Appendix II

Monitoring, Reporting, and Key Performance Indicators

August 2021

Measuring Progress

The Alexandria Mobility Plan (AMP) seeks to expand access to transportation choices, make it easier for people to get around by all modes, reduce single-occupancy vehicle travel, eliminate traffic fatalities and injuries, and more. **The City will track progress of the AMP through two means – overarching key performance indicators (KPIs) that are tied to the plan's guiding principles, and metrics for each chapter that are chapter-specific with targets established where applicable.** Many chapter-specific metrics are related to and will feed into the plan-level KPIs.

Key Performance Indicators

While City actions can help move the needle on the KPIs, it is important to recognize that other external factors may influence them as well. By tracking the KPIs, the City can take the pulse on how residents, visitors, and workers are experiencing mobility and potentially adjust areas of focus accordingly throughout the life of this plan.

Each guiding principle is associated with just one or two KPIs to understand mobility in Alexandria at the highest levels. To holistically track outcomes that address the equitable guiding principle, all KPIs are given an "equity lens" to measure progress in a way that is consistent with the City's ALL Alexandria resolution and ensures equitable outcomes for all Alexandrians, especially neighborhoods and populations that have been historically underserved. **Measuring progress toward achieving the guiding principles allows the City to track how transportation projects and initiatives improve and expand choices—and more choices can lead to improved quality of life and other benefits beyond transportation.**

There are many data challenges associated with measuring these high-level outcomes, so some KPIs may not be the ideal measure for a certain guiding principle. However, these were selected in consultation with City staff, subject matter experts, and the Alexandria Mobility Plan Advisory Committee (AMPAC) to be reflective of measures other plans are targeting and because they provide useful information on the outcomes this plan aims to achieve. As additional data and tools become available, the City may be able to track the guiding principles more effectively.

For each KPI, baseline information is provided which represents the most recent data available. The City commits to updating this information regularly following plan adoption, at least every three years, and publishing resulting data in a transparent manner on the City website.

Guiding Principles

KPIs are tied to the guiding principles of the AMP and are used to measure plan-level progress toward achieving City goals and targets through the AMP.

Accessible

Alexandria will work to make its transportation network easily accessible for users of all ages and abilities.

Connected

Alexandria's transportation system will take you where you want to go seamlessly by leveraging technology and integrating transportation and land use.

Convenient

Alexandria will provide a transportation system with high-quality mobility options that are reliable, frequent, proximate, and comfortable.

Equitable

Alexandria acknowledges that there are disparities in neighborhoods and populations in the city that have been historically underserved. Alexandria will be targeted, inclusive, and intentional in addressing gaps in mobility options available, their quality, and safety.

Safe

Alexandria will eliminate all traffic deaths and serious injuries by 2028.

Sustainable

Alexandria will prioritize low-carbon mobility options and reduce automobile dependency.

Accessible and Connected Definitions

The Accessible and Connected indicators are measured using "proximity to alternatives to driving" to understand the choices available. Useful alternatives to driving generally need to be nearby, frequent, and safe. Each component of this measure - transit access, pedestrian access, and bicycle access - have different measurements based on the characteristics of the particular mode.

Transit

Areas of Alexandria that are in close proximity to high-frequency transit service:

- **Proximity to Bus** - Areas within ¼ of a mile of a bus stop with midday bus frequencies of every 15 minutes or better.
- **Proximity to Rail** - Areas within ¼ of a mile of a Metrorail station with midday train frequencies of every 15 minutes or better.

Pedestrian

Areas of Alexandria that have no gaps in sidewalk coverage:

- **Proximity to Sidewalks** - Areas that are not within 330 feet (1/16 of a mile or about one city block) of a sidewalk gap (have sidewalks on both sides).

Bicycle

Areas of Alexandria that are in close proximity to on-street bicycle lanes and off-street paved trails:

- **Proximity to Bicycle Lanes** - Areas within 1/8 of a mile of an on-street bicycle lane.
- **Proximity to Paved Trails** - Areas within 1/8 of a mile of an off-street paved trail.

Accessible

Alexandria will work to make its transportation network easily accessible for users of all ages and abilities

In the context of the AMP, "Access" refers to the proximity of residents to alternatives to driving, which include high-frequency bus or rail service, bike lanes and trails, and connected sidewalks as defined on the previous page. Recognizing that everyone has access to a street to drive on, the City is measuring access this way to understand what choices people have close by.

Equity Lens:

- Percent of residents (low-income residents, people of color, seniors, and people with disabilities) in close proximity to alternatives to driving

Key Performance Indicator:

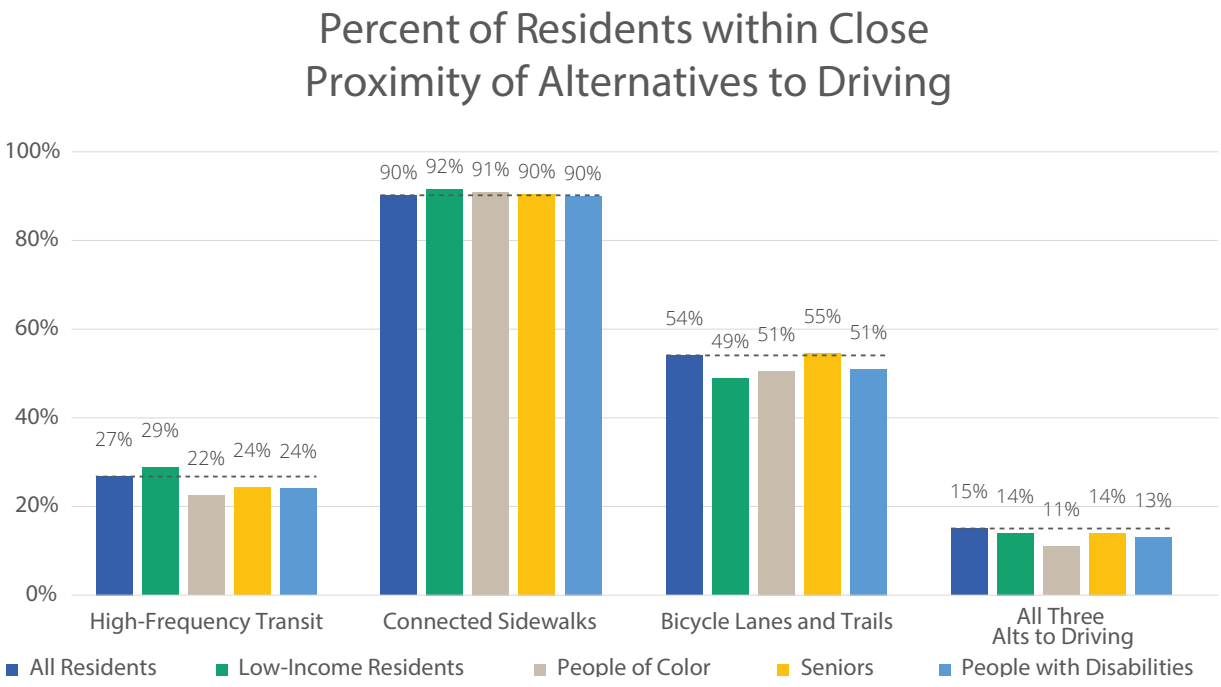
- Percent of residents in close proximity to alternatives to driving

