CEAP Implementation Plan

Urban, Land Use + Transportation

**Relationship to CEAP Goals and Policies:**

URBAN FORM, LAND USE & TRANSPORTATION

Goal • Reduce community and City employee vehicle miles traveled and greenhouse gas emissions.

Strategy ULT-2. Make Ashland more bike- and pedestrian-friendly.

ULT-2-2. Explore opportunities to convert to shared streets where appropriate to provide multimodal connectivity.

ULT-4-2. Revise community development plans to favor walkable neighborhoods and infill density.

CONSUMPTION & MATERIALS MANAGEMENT

Goal - Reduce consumption of climate- intensive food, products, and services.

Strategy CM-1. Reduce consumption of carbon-intensive goods and services.

**Status and Next Steps**

The attached Urban, Land Use + Transportation CEAP (update) implementation plan provides background information on land use, public transit, the fossil fueled fleet, and street design. It also includes goals and policies that are measurable and actionable, respectively. Finally, the document includes a listing of implementation strategies, timeframes, and, where known, an estimate of the $CO_2$ benefit associated with their implementation.

The attached document is identical to the one that was distributed to the CPC on March 22nd except:

1) Additional implementation strategies have been added to the Land Use and Transportation Efficiency chapter**,** Section 6, page 17 of the report. These changes reflect implementation strategies designed to improve the efficiency of the city's overall land use pattern. The new strategies, themselves, were extracted from the city's "Housing Strategy," one of several documents prepared by ECO Northwest, a consulting firm, under contract with the city, to update the housing needs analysis. The additions are shown in RED.
2) A new appendix, Appendix E - Frequently Asked Questions, has also been added.

I would strongly encourage you to review the new materials, as detailed above.

**CPC Recommended Action**

I'd suggest that you study the goals and policies. Are they strong enough or are they too aggressive? Will they help to ensure that the city achieves net zero by 2050? Are there other goals or policies that are needed?

Whether we call the document we are working on a "CEAP Update" or "CEAP Implementation Plan", we'll need to engage the community in a fairly extensive public involvement process. It would be premature to start that process now. However, seeking input from the city's Transportation Commission (and staff) and the Conservation and Climate Commission (and staff) would serve to engage some very knowledgeable people and provide a broader basis of review. Their input could help to inform the CPC moving forward.

Suggested Motion:

I move that CPC officially solicit input from members of the Transportation Commission and Conservation and Climate Outreach Commission (and other city Commissions or other agencies: ODOT, Jackson County, or RVTD as the CPC may see fit). The request should ask each member to provide his/her/they own comments and recommendations and set April 26th as the due date.

The April 26 due date will allow the commission members comments to be included in the CPC's May 13th meeting packet.

- Urban, Land Use + Transportation –

**Description**

Ashland residents' transportation choices account for 27 percent of Ashland's 300 metric tons per year of greenhouse gas emissions (GHG) emissions (17% in on-road travel and another 10 percent attributable to vehicle manufacturing). It will be impossible for the city to achieve the Climate and Energy Action Plan's (CEAP) net-zero 2050 target without dramatic changes in the transportation system and residents' use thereof.

There are four basic barriers to achieving significant GHG emission reductions from the transportation sector. These include:

- Ashland's largely homogeneous, auto-centric land use pattern (Section 1)
- Limited effectiveness of public transit services due to the preponderance of low-density residential development (Section 2)
- Residents' almost exclusive reliance on fossil fuel powered vehicles (Section 3)
- Auto-centered (mono-modal) transportation system design of streets and highways (Section 4)

Each of these are fixed, capital investments that will require time and considerable investment to change. Only the transportation system can be modified in the short-term and, in contrast to the others, is owned and controlled exclusively by State and local governments.

Redesigning the transportation system to make streets safe for people walking and bicycling (as safe as they currently are for motor vehicle drivers) can dramatically reduce dependence upon motor vehicles. Shifts in mode choice among Ashland residents--choosing to walk or bicycle rather than drive--can reduce transportation emissions by up to 40 percent.

Each of the challenges are addressed in greater detail in the sections below.

**Section 1. Land Use**

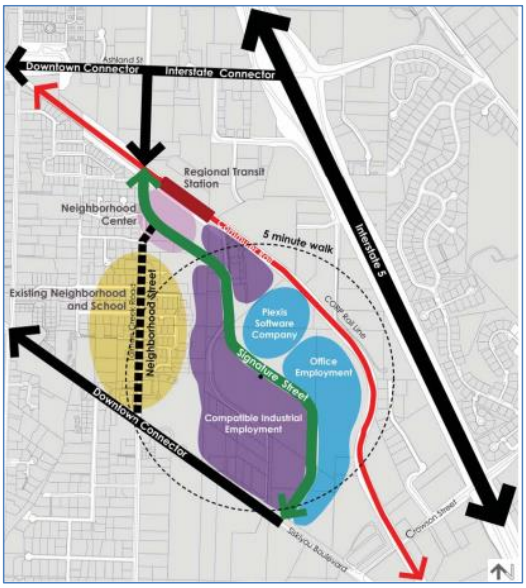
Goal: Concentrate future commercial and high-density residential development within areas adjacent to RVTD's High-Capacity Transit route (Figure 3) and require all new residential development to be in neighborhoods where shopping, employment, parks and housing are in close proximity and are served by pedestrian and bicycle networks that are safe, convenient, and minimize out-of-direction travel.

The existing land use pattern had its start when the first non-native American settlers arrived in 1852. With the invention of the automobile more than a century ago, land use patterns in Ashland (and throughout the west) have been aligned with auto use. That outcome can be slowly changed given enough time and adherence to the City's Comprehensive Land Use Plan.

The City's Comprehensive Plan identifies two transit-oriented development (TOD) nodes; the Transit Triangle and the Croman Mill site. The Transit Triangle includes the area formed by the area within (and adjacent to) Tolman Creek Road, Siskiyou Boulevard and Highway 66. Croman Mill site is planned to feature a large employment component, high-density residential, and a [transit] station site for future bus rapid transit…"(RVTD 2040 Transit Plan, page 29)

The City established development standards for the Croman Mill Site in 2010. Section 18.53 of the Development Code is designed to implement the Croman Mill Site Redevelopment Plan. "The Croman Mill Site Redevelopment Plan provides guidance for the development of a vital and viable employment hub within the study area. This is a practical, proactive plan that creates a unique identity based on existing community assets. The plan extends the boulevard street design of Ashland Street and Siskiyou Boulevard through the site, enhances adjacent neighborhoods, preserves safe access to Bellview School and maximizes the value of the site's proximity to the I-5 corridor, downtown and Southern Oregon University." (ibid, p. 12)

Figure 1. Fundamental Concept – Croman Mill Site




Source: Croman Mill Site Redevelopment Plan, https://www.ashland.or.us/files/CromanMill_Ord3030_ExhibitA.pdf

The Ashland Transit Triangle, unlike the Croman Mill Site, relies upon redevelopment of existing uses rather than development of largely vacant land.

In 2018 the City adopted the Transit Triangle Overlay zone, Development Code, Chapter 18.3.14, Transit Triangle Overlay. The “overlay is intended to promote the development of a mix of housing units and businesses adjacent to the bus route designed in a way that encourages walking, bicycling and transit use” (ibid) and applies to the area shown in Figure 2.

Figure 2. Transit Overlay Zone


Source: Development Code, Chapter 18.3.14

**Conclusion:**

It’s critical to create a transportation-efficient development pattern with high-density residential housing adjacent to or within convenient walking distance of commercial development. These areas must also be served by frequent fixed-route public transit services. Transportation efficient land use patterns are essential to the City’s future. Ashland’s slow population growth rate, however, at less than one percent per year, makes the city’s existing pattern of land use largely fixed (see Table 1). Consequently the changes described earlier, taken in the context of the City as whole, will not have an appreciable impact in the short term (between now and 2050), on reducing existing citywide GHG emissions.

Table 1

Population Allocation and Projected Growth Rates for Ashland, 2005 - 2040

| | | | | Change 2005 to 2026 | | | Change 2005 to 2040 | | |
|---|---|---|---|---|---|---|---|---|---|
| | 2005 Pop. | 2026 Pop. | 2040 Pop. | Difference | Percent change | AAGR | Difference | Percent change | AAGR |
| Ashland | 20,880 | 22,319 | 23,056 | 1,439 | 7% | 0.32% | 2,176 | 10% | 0.28% |

Source: Jackson County Comprehensive Plan, Population Element, p. 18-14

However, such designs and land use patterns can ensure that Ashland GHG emissions are not made worse by future growth.

**Section 2. Public Transit**

Goal: Improve the effectiveness of public transit and increase transit mode share: doubling transit mode share in the city between 2020 and 2035 and doubling again by 2050.

Rogue Valley Transit District's (RVTD) 2040 Transit Plan provides many insights into the potential for public transit services to help reduce the transportation sector's GHG emissions in the future. Table 2 provides an overview of the current system and as it forecast to be in 2042, as well as the preferred system of services in 2027, 2037, and 2042.

Table 2 RVTD System Performance Characteristics

| Criteria | Current System | | Preferred System | | |
|---|---|---|---|---|---|
| | 2018 | 2042 | 2027 (Short-term projects) | 2037 (Mid-term projects) | 2042 (Long-term projects) |
| Ridership for System[1] | 1,240,876[4] | 1,519,603 | 1,922,567 | 4,586,512 | 6,268,443 |
| MPO Population[1] | 175,493 | 230,429 | 192,865 | 216,511 | 230,429 |
| Rides per Capita[1] | 7.1 | 6.6 | 10.0 | 21.2 | 27.2 |
| Transit Mode Share[2] | 0.5% | - | 0.9% | - | 1.5% |
| Operating Revenue | $14,263,734[5] | - | 16,949,214[6] | 25,765,192[7] | 29,256,579[8] |

1 Data from TBEST
2 Data from JEMnR. No model output available for the 2037 mid-term preferred system.
4 Reported ridership data for 2018
5 2019 – 2020 budget year
6 2026 – 2027 budget year
7 2034 – 2035 budget year
8 2039 – 2040 budget year

On a system-wide basis, RVTD's transit mode share is estimated at 0.5% and would logically change little from the current one-half of one-percent mode share in 2042 (although that is not shown in the above table). In contrast, the preferred system's transit mode share would triple between now and 2042 and account for 1.5% of all travel.

