a list of the time it takes to travel a certain distance for each transportation mode. The list should be usable for analysis.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Distance</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus</td>
<td>0.5 miles</td>
<td>40 minutes</td>
</tr>
<tr>
<td>Bike</td>
<td>0.5 miles</td>
<td>55 minutes</td>
</tr>
</tbody>
</table>
Longitudinal Employer-Household Dynamics Origin-Destination Employment Statistics (LEHD-LODE)

This dataset provides information on how many jobs are in a specific area. It also shows how many people commute in and out of a specified area for employment. This information can be useful to show how much people may rely on transportation when commuting to work.

- **Step 1**: Go to the LEHD-LODE OnTheMap website. Enter the city, town, county, or place you would like to search into the “Search” bar and select the appropriate location from the dropdown menu. Make sure you selected the appropriate county, place, etc.

- **Step 2**: Once you selected the appropriate area, it should appear on the screen. Click on “perform analysis on selection area.”

- **Step 3**: Click on “Perform Analysis on Select Area” and a window with different areas will appear. On the right-hand column under “Job Type,” click the “Primary Jobs” button. Since people may work second jobs at or during their primary place of employment (like a plumber working deliveries or baby-sitter answering phone calls), clicking this maintains the integrity of the data by analyzing the commute of the first job. Now click “Go!”
• **Step 4:** If you followed steps correctly, your screen should look similar to the image below. If you scroll on the right side of screen, you should see jobs by “worker age,” “earnings,” industry sector, race, ethnicity, educational attainment, and worker sex. Now you know the types of jobs in your area.

![OnTheMap tool image](image)

• **Step 5:** The OnTheMap tool has other tools and functions that may be useful to you. If you select the tools on upper left-hand column, you can create a radius around an area to know how many jobs there are. In the example below, we made a one-mile radius around our previous area. Follow the same steps to figure out how many jobs there are in that area.

![OnTheMap tool image](image)
Step 6: One last helpful tip - OnTheMap shows you how many people commute in and out of your area for employment. Knowing how people travel for work may be helpful in helping you develop your project. Once you select the project area, on “Analysis Type,” click “Inflow/Outflow” and select “Primary Jobs” in the “Job Type” column. Click “Go!”

If you followed steps correctly, you should see something similar to the graph below. The sample analysis shows 494 people come to the area for work, 38 people stay in the area for work, and 958 people leave the area for employment.
AAA Gas Calculator

This calculator provides the average cost per week for fueling a vehicle.

- **Step 1**: Go to the website and click on the “Gas Cost Calculator” tab.

- **Step 2**: Follow the prompts to calculate.
The Housing and Transportation (H+T®) Affordability Index

This indicator provides details on average housing and transportation costs. There is an opportunity to view this data both regionally and nationally for comparison. Census tract, census block group number or MPO/COG can be viewed through H+T:

- **Step 1:** Go to H + T [website](#) and click on "H+T Index"

- **Step 2:** Enter the project location
Step 3: Once the information is entered, data will pop up on the left side of the screen which includes the Census Tract, Census Block Group Number and the name of the local MPO/COG.

If this information does not automatically pop up, click the arrow below the name of the location.
Step 4: On the same page, click on “Fact Sheet” to view details, including charts and graphs on the Average Housing + Transportation Costs % Income and general transportation costs.

H+T Costs % Income: 67%
Housing: 37% Transportation: 29%

Municipality: Lathrop, CA

Traditional measures of housing affordability ignore transportation costs. Typically a household’s second-largest expenditure, transportation costs are largely a function of the characteristics of the neighborhood in which a household chooses to live. Location Matters. Compact and dynamic neighborhoods with walkable streets and high access to jobs, transit, and a wide variety of businesses are more efficient, affordable, and sustainable.

The statistics below are modeled for the Regional Typical Household Income: $50,274 Commuters: 3.17 Household Size: 3.16 (Stockton-Lodi, CA)

Location Efficiency Metrics

<table>
<thead>
<tr>
<th>Location Efficient Areas</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 8%</td>
<td>8-12%</td>
<td>12-15%</td>
<td>15-16%</td>
<td>16-22%</td>
<td>22-26%</td>
</tr>
</tbody>
</table>

Average Housing + Transportation Costs % Income

Factoring in both housing and transportation costs provides a more comprehensive way of thinking about the cost of housing and true affordability.

Transportation Costs

In dispersed areas, people need to own more vehicles and rely upon driving them farther distances which also drives up the cost of living. $15,653
Median Household Income

This indicator shows the median household income and poverty rates within the community through Census data.

- **Step 1:** Go to the Census data website. Enter “Median household income” and the zip code, city or census tract of the area you would like to search.

  ![Census](https://www.census.gov)

  **Explore Census Data**

  The Census Bureau is the leading source of quality data about the nation's people and economy.

  ![Search](https://www.census.gov)

  About 168 results | Filter

- **Step 2:** Click on “explore data” box to view table.

  ![Explore Data](https://www.census.gov)

  **$38,786 +/- $3,500 Median Household Income in ZCTA5 90012**

  Source: 2017 American Community Survey 5-Year Estimates

  https://www.census.gov/programs-surveys/acs/