Why measure "Proximity to Alternatives to Driving?"

Driving is a popular way to make many trips in Alexandria, and this will likely continue. A priority of the AMP is to give people choices. Every home has access to a street, but there are still many Alexandrians without nearby sidewalks, bike lanes and trails, or frequent transit, meaning they do not have the convenient choice to walk, bike, or take transit. Having choices benefits everyone, from cleaner air, healthier lifestyles, and less congestion. Having choices means that when gas prices rise or if there is a transit shutdown, people can still get around safely and conveniently.

This is what we call "Close Proximity to Alternatives" and this is why the following sections use it as an important metric: it measures high-quality, practical choices.

Baseline Information:



The City's investments in transit, such as the new Potomac Yard Metrorail station and implementation of the Alexandria Transit Vision Plan, will significantly increase the percentage of Alexandria residents in close proximity to high-frequency transit in the future. When implemented, the Transit Vision Plan will increase the percentage of all residents in close proximity to high-frequency transit from 27% to 83%.

Sources:
Baseline Transit Network (Midday): City data, 2021 (prior to Alexandria Transit Vision Plan implementation)
Baseline Pedestrian Network: City data, 2021
Baseline Bicycle Network: City data, 2021
All Residents: Total population counts from the 2017 American Community Survey (ACS) by Block Group.
Low-Income Residents: Total households identified in the 2017 ACS as being in poverty according to Federally defined poverty standards.
People of Color: Count of 2017 ACS estimates of people identifying as non-white.
Seniors: Count of 2017 ACS estimate of people over 65.
People with Disabilities: Count of 2017 ACS estimates

Connected

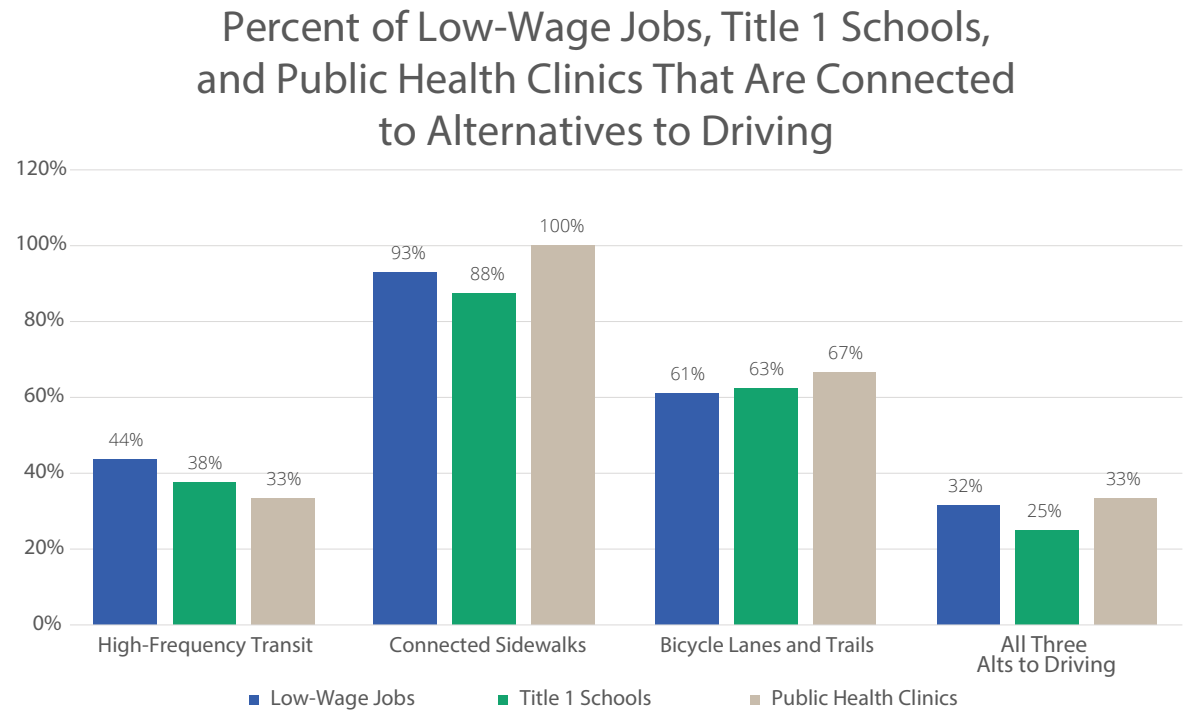
Alexandria's transportation system will take you where you want to go seamlessly by leveraging technology and integrating transportation and land use

"Destinations" are broadly defined as employment, opportunities, or services critical to quality of life and include jobs, schools, parks and recreation centers, grocery stores, and healthcare facilities. Alternatives to driving include high-frequency bus or rail service, bike lanes and trails, and connected sidewalks.