The Transit Plan reveals the potential for more significant impacts within the Highway 99 corridor. The Plan forecasts that ridership in 2040 on Highway 99, north of Jackson Road could capture 12.8% transit mode share at that location, compared to just five percent on

the existing routes in 2018. Underlying the forecast is the assumption that the preferred "high-capacity transit" route will include 10-minute headways with ¼ mile stop frequencies every day of the week along the 31.5-mile route between Medford and Ashland while maintaining 126-minute round trip travel time (RVTD Transit Plan, p. 109). Actualizing the route would require capital (bus) purchases of about $9.4 million with annual operation/maintenance totaling $4.9 million. The Plan also notes that the "high-capacity transit" route, in order to achieve the round-trip travel time, would require "significant capital and infrastructure improvements" on Highway 99. The Plan doesn't identify these improvements or estimate their cost. It should be noted that current travel times between RVTD's Front Street Station and Bi-mart, in Ashland, on RVTD's route 10, which also uses Highway 99 and Interstate 5, is 58 minutes with the return trip running 51 minutes.

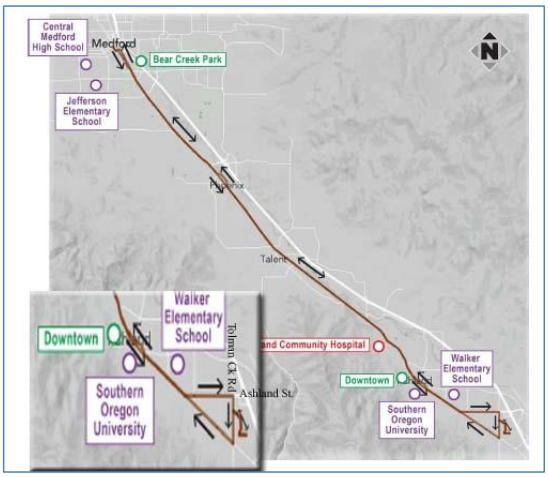
The 2040 Plan summarizes changes to routes serving Ashland:

- The long-term plan would discontinue the existing express and standard routes in (to) Ashland (Route 10X and Route 10) from Medford with a "high-capacity transit" route along Highway 99 (as described earlier).
- The Plan proposes to add a community circulator route connecting the YMCA area to downtown using E. Main and Hershey with 20- to 40-minute headways.

In 2019 RVTD initiated the Ashland Connector, an on-demand, micro-transit, ride-sharing service that operates within the city limits. Vehicle routing is dynamic and reflects each passenger's unique travel needs. Rides are booked through the Rogue Valley Connector app.

Figure 3 illustrates how the proposed RVTD High-Capacity Transit (HCT) route is aligned to serve Ashland's transit-oriented developments. The 2040 Plan identifies the HCT route in the preferred long-term plan but does not establish a start date.

Figure 3. High-Capacity Transit Route



Conclusion:
High frequency, high-capacity transit services compliment the city's planned transportation efficient land use plans. RVTD's HCT route would serve almost all the major destinations in the city. Serving the balance of the city could be achieved by a complimentary small fleet of autonomous, electric vehicles which would shuttle passengers between their homes and destinations within the City, as well as serving as feeder service for the "high-capacity transit" route (similar to the what the Ashland Connector does now).

**Section 3. Fossil-Fueled Fleet**

Goal: Reduce reliance upon motorized vehicles and make it more practical to live in Ashland without owning a motor vehicle.

Ashland residents largely rely upon fossil-fueled cars for all their transportation needs due in part to their reliability and useful life. A motor vehicle has an average useful life of 200,000 miles or 20 years if driven 10,000 miles per year. It is likely internal combustion engines (ICE) powered automobiles will account for a significant portion (perhaps half) of the vehicles on the roads in 2050. Looked at from a more positive perspective, roughly half of all light duty motor vehicles will be powered by electricity, compared to only three percent today.

There are numerous challenges to electrifying the existing ICE fleet owned by the city's residents. Some of the major barriers include:

- Lack of confidence in EV's technology
- Range anxiety and the limited extent of the EV charging network
- High cost of EV's
- Consumer anxiety about the training and knowledge of EV repair personnel
- Limitations of existing EV model choices

These among many others are outlined in Pacific Power and Light's Transportation Electrification Plan.

As of the end of 2020, Ashland residents owned 700 EV's which represented approximately 3.4 percent of all vehicles registered in Ashland. It is forecast that by 2030 EV's will represent just 27 percent of all U.S. car sales (https://www2.deloitte.com/us/en/insights/focus/future-of-mobility/electric-vehicle-trends-2030.html) and "could reach up to 75% by 2050 in the event of high oil prices or strong technology cost declines." (https://www.forbes.com/sites/energyinnovation/2017/09/14/the-future-of-electric-vehicles-in-the-u-s-part-1-65-75-new-light-duty-vehicle-sales-by-2050/?sh=5ec81831e289)

If these forecasts are accurate and new car sales (as a percentage of all cars on the road) continue to account for a little over five percent of the total fleet, fossil fueled vehicles could still represent the majority of the light duty vehicles in Ashland in 2050. (source: https://www.nytimes.com/interactive/2021/03/10/climate/electric-vehicle-fleet-turnover.html)

A “study by engineers at the University of Toronto concludes that 90% of light-duty cars on American roads would need to be electric by 2050 to keep the transportation sector in line with Paris Agreement climate mitigation targets. If California’s 2035 prohibition on the sale of ICE vehicles were “adopted and implemented nationally, 350 million electric cars would ply the roads in 2050. Those would fuel up using the equivalent of 41% of the nation’s total power demand in 2018, creating challenges for the grid, in addition to requiring ‘excessive amounts’ of critical minerals like lithium and cobalt.” Source: https://www.scientificamerican.com/article/ninety-percent-of-u-s-cars-must-be-electric-by-2050-to-meet-climate-goals/

“We need to deploy electric vehicles. But we also need to be realistic that they’re probably not sufficient on their own,” said lead author Alexandre Milovanoff, an energy and sustainability researcher at the University of Toronto.

“Instead of focusing exclusively on switching from gas cars to battery-electrics or fuel-cell vehicles, he said, policymakers should simultaneously aim to reduce the public’s dependence on personal cars.” (Ibid).

Shifting Ashland residents’ dependence from autos to human powered modes of travel is integral to reducing emissions from the transportation sector. It is clear from a review of the emissions by kilometer for various vehicles, as illustrated in Figure 4, by choosing to walk or bicycle, residents can dramatically reduce $CO_2$ emissions.

Figure 4.

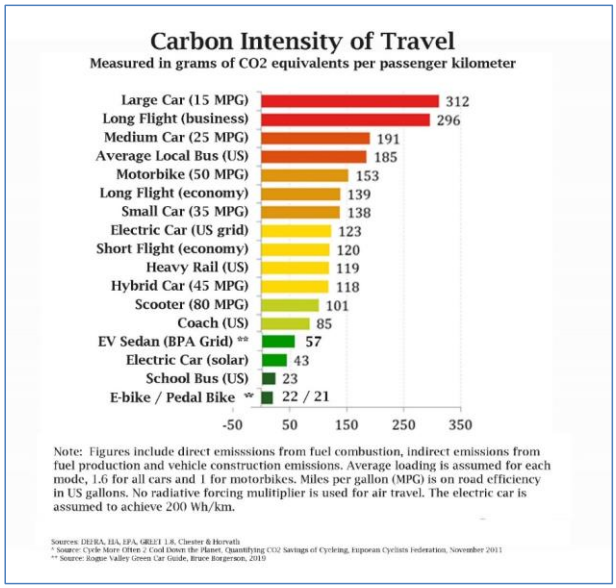


Figure 4 accounts for both direct and indirect emissions. The chart takes that to the extreme by including the hypothetical additional calories that are consumed by people riding bicycles.

Embedded $CO_2e$ emissions, (associated emissions with manufacturing vehicles), accounts for between 23 and 46 percent of lifecycle emissions depending upon the vehicle power train. The embedded emissions in the manufacture of one electric vehicle is equivalent to driving an EV Sedan 92,000 miles. Table 3 illustrates the significance of the indirect $CO_2$ emissions associated with the production of motor vehicles.

Table 3
Indirect Transportation Emissions (vehicle production only)

| | Est. Lifecycle emissions (tonnes CO2e) | Proportion of emissions in production | Estimated emissions in production (tonnes (CO2e) |
|---|---|---|---|
| Standard gasoline vehicle | 24 | 23% | 5.6 |
| Hybrid vehicle | 21 | 31% | 6.5 |
| Plug-in hybrid vehicle | 19 | 35% | 6.7 |
| Battery Electric Vehicle | 19 | 46% | 8.8 |

Source: Lifetime Emissions from Cars - https://www.zemo.org.uk/assets/workingdocuments/MC-P-11-15a%20Lifecycle%20emissions%20report.pdf

Using data from Table 4 allows an estimate of embedded emissions from the manufacture of the existing fleet of vehicles in Ashland. Table 5 shows these estimated emissions. It should be noted that the distribution of vehicles by type is not known at the city level. Table 4 relies upon estimates of the number of gasoline, hybrid, and plug-in hybrid vehicles in the City.

Table 4
Production Emissions from Ashland Fleet (estimated)

| | Registered (2020) | Est. Lifecycle emissions (tonnes CO2e) | Estimated emissions in production (tonnes CO2e) |
|---|---|---|---|
| | | | |
| All vehicles | 20,602 | | |
| Gasoline | Estimated 14,902 | 357,648 | 83,451 |
| Hybrids | Estimated 3,000 | 63,000 | 19,500 |
| Plug-in hybrid | Estimated 2,000 | 38,000 | 13,400 |
| Battery Electric | 700 | 13,300 | 6,160 |
| TOTAL | | 471,948 | 122,511 |

Roughly 25 percent of lifecycle emissions from Ashland motor vehicles are associated with their production. Reducing the number of vehicles per household or facilitating the choice to own no vehicles could significantly reduce residents' carbon footprint. Regrettably, the number of households with no car, or just one car, fell at a compound annual rate of almost 15 percent per year between 2013 and 2018, illustrating the increasing dependence of Ashland households on the automobile. Table 5 shows the change in auto ownership between 2013 and 2018.