Equity Lens:

- Percent of low-wage jobs, Title 1 schools, and public health clinics that are connected to alternatives to driving

Baseline Information:

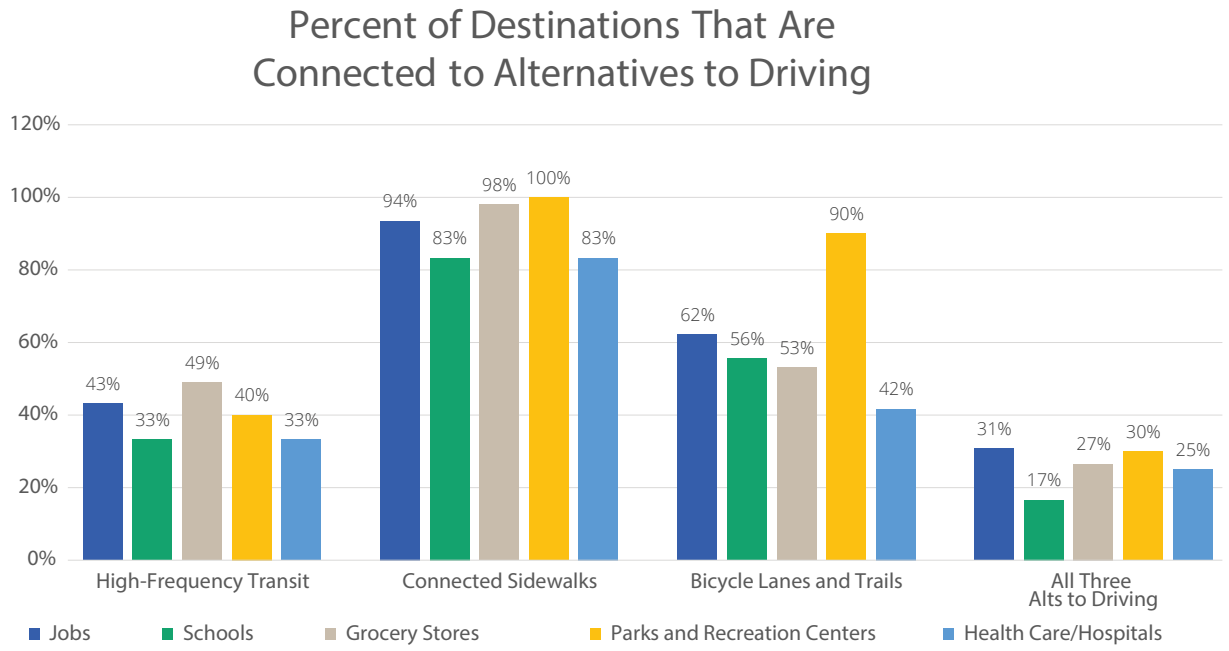


Sources:
Low-Wage Jobs: Count of Jobs in each Census Block Group paying less than $1,250 per month from the ACS Longitudinal Employer-Household Dynamics (LEHD) "OnTheMap" tool.
Title 1 Schools: Alexandria City Public Schools; data from the National Center for Education Statistics.
Public Health Centers: Clinic locations within the City of Alexandria taken from OpenStreetmap. (Search query: "amenity"="clinic" and "healthcare"="clinic").

Key Performance Indicator:

- Percent of destinations that are connected to alternatives to driving

Baseline Information:



Sources:
Jobs: Count of jobs in each Census Block Group taken from the 2017 ACS Longitudinal Employer-Household Dynamics (LEHD) "OnTheMap" tool.
Schools: Alexandria City Public Schools; data from the National Center for Education Statistics.
Grocery Stores: Grocery locations within Alexandria City Boundary, City of Alexandria, December 2020.
Parks and Recreation Centers: Parks and Recreation Locations with the Alexandria City Boundary, City of Alexandria, December 2020.
Health Care / Hospitals: Medical Facilities within Alexandria City Boundary, City of Alexandria, December 2020 (Facility types include Urgent Care, Health Care Facilities, and Hospitals).

Convenient

Alexandria will provide a transportation system with high-quality mobility options that are reliable, frequent, proximate, and comfortable.

Every year, Alexandrians can share feedback on their experiences with living in the city and factors that shape their quality of life, including transportation, via the Resident Survey. This helps City leadership know more about residents' expectations for the City government and how well government is performing for the community. The City will also be tracking this via specific metrics within the Transit, Smart Mobility, Streets, Curb Space and Parking, and Pedestrian and Bicycle chapters.

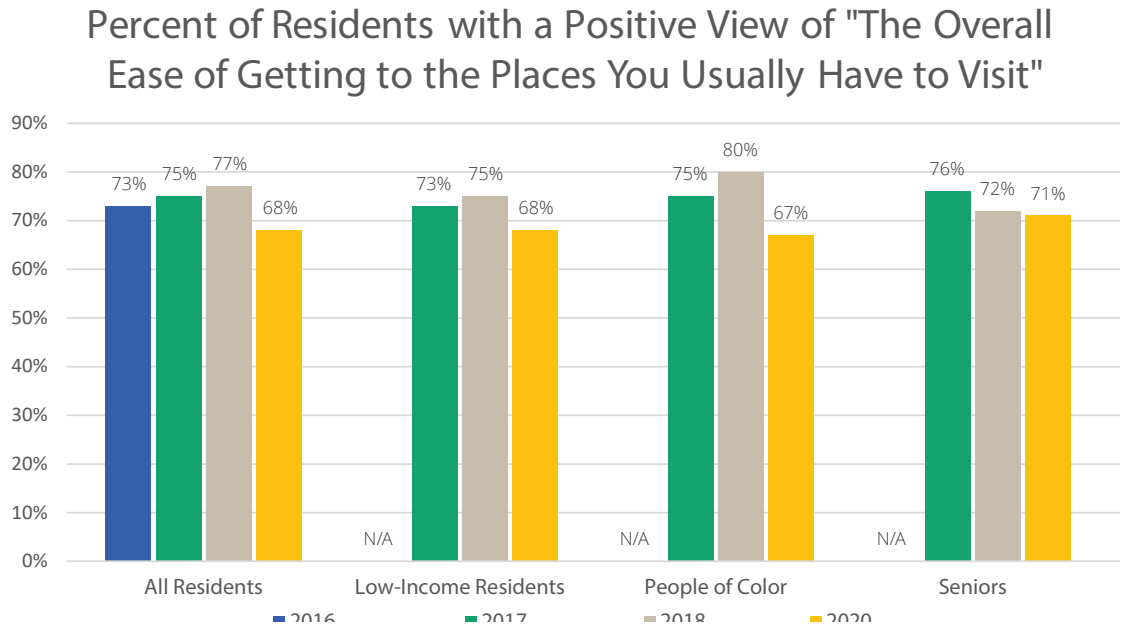
Equity Lens:

- Percent of residents (low-income residents, people of color, and senior residents) who say it is easy to get around.
  - **In 2018 and 2020, there was no statistically significant difference in responses between high income and low income individuals or between white and non-white individuals for overall ease of getting to the places they usually have to visit.**

Key Performance Indicator:

- Percent of residents who say it is easy to get around

Baseline Information:



Note: 2016 data by income, race/ethnicity, and age was not available.

Sources:
Alexandria Resident Survey
Low-Income Residents: Survey respondents with an annual household income Less than $50,000.
People of Color: Survey respondents that identify as non-white.
Seniors: Survey respondents over 55.

Equitable

Alexandria acknowledges that there are disparities in neighborhoods and populations in the City that have been historically underserved. Alexandria will be targeted, inclusive, and intentional in addressing gaps in mobility options available, their quality, and safety.

Key Performance Indicator:

- All guiding principles will be measured for the city as a whole and with an equity lens that examines how specific communities of greater need are faring with regards to the specific outcomes that this plan seeks to achieve.
  - **Accessible:** Percent of residents (low-income residents, people of color, seniors, and people with disabilities) in close proximity to alternatives to driving.
  - **Connected:** Percent of low-wage jobs, Title 1 schools, and public health clinics that are connected to alternatives to driving.
  - **Convenient:** Percent of residents (low-income residents, people of color, and senior residents) who say it is easy to get around.
  - **Safe:** Number of crashes, fatalities, and serious injuries within Equity Emphasis Areas.
  - **Sustainable:** Percent of residents (low-income residents, people of color, seniors, and people with disabilities) in close proximity to alternatives to driving.

Safe

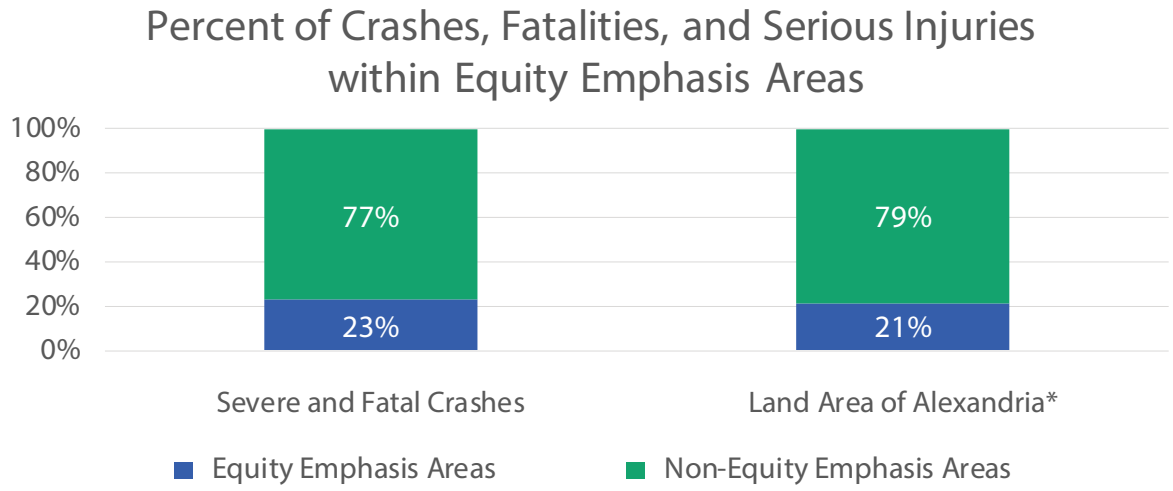
Alexandria will eliminate all traffic deaths and serious injuries by 2028.

Through its Vision Zero Action Plan, Alexandria established a goal of zero traffic deaths and serious injuries by 2028. The City recognizes that traffic deaths and serious injuries are preventable through proper engineering, enforcement, evaluation, and education. The Vision Zero performance dashboard tracks how well the City is performing as part of the overall performance dashboard system.

Equity Lens:

- Number of crashes, fatalities, and serious injuries within Equity Emphasis Areas