Table 5
Household Auto Ownership

| Number of Vehicles Owned | Percentage of Households 2013 | Percentage of Households 2018 | Annual Compound Rate of Change |
|---|---|---|---|
| 0 | 3.15 | 2.06 | -8.1 |
| 1 | 36.4 | 26.3 | -6.3 |
| 2 | 33.9 | 44.4 | 5.5 |
| 3 | 18.9 | 16.3 | -2.9 |
| 4 | 4.79 | 7.19 | 8.5 |
| 5 plus | 2.87 | 3.76 | 5.6 |

Source: https://datausa.io/profile/geo/ashland-or#housing (car ownership)

It is estimated that Ashland households spend approximately $10,305 a year, or 20 percent of the median household income on transportation. This expenditure, as a percent of household income, is second only to the cost of housing. Source: Economic Policy Institute, https://247wallst.com/city/cost-of-living-in-ashland-oregon/

Compounding this trend of higher auto ownership, is the increasing share of large trucks and SUV's in the local fleet. Again, while there isn't local data, it is probable that trucks are increasingly purchased as a family "sedan" as opposed to their historic function as a farm or work vehicle. "In May 2020, Americans bought more pickup trucks than cars for the first time. Five of the 10 top-selling vehicles in the U.S. last year were pickup trucks." (What Happened to Pickup Trucks, A. Smith, May 2021)

From a safety standpoint, the size of these vehicles is disconcerting. Take for example the Ford 150, "among the increasingly popular heavy-duty models, the height of the truck's front end may reach a grown man's shoulders or neck. When you involve children…it starts to become really disturbing." (Ibid) As the bumper height increases, potential injuries suffered by a pedestrian are more likely to be fatal. As the point of contact moves higher on the body instead of being thrown up and over the vehicle, a pedestrian is struck and then runover.

Additionally, SUV's and pickup trucks "have a voracious appetite for space, one that's increasingly irreconcilable with the way cities (and garages, and parking lots) are built." (Ibid)

**Conclusion:**
Owning an automobile is almost a pre-requisite to living in Ashland. It shouldn't be that way and helps to explain why many people find it difficult to afford to live here. Reducing residents' dependence on automobiles is key to achieving the CEAP net-zero 2050 goal.

The city must, in the near future provide safe, reliable, affordable and environmentally benign alternatives.

**Section 4. Street Design**
**(Make walking and bicycling viable modes of transportation)**

Goal: Reduce reliance upon motorized vehicles and make it practical and convenient to live in Ashland without owning a motor vehicle.

> "We can and must do more to reduce the number of people [nationally] who die while walking every day on our roadways. For too long we have disregarded this problem by prioritizing moving cars at high speeds over safety for everyone. It's past time for that to change. Protecting the safety of all people who use the street—especially the people most vulnerable to being struck and killed—needs to be a higher priority for policymakers, and this priority must be reflected in the decisions we make about how to fund, design, operate, maintain, and measure the success of our roads." https://smartgrowthamerica.org/dangerous-by-design/

It is important to recognize that for each one percent increase in bicycle or walking mode share, there is an approximate one percent reduction in vehicle miles of travel (VMT). This has the effect of reducing GHG emissions from the transportation sector by about one percent. Given that information, it is unfortunate that the City's transportation system has been designed, to a large degree, to serve only motor vehicles.

Many streets in Ashland do not include sidewalks. That is especially true on streets above the Boulevard and N. Main. Pedestrians must share the roadway with motor vehicles that are traveling at speeds which can result in death or serious injury if a pedestrian were struck by an inattentive, careless, or impaired auto driver. Streets with higher volumes and speeds usually have sidewalks but that is not universally the case (see https://ashlandgis.maps.arcgis.com/apps/instant/minimalist/index.html?appid=e783f5980abb4e74a9d771c868a29b4a)

The adage 'speed kills' is particularly pertinent when discussing pedestrian and bicycle deaths. The likelihood of death roughly doubles for every five miles per hour over 20 MPH. Table 6 details the seriousness of pedestrian injuries by travel speed. These same statistics are probably relevant to other vulnerable road users (i.e., people riding bicycles).

Table 6

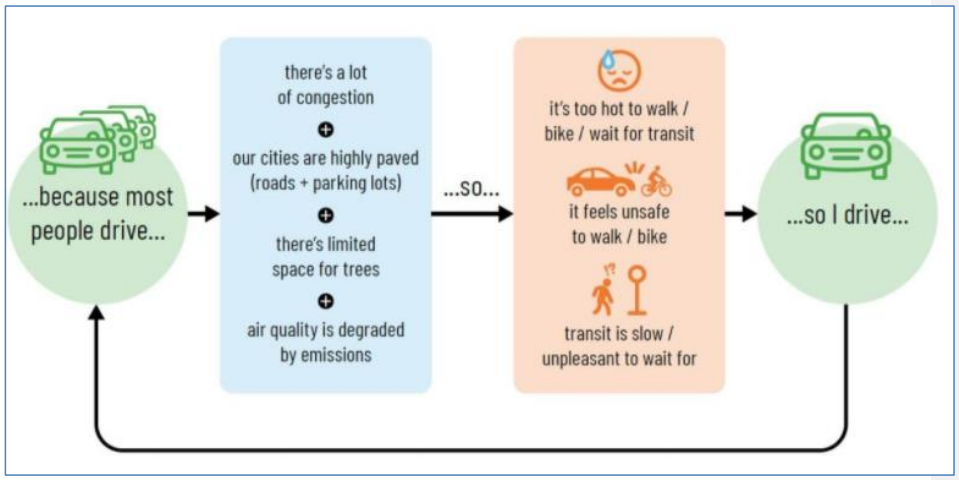
Vehicle travel speed and pedestrian injury severity.
(Florida, 1993-1996; pedestrians in single-vehicle crashes)

| | Travel Speed (Officer Estimates) | | | | | | |
|---|---|---|---|---|---|---|---|
| **Injury Severity** | 1-20 mph | 21-25 mph | 26-30 mph | 31-35 mph | 36-45 mph | 46+ mph | **Total** |
| Fatal (K) injury | 1.1% | 3.7% | 6.1% | 12.5% | 22.4% | 36.1% | 6.5% |
| Incapacitating (A) | 19.4% | 32.0% | 35.9% | 39.3% | 40.2% | 33.7% | 27.0% |
| Nonincapacitating (B) | 43.8% | 41.2% | 36.8% | 31.6% | 24.7% | 20.5% | 38.8% |
| Possible inj (C) or none | 35.6% | 23.0% | 21.2% | 16.6% | 12.7% | 9.7% | 27.7% |
| Total frequency | 13,368 | 1,925 | 2,873 | 2,188 | 2,493 | 906 | 23,753 |

There isn't a street in Ashland that is suitable for people of all ages and abilities to ride a bicycle. Traffic speeds on minor streets are too fast (see above regarding the risks associated with vehicle speed). Most critically, the bicycle facility design on major streets (i.e., bike lanes) do not provide adequate protection for people riding bicycles due to both the high speed of the adjacent traffic and high traffic volumes. (see Contextual Guidance for the Selection of Bicycle Facilities, National Association of City Transportation Officials, 2017 and Appendix A).

Mode choice is not a choice when the choice is between a safe mode of travel (driving a car) and an unsafe one (riding a bicycle). (see Figure 5)

Figure 5 – Why people drive




Source: Alta Planning https://altago.com/urbancooling/

As the graphic above demonstrates, the majority of people living in Ashland choose to drive. That is, in part, a function of unsafe street design. One factor is the City's hilly terrain. The hills do discourage some but without safe streets, Ashland could be as flat as a pancake and people still wouldn't bicycle in significant numbers.

According to the City's 2020 accident statistics, 18 percent of all reported accidents involved a person walking or riding a bicycle. Bicycling and walking, given the real and predicable risk of injury or death, isn't considered for many residents despite its environmental, health, and economic benefits. Ashland needs to prevent deaths and serious injuries for children and adults riding bicycles or walking. The streets must be made safe for everyone, to everywhere, for all modes.

Given the design of the transportation network, it is not surprising that travel by bicycle and walking is low relative to motorized travel. Table 7 summarizes mode share, by age of traveler in the Rogue Valley. (Note: Ashland specific data is not available).

Table 7.
Mode Share by Age Group in the Rogue Valley

| Age | Travel Mode | | | | | |
|---|---|---|---|---|---|---|
| | Auto | Walk | Bike | Transit | School Bus | Total |
| 0-17 | 76% | 9% | 3% | 1% | 12% | 100% |
| 18-34 | 90% | 5% | 3% | 1% | 0% | 100% |
| 35-54 | 88% | 7% | 3% | 1% | 0% | 100% |
| 55-64 | 94% | 4% | 1% | 1% | 0% | 100% |
| 65-74 | 92% | 6% | 0% | 1% | 0% | 100% |
| All Ages | 88% | 7% | 2% | 1% | 3% | 100% |

Source: Oregon Household Survey, August 2019

Rogue Valley bicycle mode share lags significantly behind other cities in the State that have made a commitment to **safe** active transportation. Table 9, center column, includes current bicycle mode share by the cities listed. Note the "current date" varies by reporting city. Ultimately, the focus should not be on the current low rate of bicycle mode share but rather on establishing and achieving a much higher rate in the future. Table 8, right column, includes adopted or defined bicycle mode share for selected cities.

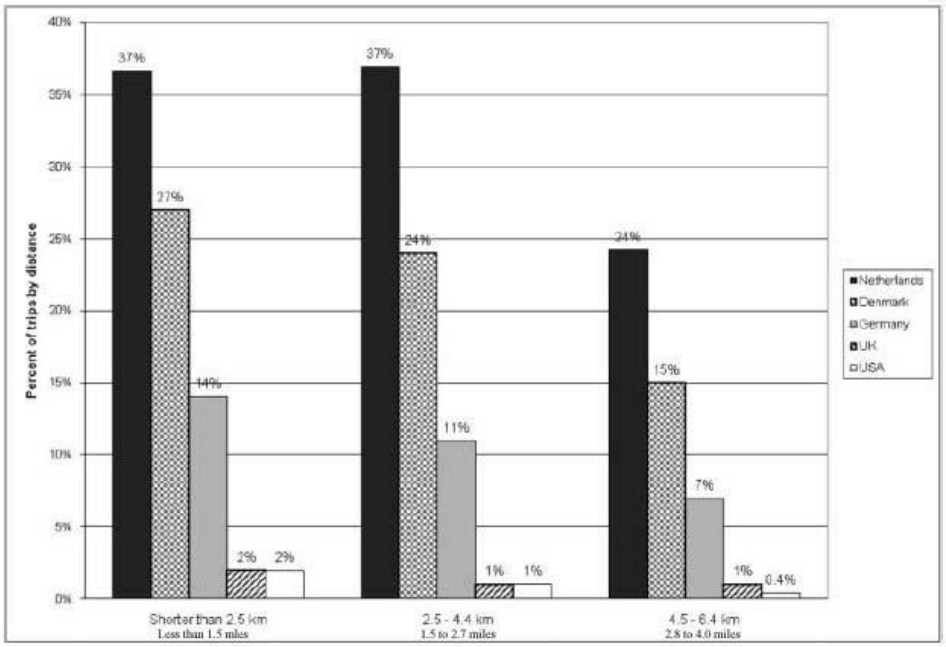
Table 8.
Bicycle Mode Share and Future Year Target

| City or region | Current bike mode share | Adopted or defined bike mode share target |
|---|---|---|
| Portland, OR | 6% (2009 ACS)<br>7% (2010 Auditor report work trips) | 30% of work trips (Draft Portland Plan) 2035 |
| Corvallis, OR | 9.4% (2000 Census) | *None* |
| Davis, CA | 14% (2000 census) | 25% of all trips by 2012 (adopted in 2009 bike plan) |
| Boulder, CO | 12.3% (2009 ACS)<br>7% (2000 census)<br>15.9% (2009 travel diary survey - includes all trips, not just commute) | Increasing bicycle mode share (all trips) at least 4% between 1994 (11.3%) and 2020 (1996 bicycle system plan). (Goal has been met according to travel diary survey results.) Other related targets are: 75% non-SOV mode share by 2020 (2008 Transportation plan) zero growth in VMT from 1994 levels. |
| Eugene, OR | 10.8% (2009 ACS) | Approximately 22% (Draft bike/ped plan has defined a target of doubling bike mode share by 2020) |

Source: RVMPO Strategic Assessment Final Report, February 2016

The future bicycle mode share goals set by these cities are comparable to those in some European cities where a safe, efficient, and equitable network of bicycle facilities exist. Figure 6 illustrates this fact.