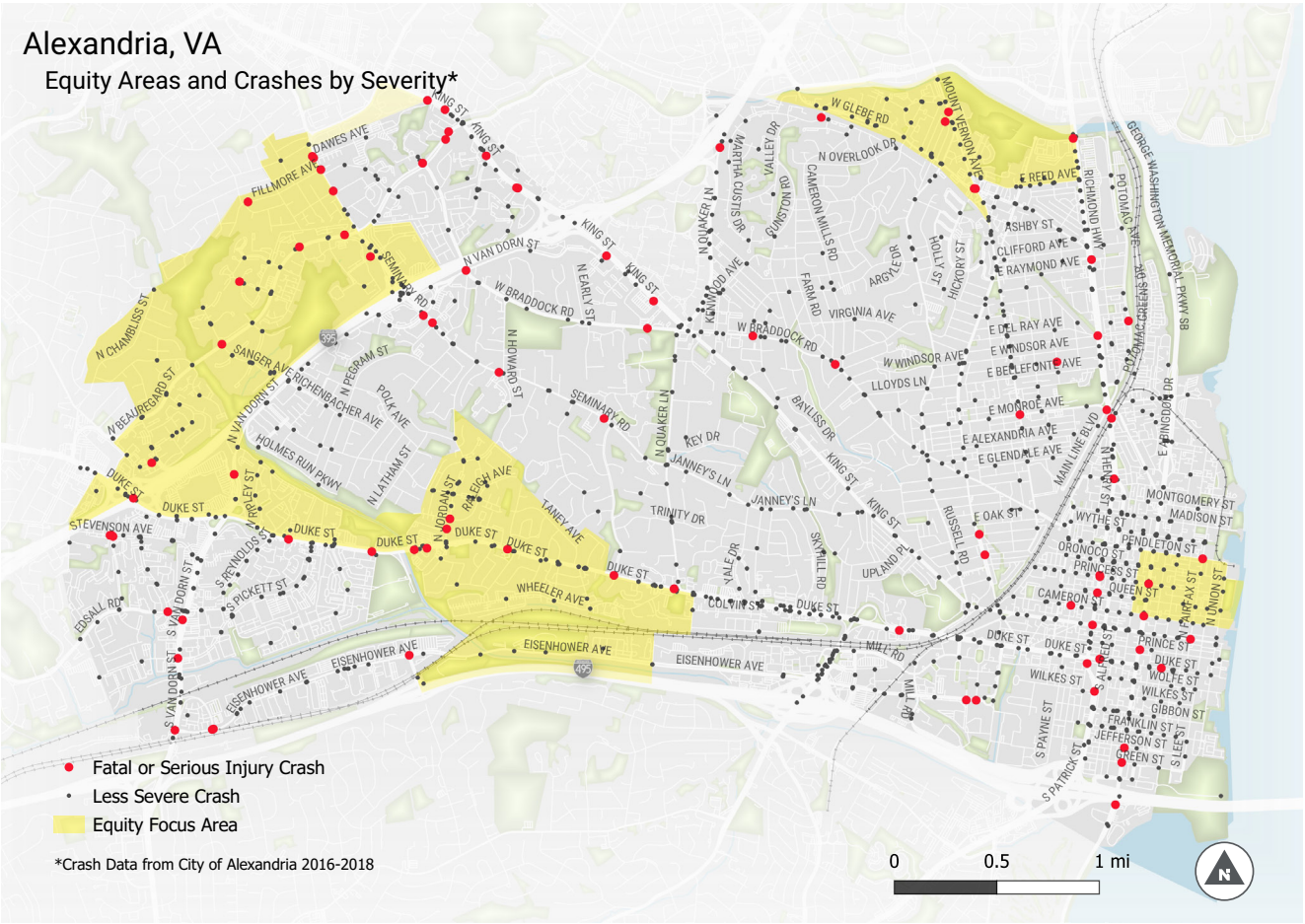
Baseline Information:



*For the equity lens of the Safe KPI, the City is measuring against land area of Equity Emphasis Areas, as demographic information is not typically documented in crash reports. The Metropolitan Washington Council of Governments (MWCOG) established Equity Emphasis Areas in Alexandria, which make up 21 percent of the city's total land area. The percentage of all severe and fatal crashes in Alexandria that occur within these Equity Emphasis Areas, however, is slightly overrepresented at 23 percent. It is important to consider land area to ensure that communities of greater need do not experience disproportionate effects of traffic crashes compared to other areas of the city.

Safe (continued)

Equity Emphasis Areas and Crashes by Severity



Equity Emphasis Areas were developed by the Metropolitan Washington Council of Governments (MWCOG) using tract-level Census data to identify communities that have significant concentrations of low-income and/or minority populations.This is what we call "Close Proximity to Alternatives" and this is why the following sections use it as an important metric: it measures high-quality, practical choices.

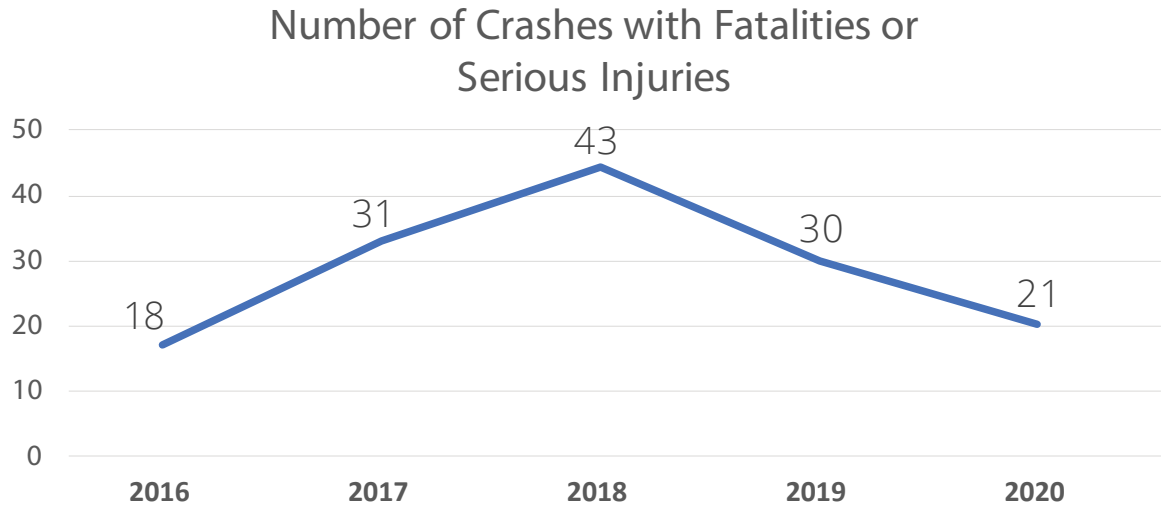
Sources:
Equity Emphasis Areas: Metropolitan Washington Council of Governments (MWCOG). Includes areas with concentrations of low-income and minority households.
Crashes: 2016-2019 crash locations, City of Alexandria, Virginia Department of Transportation
City Strategic Plan Key Indicators: Transportation, City of Alexandria.
Vision Zero Performance Dashboard, City of Alexandria.

Key Performance Indicator:

- Number of crashes, fatalities, and serious injuries

This KPI is consistent with the City Strategic Plan and Vision Zero initiative, which aims to achieve zero severe injuries and fatalities from crashes.