Figure 6. Bicycling Share Trips in Netherlands, Denmark, Germany, the UK and the USA (2000 - 2005) by Trip Distance




*Sources*: German Federal Ministry of Transport (2003); U.S. Department of Transportation (2003); Department for Transport (2005); Netherlands Ministry of Transport (2006); Danish Ministry of Transport (2007)

> "Some readers might assume that bicycling levels in Europe have been consistently high. In fact, cycling fell sharply during the 1950's and 1960's, when car ownership surged and cities started spreading out. From 1950 to 1975, the bike share of trips fell by roughly two-thirds in a sample of Dutch, Danish and German cities, from 50%-85% of trips in 1950 to only 14-35% of trips in 1975 (Dutch Bicycling Council, 2006). Similarly, a study by the City of Berlin (2003) found that the number of bike trips there fell by 78% from 1950 to 1975. During that 25-year period, cities throughout the Netherlands, Denmark and Germany focused on accommodating and facilitating increased car by vastly expanding roadway capacity and parking supply, while largely ignoring the needs of pedestrians and cyclists (Hass-Klau, 1990)
>
> "In the mid-1970's, transport and land-use policies in all three countries shifted dramatically to favor walking, cycling and public transport over the private car. The policy reform was a reaction to the increasingly harmful environmental, energy and safety impacts of rising car use (Hass-Klau, 1990; Pucher, 1997; European Conference of the Ministers of Transport, 2004: Dutch Bicycling Council, 2006).

Most cities improved their bicycling infrastructure while imposing restrictions on car use and making it more expensive. That policy reversal led to turnarounds in the previous decline of bike use. From 1975 to 1995, the bicycling share of trips in the same, previously cited

sample of Dutch, Danish and German cities rose by roughly one-fourth resulting in 1995 bike share of 20 to 43%." Making Cycling Irresistible J. Pucher, 2008

Anyone who is skeptical about the potential for dramatically increasing bicycle use in Ashland is encouraged to read Making Cycling Irresistible in its entirety. People are people regardless of which continent they live on and largely respond to their environment in a similar way. Consider the safety and extent of the bicycle network in the Netherlands, Denmark and Germany (if you've visited there) compared to that in Ashland or the Rogue Valley. There is no comparison.

A publication by University of Berkley entitled A Global High Shift Scenario states that "a country [and cities] committed to major shifts [in GHG emissions] can achieve ten percentage point or higher [bicycle] mode share increases in a ten-year period." (A Global High Shift Scenario, p. 21).

> "Political leaders have strong incentives to choose this path, as it leads to a dramatic reduction in societal investments and operating and energy costs, and it provides improved economic well-being, enhanced social equity and stability, and strong reductions in environmental damage over the current trajectory. (ibid, p. 34)
>
> "Over the long term, it may be possible for many cities to replicate the success of cycling in cities such as Groningen, Assen, and Amsterdam in the Netherlands, where cycling exceeds 40 percent of all trips, and in Copenhagen in Denmark, which grew from low levels of cycling after World War II to more than 45 percent of trips today. Such cities have succeeded by providing seamless infrastructure and a host of supportive policies to make cycling a safe, comfortable, and efficient option for a large number of trips. But in the short term, most efforts should be modeled after cities that have succeeded in rapidly growing cycling from very low levels, in some cases from near zero to more than 5 percent mode share in just a few years. Seville, Spain, is particularly relevant, as it grew cycling mode share from 0.5 percent to nearly 7 percent of trips in six years (2006–2012), with the number of cycling trips increasing from five thousand to seventy-two thousand per day. Seville achieved this by installing a backbone network of nearly 130 kilometers of protected cycle lanes (cycle tracks) throughout the city and implementing a bike share program with 2,500 bicycles and 258 stations in a dense bike share network across the city. Paris, Buenos Aires, and Montreal have also experienced similarly rapid increases in cycling through investments in low-stress networks of cycling infrastructure and large-scale bike sharing schemes. (IBID, p 34)
>
> "Substantial restraint on motor vehicle speed and volumes is the other widespread policy implementation that complements cycling infrastructure. (ibid, p 34)
>
> "Prioritizing cycling, walking, and public transport while restricting motor vehicle use, can achieve a 50 percent reduction in urban transport $CO_2$. To do so, cycling targets for things such as cycling mode share, cycling infrastructure investment, and the introduction of e-bikes as part of national [Ashland] mobility strategies could be set at the country [city] level to define goals and measure progress toward them. Countries [Ashland] can make commitments to these targets as well as toward other supportive investment in walking and public transportation necessary to achieve a future based on more sustainable transportation." (ibid p. 38)

**Conclusion:**
Making the city safe, convenient, and efficient for walking and bicycling will lead to an increase in their use; and, at the same time, help to achieve the CEAP net-zero 2050 goal. Building modern cycling infrastructure is a sound and cost-effective investment in the city's future, especially relative to the cost of building more streets and widening existing roadways to accommodate an ever-growing number of motor vehicles. Without this change, the transportation system will be a large and continuing source of $CO_2$ emissions and traffic congestion will become unbearable.

## Section 5. Attaining CEAP Goals

Attaining net zero emissions from the transportation sector by 2050 will be challenging. That's true even if the State or Federal government were to prohibit the sale or registration of fossil fueled vehicles after 2035. Beyond climate change, imagine living in Ashland 30 years from now with 90 percent of the all travel within the City relying upon an automobile; as we do now (see Table 7). Traffic congestion would be unbearable even if all the cars were self-driving.

The CEAP included goals for "Urban, Land Use + Transportation Goals. These are:

- **Reduce community and City employee vehicle miles traveled and greenhouse gas emissions.**
- **Improve vehicle efficiency and expand low-carbon transport, including within the City's fleet.**
- **Support local and regional sustainable growth.**
- **Protect transportation infrastructure from climate impacts.**

Table 9 includes a listing related CEAP strategies.

Table 9.

| URBAN FORM, LAND USE + TRANSPORTATION | | |
|---|---|---|
| **Strategy ULT-1.** Support better public transit and ridesharing. | | |
| **ULT-1-1.** Coordinate with neighboring local governments to promote use of transit, carpooling, and car-sharing. | C | Mi |
| **ULT-1-2.** Work with RVTD to implement climate-friendly transit. | C | Mi |
| **ULT-1-3.** Establish policies to support development near transit hubs without displacing disadvantaged populations. | C | Mi |
| **ULT-1-4.** Evaluate feasibility of expanded local transit options. | C | Mi |
| **Strategy ULT-2.** Make Ashland more bike- and pedestrian-friendly. | | |
| **ULT-2-1.** Implement bicycle- and pedestrian-friendly actions in the Transportation System Plan and Downtown Parking Management Plan. | C | Mi |
| **ULT-2-2.** Explore opportunities to convert to shared streets where appropriate to provide multimodal connectivity. | C | Mi |
| **Strategy ULT-3.** Support more-efficient vehicles. | | |
| **ULT-3-1.** Implement a local fuel-related tax. | C | Mi |
| **ULT-3-2.** Revise land use codes to require EV charging infrastructure at multifamily and commercial developments. | C | Mi |
| **ULT-3-3.** Develop and provide information about electric and hybrid vehicles on the City website. | C | Mi |
| **Strategy ULT-4.** Support more climate-ready development and land use. | | |
| **ULT-4-1.** Regulate new development in the Wildfire Lands Overlay part of the urban growth boundary. | C | Ad |
| **ULT-4-2.** Revise community development plans to favor walkable neighborhoods and infill density. | C | Mi |
| **ULT-4-3.** Modify the WUI code to include construction techniques appropriate for wildfire-prone areas. | C | Ad |
| **Strategy ULT-5.** Increase the efficiency of City fleet vehicles and employee commuting. | | |
| **ULT-5-1.** Provide carpool and vanpool parking, charging stations, and parking for EVs for City employees. | M | Mi |
| **ULT-5-2.** Conduct a city fleet audit and use it to set policy and targets. | M | Mi |
| **ULT-5-3.** Purchase verified carbon offsets to offset City staff travel. | M | Mi |

## Section 6. Goals, Policies and Implementation Strategies

The following goals and strategies will serve to create a more sustainable, environmentally benign, and a transportation system that is efficient for our City's land use. Many of the strategies in this section compliment the CEAP strategies, as above, but provide greater detail and specificity. It is critical that the changes to the transportation system described in the implementation strategies be undertaken. No one strategy by itself will be sufficient.

### Land Use and Transportation Efficiency

**Goal 1: Concentrate future commercial and high-density residential development within areas adjacent to RVTD's high-capacity transit route (Figure 3) and require all new residential development to be~~: 1) in neighborhoods where shopping, employment, parks and housing are close by and 2) are~~ served by pedestrian and bicycle networks that are safe, convenient, and minimize out-of-direction travel.**

Policy 1-1) Establish a funding mechanism dedicated to providing employee subsidies for transit use, bicycling and walking.

Policy 1-2) Public, subsidized, and work force housing shall be strategically located to provide convenient access to high-capacity transit services.

Policy 1-3) Provide, in the Ashland Development Code, for redevelopment / development incentives in the Transit Triangle to increase land use intensity.

| Implementation Strategy | Time Frame | | GHG Emissions Reduction |
|---|---|---|---|
| | Start | Completion | |
| 1. Provide, in the City's Development Code bonus provisions, redevelopment/development incentives on lands within ¼ mile of RVTD's high-capacity transit route with an emphasis on providing high-density workforce housing. | 2021 | Continuing | NA |
| 2. Double the minimum bicycle parking, as specified in the City's Development Code, for all uses within ¼ mile of RVTD's high-capacity transit route. Require all such parking to be covered. | 2021 | 2025 | NA |
| 3. Review and reduce, to the degree possible, the City's maximum permissible ~~free~~ parking ~~standard~~ requirements for lands within ¼ mile of RVTD's high-capacity transit route. | 2021 | 2025 | NA |
| 4. Increase walking mode share in the areas bordering RVTD's high-capacity transit route to 20 percent. | 2035 | 2050 | NA |
| 5. Convert existing City public parking lots to high-density housing with provision for commercial use on the lower floor. | 2035 | 2050 | NA |
| (continued next page) | | | |

| Implementation Strategy | Time Frame | | GHG Emissions Reduction |
|---|---|---|---|
| | Start | Completion | |
| 6. Establish a business license surcharge for businesses within ¼ mile of RVTD's high-capacity transit route to be dedicated to offering transit, bicycle and walking incentives to employees within the corridor. | 2030 | Continuing | NA |
| 7. Redesign the downtown Plaza to create a tree covered pedestrian plaza (see Appendix B) suitable for outdoor dining, Saturday Market, small and large community gatherings, etc. | 2030 | 2030 | NA |
| 8. Evaluate changes to Ashland's zoning code to disallow singlefamily detached housing in the High Density Residential Plan Designation (R-3 zone). * | 2021 | 2025 | NA |
| 9. Evaluate decreasing multifamily parking requirements. * | 2021 | 2025 | NA |
| 10. Evaluate increasing the maximum allowed densities in the MultiFamily Residential (R-2), High Density Residential (R-3). * | 2021 | 2025 | NA |
| 11. Evaluate increasing allowed height in the R-2 and R-3 multifamily residential zones.* | 2021 | 2025 | NA |
| 12. Identify opportunities to increase allowances for residential uses on the ground floor of buildings within commercial and employment zones.* | 2021 | 2025 | NA |
| 13. Evaluate increasing lot coverage allowances slightly in the R-2 and R-3 zones. * | 2021 | 2025 | NA |
| 13. Evaluate changes to Ashland's zoning code to disallow singlefamily detached housing in the High Density Residential Plan Designation (R-3 zone).* | 2021 | 2025 | NA |
| 14. Increase supply of High Density Residential lands by rezoning lands within lower density Plan Designations that have a surplus of capacity.* | 2021 | 2025 | NA |

* Identified as a strategy in the Ashland Housing Strategy.

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Expected outcomes:

1) Maximize land development within areas with easy walking distances to commercial/service businesses and high-capacity transit.
2) Reduce reliance upon single occupant motor vehicle transportation
3) Increase reliance upon walking, bicycling and transit with an associated growth in mode share.

**Public Transit**

**Goal 2: Improve the effectiveness of public transit and increase transit mode share - doubling transit mode share in the city between 2020 and 2035 and doubling again by 2050.**

Policy 2-1) Deploy RVTD's high-capacity transit route by 2035.

Policy 2-2) Diversify public transportation services in Ashland to include high-capacity transit coupled with autonomous vehicle demand-response services.

Policy 2-3) Electrify all public transit vehicles used in the City.

Policy 2-4) Provide intermodal connectivity between transit and bike share at major transit stops.

| Implementation Strategy | Time Frame | | GHG Emissions Reduction |
|---|---|---|---|
| | Start | Completion | |
| 1. Electrify ½ of all public transit vehicles used in the City | 2025 | 2035 | NA |
| 2. Electrify all public transit vehicles used in the City | 2035 | 2050 | NA |
| 3. Support a citywide on-demand transportation service utilizing autonomous vehicles | 2040 | Continuing | NA |

Expected outcomes:

1) Reduced reliance upon single occupant motor vehicle transportation
2) Increased transit mode share
3) An electrified public transit fleet leading to the elimination of $CO_2$ and other dangerous emissions from diesel and natural gas fueled public transit vehicles.
4) Increased mode choice for all Ashland residents.
5) An integrated public transportation system providing seamless service between fixed and on-demand transportation.

**Auto-centric Transportation System**

**Goal 3: Reduce reliance upon motorized vehicles and make it practical and convenient to live in Ashland without owning a motor vehicle.**

Policy 3-1) Construct or reconstruct the existing transportation network to ensure that non-motorized modes of travel are as safe as driving a motor vehicle and, most importantly, serve the travel needs of all ages and abilities.

Policy 3-2) Increase revenues for the improvement of the pedestrian and bicycling networks.

Policy 3-3) Provide incentives, in the form of parking regulation and supply, to electrify the personal automobile fleet.

Policy 3-4) Reduce motorized vehicle miles of travel per capita through improvements to the transportation system that incentivize residents and visitors to choose to walk, bicycle, or use public transit.

| Implementation Strategy | Time Frame | | GHG Emissions Reduction |
|---|---|---|---|
| | Start | Completion | |
| 1. Reduce speeds to 20 MPH on low volume roads throughout the City except where already posted at a lower speed (see Appendix C) | 2021 | 2025 | 4 metric tons |
| 2. Support amendment of ORS 810.438, Photo radar • authorized jurisdictions, to include Ashland | 2021 | 2025 | |
| 3. Reconfigure/reconstruct four lane- miles of existing higher volume roadways each year. Include protected bike lanes (see Appendix C) | 2021 | 2030 | (see bicycling – below) |
| 4. Reduce vehicle miles of travel (VMT) and auto ownership | 2021 | Continuing - with a goal of 50% reduction in VMT by 2050 | A one percent reduction in VMT reduces GHG emissions from the transportation sector by one percent |
| 5. Adopt a 5 cents per gallon gas tax with the proceeds dedicated exclusively to bicycle and pedestrian facility improvements within the public right-of-way | 2025 | Continuing | NA |
| 6. Convert existing public parking lot spaces to electric only vehicle parking and provide charging at all spaces. | 2025 | 2035 | 40.5 metric tons – through the electrification of auto fleet owned by Ashland residents |
| 7. Institute paid parking in City owned lots and on-street spaces using a variable pricing structure to provide 85 percent occupancy throughout the day. | 2025 | Continuing | NA |
| 8. Autonomous vehicle technologies should be crafted with pedestrian and cycling safety in mind, exploiting the automation of driving and motor vehicle speed (Intelligent Speed Adaption) with the goal of eliminating road crash fatalities (Vision Zero), boosting vehicle occupancy and utilization rates, curbing demand for parking, and reallocating space for better bicycle facilities. | 2025 | Continuing | NA |
| 9. Change laws and enforcement practices to better protect people bicycling and walking | 2021 | Continuing | |
| (continued next page) | | | |

| Implementation Strategy | Time Frame | | GHG Emissions Reduction |
|---|---|---|---|
| | Start | Completion | |
| 10. Shift planned transportation investments to areas and projects that can most effectively reduce existing motor vehicle use and make the pedestrian and bicycle system safe. | 2021 | Continuing | |
| 11. Institute and expand the network of electric charging stations to complement continued adoption of electric motor vehicles. | 2021 | Continuing | Complementary to and a part of the 40.5 metric tons noted above – through the electrification of auto fleet. |
| 12. Provide for continuous, uninterrupted flow of non-motorized traffic on the Central Bike Path, Bear Creek Greenway and other mulit-use paths (see Appendix B) | 2030 | 2030 | Place traffic control devices at bike path/street intersections to provide the right-of-way to bicycles and pedestrians. |
| 13. Establish a 10-foot maximum motorized vehicle travel lane width for all streets in the city except where the existing standards provide for a narrower width. | 2021 | 2025 | NA |

Expected outcomes:

1) Reduced reliance upon single occupant motor vehicles
2) Improved safety for all road users with a goal of Vision Zero (no fatalities).
3) Increased transit, bicycle and walking mode shares
4) Increased adoption of electrified transport by the residents of Ashland.
5) Increased mode choice for all Ashland residents.
6) Improved parking availability coupled with parking revenue enhancements.
7) Maximize existing right-of-way width to provide safe and efficient travel for all modes.
~~7)~~8) Increased effectiveness of speed enforcement and control.

**Bicycle/Pedestrian and other non-motorized modes of travel**

**Goal 4: Increase the share of "vehicle miles of travel" per capita of people riding bicycles, walking or using other micro-forms of non-motorized transportation.**

Policy 4-1) Shift planned transportation investments away from motorized transport and focus on the improvement, safety, convenience, and quality of bicycle and pedestrian infrastructure within the City.

Policy 4-2) Create transportation network connections for bicycle and pedestrian travel that minimize out-of-direction travel and reduce total travel time.

Policy 4-3) Design and construct bicycle infrastructure consistent with the National Association of City Transportation Official's, Designing for All Ages and Abilities, Contextual Guidance for High-Comfort Bicycle Facilities (see Appendix A).

Policy 4-4) Extend the existing non-motorized multi-use facilities, and design and build new ones that serve as connections between major activity centers, the Bear Creek Greenway, Central Bike Path and the major street network (see Appendix C).

| Implementation Strategy | Time Frame | | GHG Emissions Reduction |
|---|---|---|---|
| | Start | Completion | |
| 1.Design and construct bicycle infrastructure consistent with the NACTO, Designing for All Ages and Abilities, Contextual Guidance for High-Comfort Bicycle Facilities | 2021 | Continuing | NA – required to achieve goals for bike mode share (see below) |
| 2. Increase bicycle mode share to 12 percent | 2021 | 2030 | 8.1 metric tons |
| 3. Increase bicycle mode share to 32 percent | 2030 | 2040 | 16.2 metric tons (additive with above) |
| 4. Increase bicycle mode share to 42 percent | 2040 | 2050 | 8.1 metric tons (additive with above) |
| 5. Financially support subsidized bicycle share service throughout the City | 2021 | Continuing | NA |
| 6. Provide a subsidy for the purchase or lease of bicycles and e-bikes (excluding those with a retail price of $1,500 or more). | 2021 | Continuing | NA |
| 7. Institute a public education and information campaign that extolls bicycles as a quick and convenient mode of travel | 2021 | Continuing | NA |
| 8. Implement a bicycle way-finding system | 2021 | 2025 | NA |
| 9. Install bicycle charging outlets at 25 percent of public bicycle parking spaces | 2025 | 2035 | NA |
| 10. Install bicycle charging outlets at 50 percent of public bicycle parking spaces | 2035 | 2050 | NA |
| 11. Bike lanes, when they are used, shall be a minimum of 7.5 feet wide (the Copenhagen standard - allowing one bicyclist to overtake and pass another without merging into the motor vehicle travel lane). This width includes the drain pan but must be wider if adjacent to parking. | 2021 | Continuing | NA |
| 12. Expand public bicycle parking throughout RVTD's high-capacity transit corridor and increase, generally, the required bicycle parking requirement pursuant to the City's Development Code. | 2021 | 2050 | NA |
| (continued on next page) | | | |

| Implementation Strategy | Time Frame | | GHG Emissions Reduction |
|---|---|---|---|
| | Start | Completion | |
| 13. Extend the Central Bike Path and Bear Creek Greenway (see http://www.ashland.or.us/Files/BIKE_TSP.pdf). | 2025 | 2050 | |
| 14. Investigate, and design and construct multi-use paths within Ashland Creek (http://www.ashland.or.us/Files/Ashland_Creek.pdf), Wrights Creek (http://www.ashland.or.us/Files/Wrights_Creek.pdf), Roca/Paradise Creek (http://www.ashland.or.us/Files/Roca_Paradise_Corridor.pdf), Hamilton Creek (http://www.ashland.or.us/Files/Hamilton_Creek_rev.pdf) Clay Creek (http://www.ashland.or.us/Files/Clay_Creek_rev.pdf), and Cemetery Creek corridors. | 2025 | 2050 | NA |
| 14. Install and maintain a network of bicycle counters to facilitate and monitor bicycle use. | 2021 | 2050 | NA |

Expected outcomes:

1) Reduced reliance upon single occupant motor vehicle transportation
2) Increased bicycle mode share leading to a significant and measurable reduction in $CO_2$ emissions from the transportation sector.
3) Real mode choice (among equally safe transportation options) for all Ashland residents.
4) Reduced consumption of gasoline by residents leading to real household savings which will help to make Ashland more affordable for everyone.
5) Improved quality of life including health and enjoyment.
6) Improved air quality.