Baseline Information:



Sustainable

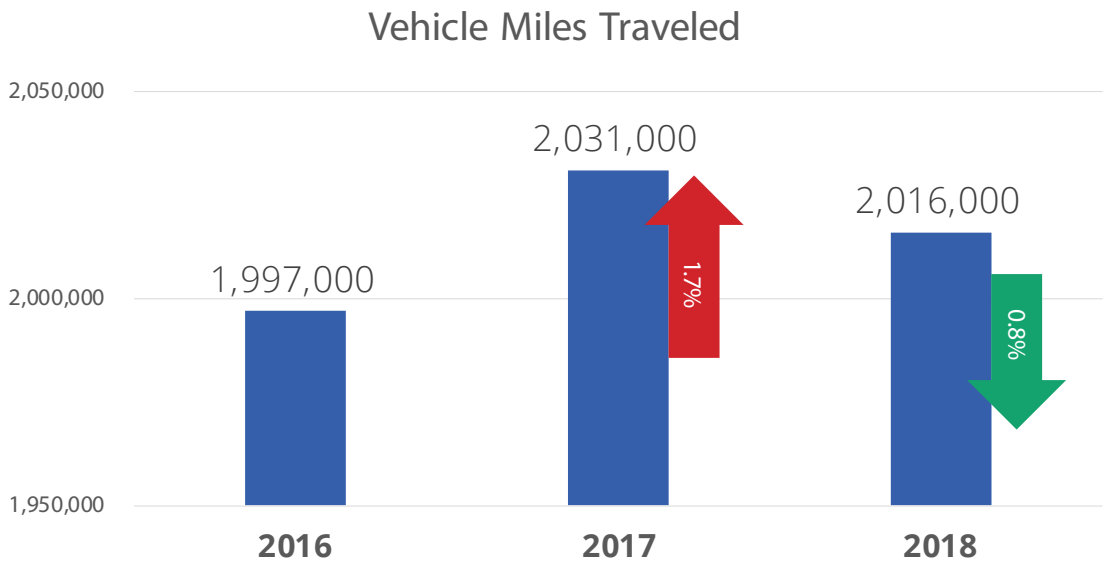
Alexandria will prioritize low-carbon mobility options and reduce automobile dependency.

Through its Environmental Action Plan, Alexandria recognized that transportation is a leading contributor to greenhouse gas emissions that adversely affect the natural environment and established goals and targets to reduce these effects.

Key Performance Indicator:

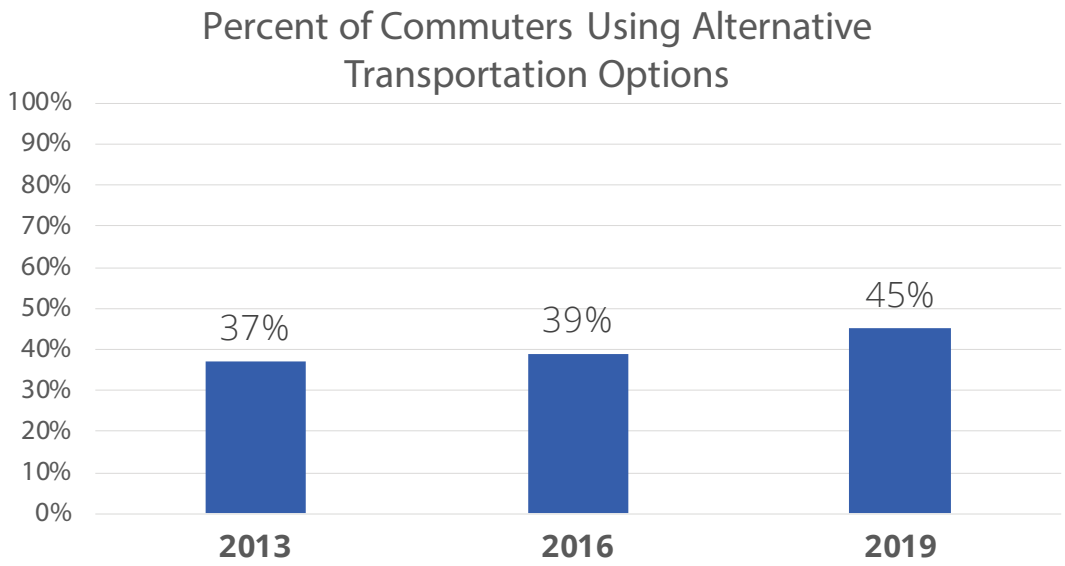
- Vehicle miles traveled
- Percent of commuters using alternative transportation options

Baseline Information:



Source: Weekday Vehicle Miles Traveled (VMT), National Capital Region Transportation Planning Board

Alternative transportation options include riding the bus, Metrorail, and biking. This KPI is consistent with the City Strategic Plan, which set a target of 40% of commuters using alternative transportation modes by 2022. Data is reported every three years by fiscal year (July-June), and comes from the Metropolitan Washington Council of Government's (MWCOG) State of the Commute Survey.

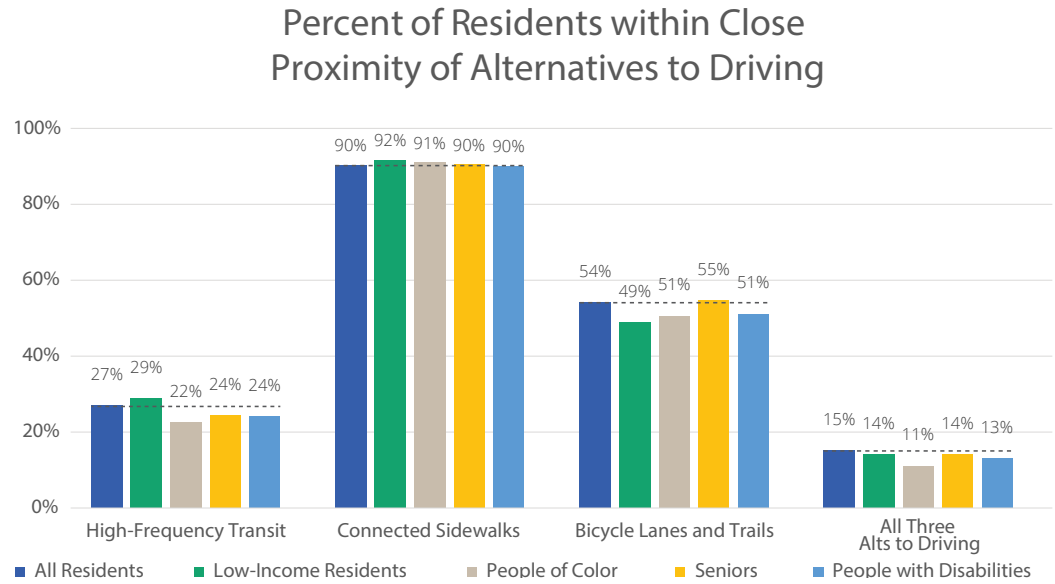


Source: City Strategic Plan Key Indicators: Transportation (via MWCOG State of the Commute Survey)

Equity Lens:

- Percent of residents (low-income residents, people of color, seniors, and people with disabilities) in close proximity to alternatives to driving

Baseline Information:



Source: See "Accessible" KPI in previous section

The City will continue to investigate better data sources for tracking the Sustainability indicator through an equity lens. Until a better data source becomes available, the City will refer to the Accessible indicator to improve access to multiple transportation choices for all population groups.