## Section 7. Conclusion

These strategies, when combined, will substantially reduce $CO_2$ emissions arising from residents' transportation choices. Ashland residents' and out-of-town visitors' will be less reliant upon automobiles for travel within the City leading to an estimated 95 percent (76.9 metric tons) reduction in GHG emissions compared to existing levels.

Reducing the auto-centric character of the City will have a profound effect upon the livability and enjoyment of living in or visiting Ashland. Residents will spend significantly less on transportation and thus be able to spend an increasing share of disposable income on other household expenditures.

The unique qualities of the city's modern transportation system will serve to attract out-door recreation enthusiasts including mountain bikers and people who ride bicycles on the road for pleasure. The region's system of hiking and mountain bikes trails and the beauty of nearby rural landscapes will serve as magnets to out-of-town visitors. Additionally, the predominance of non-auto travel will have the effect of making Ashland more interesting

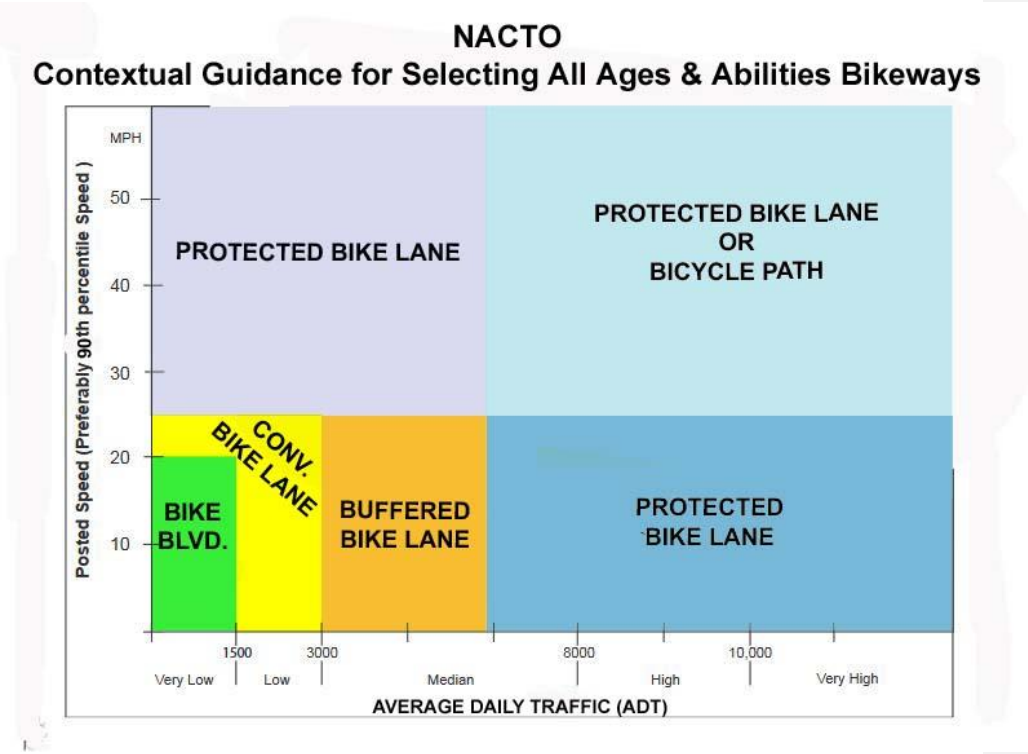
(and tranquil) as a destination, boosting it potential to attract west coast, national, and international visitors

These changes will have a profound impact on the City's overall livability. Coupled with our small-town character and Ashland Fiber Network's high speeds and reliability, the City will become the "spot" for remote workers. It is estimated that 29 to 39 percent of the workforce will work remotely in the future. Attracting these workers to Ashland can serve as a "new" economic base. This population is likely to be a highly educated and well-paid. (source: McKinsey, November 2020; https://www.mckinsey.com/featured-insights/future-of-work/whats-next-for-remote-work-an-analysis-of-2000-tasks-800-jobs-and-nine-countries#) These new residents will help to support local businesses, pay state and local taxes, and contribute to the cultural fabric of the community.

These strategies, taken as a whole, are in alignment with the federal Moving Forward Act,[1] the federal reauthorization of transportation programs and funding.

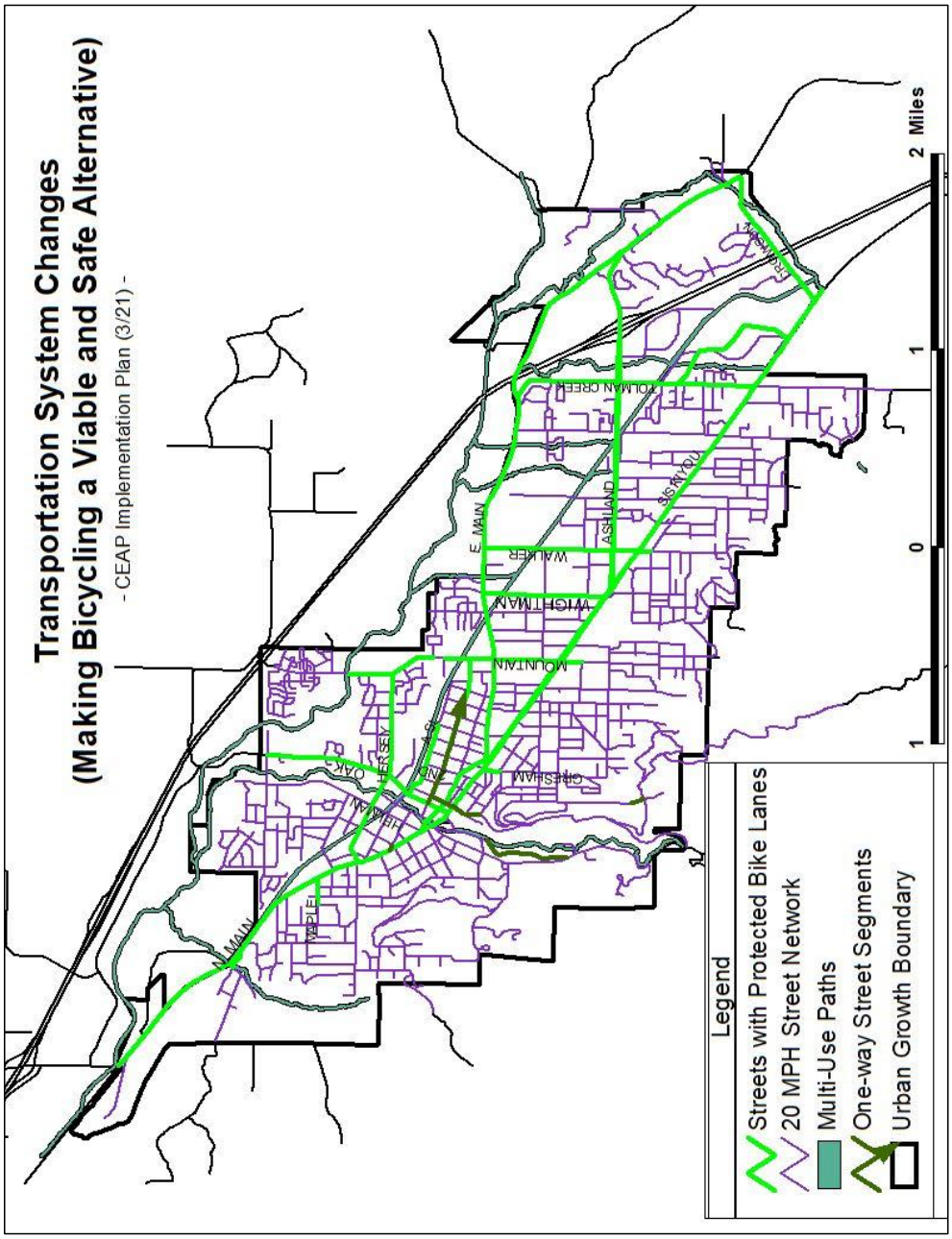
[1] [1] HR2, Moving Forward Act, the pending reauthorization of the federal transportation act:

- Adds shared micromobility, including bikeshare and shared scooters, as an eligible expense in the Congestion Mitigation and Air Quality (CMAQ) program.
- Defines bikeshare as an "associated transit improvement" in US Code 5302 of Title 49.
- Provides for a 60% increase for the Transportation Alternatives Program (TAP), the largest federal funding source for bike infrastructure. TAP will allow for more streamlined, expedited construction of bike lanes.
- $250 million for the Active Transportation Connectivity Grant, which would fund regionally connected mobility networks.
- $250 million for the Community Climate Innovation Grant, which can be used for shared micromobility projects that contribute to reducing greenhouse gas emissions.
- A focus on Vision Zero.