Chapter Metrics

The plan's metrics are tied to each specific plan chapter and are more focused on individual topics or modes of transportation. These metrics will be regularly measured to track how the plan's policies and strategies are improving transportation in the city. Many chapter-specific metrics are related to and will feed into the plan-level KPIs. Targets have also been established where applicable to promote accountability, many of which are identified in other City plans or planning efforts.

Metric	Directionality
Transit	
Percent of residents within ¼ mile of 15 minute or better service (All residents and low-income, people of color, and senior residents)	↑
Percent of people taking transit to work (mode share)	↑
Positive rating of ease of travel by public transportation (Resident Survey*)	↑
Percent of bus stops with shelters	↑
Percent of bus stops that are accessible for persons with disabilities	↑
Smart Mobility	
Number of intersections with smart signal technology	↑
Percent of intersections with smart signal technology in Equity Emphasis Areas	↑
Positive rating of traffic flow on major streets (Resident Survey*)	↑
Transit travel times on Duke Street, Van Dorn Street, and upper King Street	↓
Streets	
Number of fatal and serious crashes	↓
Average Pavement Condition Rating (Pavement Condition Index)	↑
Percent of Transportation Management Plans evaluated that meet mode split targets	↑

Metric	Directionality
Pedestrian and Bicycle	
Number of pedestrian- and bicycle-involved crashes	↓
Percentage of people walking or biking to work (mode share)	↑
Linear feet of new sidewalk installed per year (Citywide and in Equity Emphasis Areas)	–
Miles of bike facilities (on-street and paved off-street trails) installed per year (Citywide and in Equity Emphasis Areas)	–
Positive rating of ease of walking (Resident Survey*)	↑
Positive rating of ease of travel by bicycle (Resident Survey*)	↑
Number of repaired curb ramps per year	–
Number of accessible pedestrian signals installed per year	–
Annual number of bikeshare trips	↑
Number of accessible pedestrian signals	↑
Shared mobility trips to and from equity areas (as defined by the Dockless Mobility Program)	↑

↑ Increase ↓ Decrease – Maintain

*The Alexandria Resident Survey reports results based on race/ethnicity, income, and age in addition to all residents.

Metric	Directionality
Supporting Travel Options	
Number of community influencers involved with GO Alex	↑
Percent of people taking non-single occupancy vehicles to work (mode share)	↑
Weekday person hours of delay	↓
Curb Space and Parking	
Number of curb space changes informed by the Curbspace Prioritization Framework introduced to the Traffic and Parking Board	↑
Positive rating of ease of public parking (Resident Survey*)	↑
Positive rating of availability of parking near my home	↑
Positive rating of availability of on-street and garage parking near shopping	↑
Number of publicly accessible level 2 or higher electric vehicle charging plugs per population	↑

↑ Increase ↓ Decrease — Maintain

*The Alexandria Resident Survey reports results based on race/ethnicity, income, and age in addition to all residents.

Metric	Equity Lens	Connection to KPI	Related Plan	Source	Related Strategies	Directionality	Baseline	Targets (if applicable) 2024	2027	2030
Transit										
Percent of residents within ¼ mile of 15 minute or better service (All residents and low-income, people of color, and senior residents)		✓	Transit Vision Plan	City data, Census Data	1, 6	Increase	All Residents: 27% (2019) Low-Income Residents: 29% (2019) People of Color: 22% (2019) Senior Residents: 24% (2019) People with Disabilities: 24% (2019)	60% 65% 65% 50% 50%	70% 75% 75% 60% 60%	85% 90% 90% 75% 75%
Percent of people taking transit to work (mode share)		✓	Environmental Action Plan 2040	MWCOG 2017-2018 Regional Travel Survey Update	1, 3	Increase	Bus: 6.9% (2017-2018) Rail: 32.3% (2017-2018)	7% 25%	9% 30%	12% 31%
Positive rating of ease of travel by public transportation	✓	✓		Resident Survey	1, 2, 3, 5, 6, 7	Increase	All Residents: 61% (2020) / 64% (2018) Low-Income Residents: 68% (2020) People of Color: 60% (2020) Seniors: 70% (2020)			
Percent of bus stops with shelters				City data	4	Increase	13% (2020)	20%	25%	30%
Percent of bus stops that are accessible for persons with disabilities	✓					Increase	Baseline and targets to be developed by 2022	20%	25%	30%

Metric	Equity Lens	Connection to KPI	Related Plan	Source	Related Strategies	Directionality	Baseline	Targets (if applicable) 2024	2027	2030
Smart Mobility										
Number of intersections with smart signal technology			Smart Mobility Framework Plan	City inventory data	1, 2, 3, 4	Increase	Transit Signal Priority: 28 Emergency Vehicle Preemption: 11 Activated Adaptive Signals: 0	50 TBD 40	TBD TBD 100	TBD TBD 100
Percent of intersections with smart signal technology in Equity Emphasis Areas	✓			City inventory data, Equity Emphasis Area data	1, 2, 3, 4	Increase	Number of All Signals in Equity Emphasis Areas: 57 out of 368 (15%) Equity Emphasis Areas by % of City Land Area: 21% Transit Signal Priority: 7 out of 28 (25%) Emergency Vehicle Preemption: 4 out of 11 (36%) Activated Adaptive Signals: 0 out of 0	30% TBD 40%	TBD TBD TBD	TBD TBD TBD
Positive rating of traffic flow on major streets	✓			Resident Survey	1, 3	Increase	All Residents: 34% (2020) Low-Income Residents: 41% (2020) People of Color: 38% (2020) Seniors: 36% (2020)			
Transit travel times on Duke Street, Van Dorn Street, and upper King Street				StreetLight Data	1,3	Decrease	Baseline and targets to be developed by 2022 after introduction of the New DASH Network	TBD	TBD	TBD

Metric	Equity Lens	Connection to KPI	Related Plan	Source	Related Strategies	Directionality	Baseline	Targets (if applicable) 2024	2027	2030
Streets										
Number of fatal and serious crashes	✓	✓		Virginia Traffic Records Electronic Data System (TREDS)	1,4, 5	↓ Decrease	30 (2019)			0 (2028)
Average Pavement Condition Rating (Pavement Condition Index)				Alexandria Performance Dashboard: City Strategic Plan Transportation Theme Key Indicator Dashboard	2, 3, 6	↑ Increase	55 out of 100 (fair) (2019)	71 out of 100 (satisfactory)		
Percent of Transportation Management Plans evaluated that meet mode split targets				City data	2	↑ Increase	N/A (Mode split targets not yet established) Baseline to be developed	Determine method for measuring by 2024		

Metric	Equity Lens	Connection to KPI	Related Plan	Source	Related Strategies	Directionality	Baseline	Targets (if applicable) 2024	2027	2030
Pedestrian and Bicycle										
Number of pedestrian- and bicycle-involved crashes		✓	Strategic Plan Vision Zero	Virginia Traffic Records Electronic Data System (TREDS)	1, 5	Decrease	Pedestrian-involved crashes: 54 (2020) Bicycle-involved crashes: 15 (2020)			
Percentage of people walking or biking to work (mode share)		✓	Environmental Action Plan 2040	MWCOG 2017-2018 Regional Travel Survey Update	1	Increase	Walking Mode Share: 5.0% (2017-2018) Biking Mode Share: 3.8% (2017-2018)	5.5% 4.5%	6.0% 5.0%	6.5% 5.5%
Linear feet of new sidewalk installed per year (Citywide and in Equity Emphasis Areas)				City inventory data	2, 4	Maintain	Linear feet of new sidewalk installed per year: 2,250 linear feet (Average between 2016 and 2020) Equity Emphasis Areas by % of City Land Area: 21%	2,250 linear feet per year (60% in Equity Emphasis Areas)		
Miles of bike facilities (on-street and paved off-street trails) installed per year (Citywide and in Equity Emphasis Areas)			Environmental Action Plan 2040	City inventory data	3, 4	Maintain	On-Street Facilities (Existing): 38.2 lane miles (2021) Off-Street Trails (Existing): 22.8 miles (2021) Equity Emphasis Areas by % of City Land Area: 21%	3 miles per year (60% in Equity Emphasis Areas)		
Positive rating of ease of walking	✓			Resident Survey	1, 2, 4	Increase	All Residents: 77% (2020) Low-Income Residents: 64% (2020) People of Color: 74% (2020) Seniors: 76% (2020)			
Positive rating of ease of travel by bicycle	✓			Resident Survey	1, 3, 4	Increase	All Residents: 64% (2020) Low-Income Residents: 50% (2020) People of Color: 60% (2020) Seniors: 59% (2020)			
Number of repaired curb ramps per year				City inventory data	1,2,4	Maintain	300 (Fiscal Year 2021)	300 per year		
Number of accessible pedestrian signals installed per year				City inventory data	1,2,4	Maintain	Baseline to be developed	8 per year		
Annual number of bikeshare trips				Data from mircromobility providers, City data, Census data	1	Increase	77,000 (2019) 54,000 (2020)	80,000	90,000	100,000
Shared mobility trips to and from equity areas (as defined by the Dockless Mobility Program)				City inventory data	1, 3, 4	Increase	Baseline to be developed	By 2022, develop targets for 2024, 2027, 2030		
Number of designated parking areas for bicycles, e-bikes, and scooters citywide and in equity areas (as defined by the Dockless Mobility Program)				City inventory data	1, 3, 4	Increase	Baseline to be developed			

Metric	Equity Lens	Connection to KPI	Related Plan	Source	Related Strategies	Directionality	Baseline	Targets (if applicable) 2024	2027	2030
Supporting Travel Options										
Number of community influencers involved with GO Alex				Data accumulated as partnerships formed	1	↑ Increase	Employers: 133 (Fiscal Year 2020) Other community influencers: N/A	150	180	200
Percent of people taking non-single occupancy vehicles to work (mode share)		✓	Environmental Action Plan 2040	MWCOG 2017-2018 Regional Travel Survey Update	1	↑ Increase	54% (2018)	52%	60.5%	66%
Weekday person hours of delay				Regional Integrated Transportation Information System (RITIS)	2, 3	↓ Decrease	4,720 hours (2019) * * To be calibrated to include transit by 2022 after introduction of the New DASH Network	4,696 hours (-0.5%)	4,673 hours (-0.5%)	4,650 hours (-0.5%)

Metric	Equity Lens	Connection to KPI	Related Plan	Source	Related Strategies	Directionality	Baseline	Targets (if applicable) 2024	2027	2030
Curb Space and Parking										
Number of curb space changes informed by the Curbspace Prioritization Framework introduced to the Traffic and Parking Board				City inventory data	1, 3	↑ Increase	N/A			
Positive rating of ease of public parking	✓			Resident Survey	1, 2, 4	↑ Increase	All Residents: 31% (2020) / 38% (2018) Low-Income Residents: 38% (2020) People of Color: 31% (2020) Seniors: 24% (2020)			
Positive rating of availability of parking near my home				Resident Survey	1, 2, 4	↑ Increase	All Residents: 58% (2020) Low-Income Residents: 45% (2020) People of Color: 52% (2020) Seniors: 57% (2020)			
Positive rating of availability of on-street and garage parking near shopping				Resident Survey	1, 2, 4	↑ Increase	All Residents: 52% Low-Income Residents: 48% People of Color: 52% Seniors: 45%			
Number of publicly accessible level 2 or higher electric vehicle charging plugs per population				City inventory data	4	↑ Increase	3.8 plugs per 10,000 people	7 plugs per 10,000 people	12.8 plugs per 10,000 people	23.5 plugs per 10,000 people