NACTO
Contextual Guidance for Selecting All Ages & Abilities Bikeways
MPH
Posted Speed (Preferably 90th percentile Speed )
50
40
30
20
10
PROTECTED BIKE LANE
PROTECTED BIKE LANE
OR
BICYCLE PATH
CONV.
BIKE LANE
BIKE
BLVD.
BUFFERED
BIKE LANE
PROTECTED
BIKE LANE
1500
3000
8000
10,000
Very Low
Low
Median
High
Very High
AVERAGE DAILY TRAFFIC (ADT)

Appendix B

Conceptual Pedestrian Oriented Plaza
Design


Transportation System Changes
(Making Bicycling a Viable and Safe Alternative)
- CEAP Implementation Plan (3/21) -
N MAIN
MAPLE
OAK
JERSEY
ASH
CHESHAM
MOUNTAIN
WIGHTMAN
WALKER
E MAIN
ASHLAND
TOLMAN CREEK
Legend
Streets with Protected Bike Lanes
20 MPH Street Network
Multi-Use Paths
One-way Street Segments
Urban Growth Boundary
1
0
1
2 Miles

Appendix D

General Characteristics of Enhanced Bus Services

| Transit Technology | Residential & Employment Density Ranges* | | | | | | Station Characteristics | | |
|---|---|---|---|---|---|---|---|---|---|
| | Core | | Centers | | Corridors | | Typical Spacing Range | Ideal Spacing | Sphere of Influence |
| | Res. | Emp. | Res. | Emp. | Res. | Emp. | | | |
| Enhanced Bus | 20+ | 200 | 10-20 | 2-5 | 5-10 | 2–5 | 500 feet –½ mi | ¼ mi | Adjacent parcel |

| Corridor Form** | Operational Characteristics | | | | | | Example Cities |
|---|---|---|---|---|---|---|---|
| | ROW/ Guideway | Peak Service Headways (mins) | Route Length (mi) | Capacity (persons per car) | Operating Speed (mph) | | |
| | | | | | Max. | Typical | |
| Various urban centers and industrial corridors | Mixed-traffic or dedicated ROW | 10–15 | 5–10 | 44 (40 foot bus); 62 (articulated bus) | 65 | 8–60 | Albuquerque, Baltimore, Boulder (CO), Los Angeles, Montreal, Reno, Salt Lake City, San Diego |

* Residential densities expressed in dwelling units per acre (du/ac); employment densities expressed in number of employees per acre (em/ac), presented as minimum suggested densities. Actual densities around transit stations vary based on CBD size, distance from CBD to other centers, and metro area size. Densities based on FDOT TOD Guidelines (www.floridatod.com), from Dittmar and Ohland (New Transit Towns, 2004) and Zupan (Where Transit Works in 2006, December 2005) and from the Charlotte multi-corridor planning effort.

**Cores pertain to high-intensity urban cores, i.e., CBDs. Centers are urban neighborhoods, historic urban centers, and suburban centers, and corridors are links between Core and Centers that include industrial corridors and new suburban corridors.

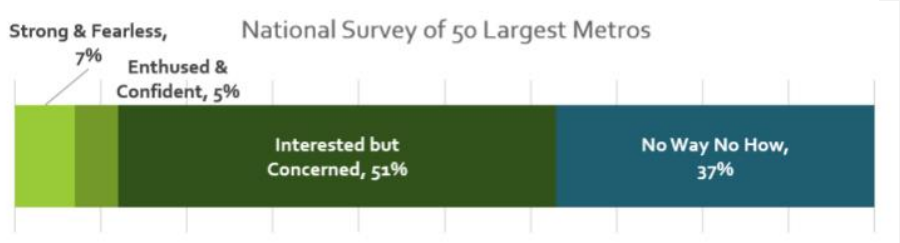
Source: https://www.transit.dot.gov/sites/fta.dot.gov/files/FTA_Report_No._0056.pdf

Commonly Asked Questions

1. **How can we be sure that Ashland residents will actually bicycle if the roads are made safe for cycling?**

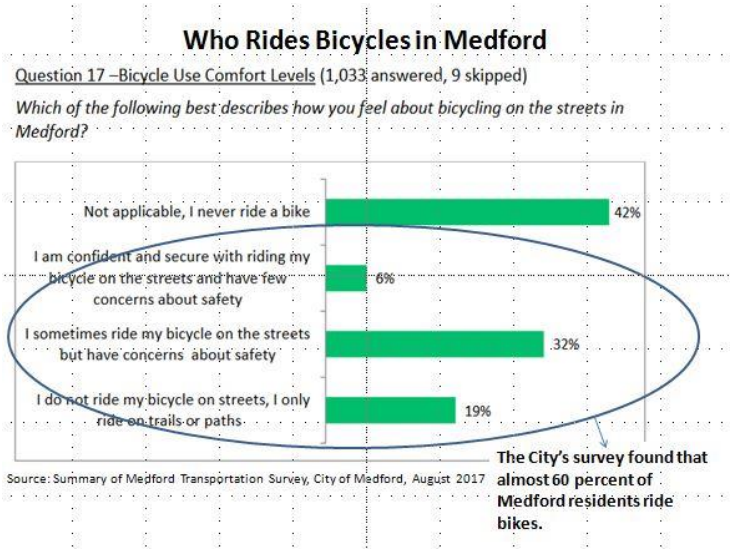
   Survey, after survey, after survey has shown that the majority of residents in an urban area (51%) are interested in bicycling but concerned for their safety. The majority of residents are afraid to share the road with motor vehicles. The distribution of residents by interest in cycling, as shown below, is probably applicable to every urban area in the nation including Ashland.

   Figure 1.




   A community survey in Medford, echoing the national survey, found that residents there had similar attitudes toward cycling.

   Figure 2.



As with the national survey of metropolitan areas (Figure 1), 51 percent of Medford residents have safety concerns when riding a bicycle on a street or only ride on trails (Figure 2). Presumably, those who ride only on trails or paths do so to avoid safety concerns associated with bicycling on streets.

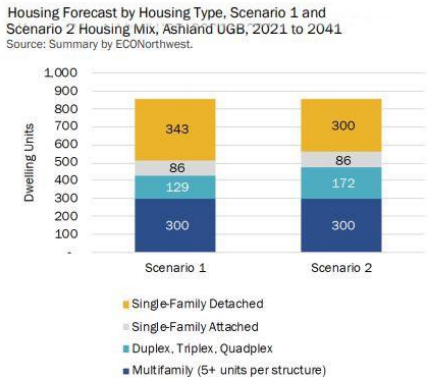
It is likely that residents in Ashland hold similar views. Two key finding of the national survey illustrate the critical importance of creating bicycle infrastructure that is suitable for all ages and abilities. These include:

- "The Interested but Concerned adults do represent the largest potential market for increasing cycling for transportation. Bicycle infrastructure that increases their physical separation from motor vehicles, such as cycle tracks, increases their reported level of comfort significantly. This would seem a necessary condition to increasing their levels of cycling for transportation.

- "There is a correlation between cycling to school as a child and levels of comfort cycling as an adult. The Enthused and Confident adults were most likely to have cycled frequently to school as a child, while the majority of No Way No How adults said that they never rode to school as a child. Cycling to school does not appear to affect whether an adult within one of the categories is currently cycling for transportation or recreation, however. Because cycling frequency does vary by category, these findings do lend support to the hypothesis that increasing cycling to school could have longer lasting effects on overall rates of cycling." Four Types of Cyclists? Examining a Typology to Better Understand Bicycling Behavior and Potential, Jennifer Dill, page 18.

2. **With Ashland's population increase at only 2-3k in the next 30 years is that the amount of high-density housing you think we need to add?**

   Ashland's Preliminary Residential Land Needs Analysis, includes a housing needs analysis and found the following:



The analysis estimates that between 429 to 472 duplex, triplex, quadraplex, and multifamily (5+ units) dwelling units will be needed between 2021 and 2040. Assuming these needs continue through 2050, they would suggest that between 650 to 700 duplex, triplex, quadraplex, and multifamily (5+ units) dwelling will be needed between now and 2050.

> "The housing strategy primarily addresses the needs of households with middle, low, very low, or extremely low income. It distinguishes between two types of affordable housing: (1) housing affordable to very low-income and extremely low-income households and (2) housing affordable to low-income and middle-income households. The following describes these households, based on information from the Ashland Housing Capacity Analysis.
>
> "Very low-income and extremely low-income households are those who have an income of 50% or less of Jackson County Median Family Income (MFI) which is an annual household income of $32,600. About 34% of Ashland's households fit into this category. They can afford a monthly housing cost of $820 or less. Development of housing affordable to households at this income level is generally accomplished through development of government-subsidized income-restricted housing.
>
> "Low-income and middle-income households are those who have income of 50% to 120% of Jackson County's MFI or income between $32,600 to $78,100. About 31% of Ashland's households fit into this category. They can afford a monthly housing cost of $820 to $1,630. The private housing market may develop housing affordable to households in this group, especially for the higher income households in the group." (Draft Ashland Housing Strategy, page 2)

From the above, it is probable that more than half of Ashland households currently need or would benefit from some form of subsidized, public or affordable housing. It is logical to project that the housing needs projected from now to 2050 should include a similar mix of market rate and affordable housing.

3. **Looking at your numbers on transit mode share, I have a hard time envisioning RVTD participation increasing in Ashland up to and beyond the 1.5% goal.**

RVTD's 2040 Plan's 1.5 percent mode share estimate is based upon the ridership of its entire system. Route 10, based upon 2018 ridership figures, carried 45 percent of RVTD's approximate 1 million passengers in that year. It is also important to note that not all RVTD routes, as a part of the "preferred system" will operate at 10-minute headways. Those that do, will enjoy a higher overall share of RVTD's passengers.

The increasing transit frequencies (from 30-minute headways to 10-minute headways) have been shown to have a profound impact on ridership. Ridership can grow 700 percent. (https://nacto.org/publication/transit-street-design-guide/introduction/service-

context/transit-frequency-volume/). Achieving 1.5 percent mode share on Ashland's Route 10 (with 10-minute headways with its historically high productivity) should be easily achieved.

4. **I seem to think reduction in vehicle ownership may be more driven by autonomous self- driving vehicles with a service like the Ashland Connector. Along with increased private EV purchases this will reduce GHG emissions and increase safety for pedestrians and bicyclists by reducing collisions.**

   All those things may turn out to be true. But ultimately, those changes alone will not achieve net zero by 2050 from the transportation sector. Without significant mode shift, around 50 percent of vehicle miles of travel in 2050 will be by vehicles with internal combustion engines. Not to mention the traffic congestion. An article in the New York Times entitled There is One Big Problem with Electric Cars provides some additional context for understanding the bigger issue.

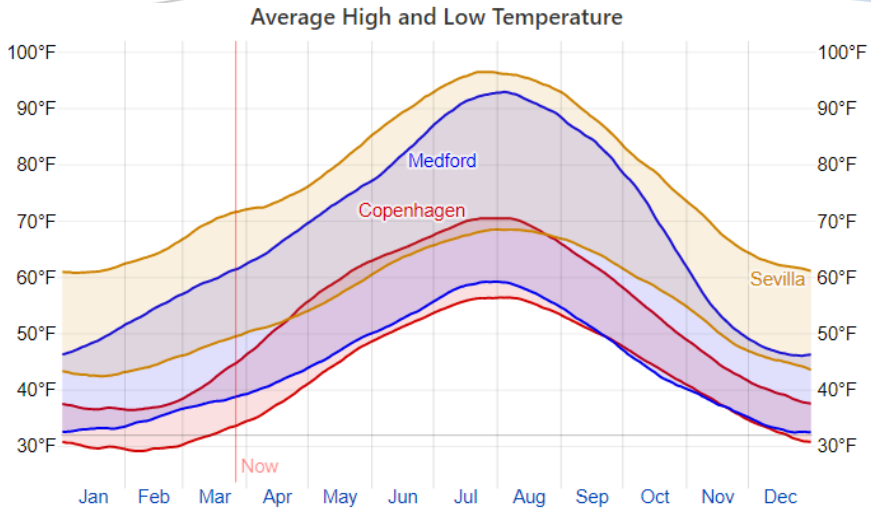
   Providing viable and safe bicycling and walking infrastructure is critical to achieving a more equitable transportation system. Not everyone can afford to own their own EV or summon an Uber like vehicle when they want to visit a friend across town.

5. **I like your policies that encourage EV charging.**

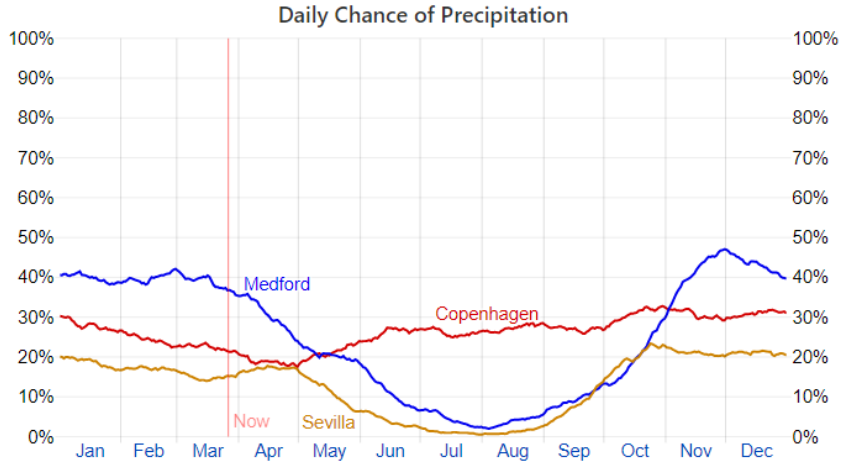
   EV charging is an integral infrastructure for a transportation system powered by electricity. Conditioning public parking for the use of EV's is a simple but effective way to communicate that "EV's" are the norm and ICE's are a part of the problem.

6. **For bicycling I would love to see participation increase from 2% to 42%, but given our climate and cost to increase bicycle corridors not sure that can happen.**

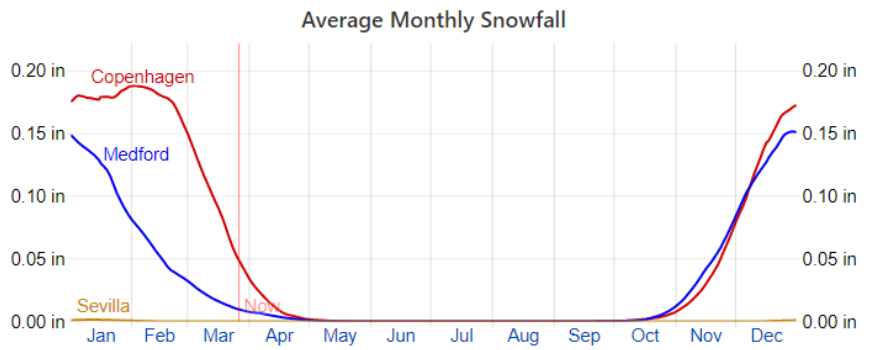
   The climate in the Rogue Valley is unique. But to characterize it as inhospitable to bicycle use fails to consider other cities where bicycling is the mode of choice for families, workers, students, shoppers, and everyone else. Below are comparisons of temperature, rainfall, and snowfall in Medford, Copenhagen and Seville. In Copenhagen, 62% of all citizens commute to work, school or university by bicycle. While Seville, Spain cut car use 27% in ten years as bike modal share hit 9%,




*The daily average high and low air temperature at 2 meters above the ground.*




*The percentage of days in which precipitation is observed, excluding trace quantities.*




*The average liquid-equivalent snowfall accumulated over the course of a sliding 31-day period centered on the day in question.*

Copenhagen's winter temperatures are colder and snowier than here in the Rogue Valley. Yet, "Copenhageners continue to cycle throughout the winter; the volume of bicycle traffic in the winter is roughly 2/3rds that of the summer." (source: City of Cyclists Reduces Approximately 90,000 tons of $CO_2$ per Year and has Over 50 percent of the City's Population Cycling to Work Everyday.

An eleven-minute long video entitled Cycling in Copenhagen through North American Eyes is, in fact, an eye opener. Please take a moment to view it. It'll open your eyes.

Funding public improvements is never easy. The FY 2020 to FY 2025 Ashland Transportation Capital Improvement Program (CIP) totals $40.6 million with $1.6 million slated for pedestrian improvements and $0.25 million for bicycles.

According to a 2013 report, out of Portland, the cost of at-grade, and raised cycle tracts runs around $25 and $68 per foot, respectively. In order to add cycle tracts to Main, Siskiyou, Lithia, Mountain, Oak, Ashland, Tolman Creek and Hersey over the course of 10 years would cost approximately $5.25 million to $14.3 million, depending upon design and using the 2013 cost estimates. Adjusting these figures to account for cost inflation, using the Federal Highway Administration's highway construction index, yields an estimated range of $6.25 to $17.0 million in today's dollars This estimate does not include the cost of right-of-way, if required.

When it comes time to design and build bicycle infrastructure, the city should do it once and do it right, and build raised cycle tracts. The improvements can be funded through the city's share of state gas taxes, system development charge fees (once the bicycle improvements are included in the CIP), state and federal grants, and a local gas tax (if one were to be approved).

Federal funding may be infinitely more readily available under HR2, Moving Forward Act, the pending reauthorization of the federal transportation act. The Act:

- Adds shared micromobility, including bikeshare and shared scooters, as an eligible expense in the Congestion Mitigation and Air Quality (CMAQ) program.
- Defines bikeshare as an "associated transit improvement" in US Code 5302 of Title 49.
- Provides for a 60% increase for the Transportation Alternatives Program (TAP), the largest federal funding source for bike infrastructure. TAP will allow for more streamlined, expedited construction of bike lanes.
- $250 million for the Active Transportation Connectivity Grant, which would fund regionally connected mobility networks.
- $250 million for the Community Climate Innovation Grant, which can be used for shared micromobility projects that contribute to reducing greenhouse gas emissions.
- Places a focus on Vision Zero.

**7. Do we have any data on how much bicycling safety can be improved with EVs with collision avoidance using existing roadways?**

A quick review of Google search results suggests that collision avoidance technologies work best for avoiding crashes with other motor vehicles.

"Autonomous emergency braking (AEB) is an advanced technology designed for collision prevention and crash severity reduction and is a promising intervention to improve cyclist safety. AEB technology uses optical sensors, cameras, and radar, or a combination of these, to detect obstacles. This technology was designed to prevent crashes between vehicles, but vehicle manufacturers are beginning to add the capability for vehicles to recognize cyclists as well. The addition of cyclist detection systems is anticipated to prevent crashes, injuries and fatal crashes. The limitations of AEB systems include the variability of effectiveness due to daylight and weather conditions, the difficulties in optimizing these systems for relatively low speeds, and the inability to predict dangerous or distracted human behavior." Cyclist Safety, An Information Source for Decision-Makers and Practitioners.

The real and ever-current risk of severe injury to a bicyclist when struck by an automobile will not substantially change in the foreseeable future. Consequently, high-speed, high volume roadways without cycle tracts (protected bike lanes) will not be utilized by most prospective bicyclists (the 51 percent of Ashland residents – as noted in question 1). It just isn't worth the risk.

**8. I really like the idea of converting the Plaza to a pedestrian only area.**

A pedestrian oriented plaza is a logical step in reducing the auto-centric design of Ashland. If only one space in the city were to be changed, the Plaza should top the list. The Plaza as a "pedestrian space" is the way many residents like to conceive of the area but the reality is that it largely serves as a place to park automobiles (providing more than 65 spaces roughly equal to the city's off-street lot at Pioneer and Lithia). The ring of parking at the Plaza creates a relatively small pedestrian only island. Additionally, the current configuration squanders the opportunity of nearby

shop-keepers and restaurants to “spill-out” of their doors to create a more engaging and lively public space for both residents and visitors.

**9. Why is electronic speed enforcement listed among the strategies to reduce the transportation system’s auto-centric design?**

Traffic speed enforcement is one among few police department tasks that can be automated. Using radar enforcement provides an opportunity for traffic enforcement officers to be reassigned to other high priority issues.

Table 6 clearly demonstrates the fallacy of the widely held belief that driving 5 MPH over the speed limit poses little risk of harm.

Yet, driving faster than the speed limit by 5 MPH rarely results in a ticket even though in a 25 MPH speed zone, 5 MPH is 20 percent faster than the legal limit. ORS 810.434 establishes an official upper limit for excessive speed. The statute specifies that only drivers who violate the speed limit by 11 miles per hour or greater can be cited when evidence of violation is documented using an electronic means. That statute, also, explicitly limits which Oregon cities can even employ electronic speed enforcement.

The official permissiveness illustrates just how completely the automobile, as the dominate, if not the exclusive mode of transportation in most communities, has undermined the law and subverted basic engineering and safety standards.

Finally, data suggests that a traffic stop or “’catch and release’ program in which certain members of the community are stopped pretextually, investigated disproportionately for potential criminality, and then, should no evidence of wrongdoing appear, allowed to go free without any formal sanction” are disproportionately experienced by minorities.” (source: Traffic Enforcement Through the Lens of Race: A Sequential Analysis of Post-Stop Outcomes in San Diego, California) While there is no evidence to suggest it happens locally using electronic speed enforcement will ensure that it never does.

Amending the ORS 810.434 to allow Ashland to use electronic speed and red-light enforcement, and changing the law to authorize citations when drivers exceed (by any amount) the posted speed limit are essential to wresting away the preeminent position that motor vehicles have over our community and protecting the lives of people who chose to walk or ride a bicycle. It is a part of Vision Zero.