



CORRIDOR PLAN

February 2024 **SUMMARY REPORT**

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1 GOALS & PURPOSE

Cordon Hazelgreen

STOP

ALL

GOALS & PURPOSE

he primary objective of the Cordon-Kuebler Corridor Plan project is to develop a multimodal corridor plan and an associated access management strategy that outlines a cohesive and consistent vision for the corridor. The following describes Marion County and City of Salem's shared vision for the corridor:

The Cordon-Kuebler Corridor is a vital multimodal corridor that serves existing and planned urban development as well as rural and agricultural uses. It provides safe and efficient mobility as a larger circumferential route around the Salem-Keizer region. The corridor balances local and regional traffic as well as access, safety, and mobility.

To achieve this vision the project team set the following goals for this Plan:

- **Safety:** Provide a corridor that enhances the safety for all transportation modes and users.
- **Mobility:** Optimize the performance of the corridor for the efficient movement of people and goods.
- Connectivity: Develop a multimodal corridor that connects all users to destinations within and beyond the corridor.
- Community and Economic Vitality: Provide a corridor that supports existing industry, encourages economic development, and enhances the physical and social wellbeing of local residents.



- **Strategic Investment:** Improve the corridor through informed and responsible stewardship of financial resources.
- **Coordination:** Develop a corridor consistent with adopted plans, where existing and planned land uses are supported by an efficient multimodal corridor, and collaboration amongst affected jurisdictions is fostered.

This Plan provides a comprehensive recommendation for the corridor that meets the goals listed above, including a prioritized list of projects. The Plan outlines strategies, policies, and projects that accommodate future regional growth and address community concerns related to traffic congestion, safety, and multimodal facilities.

This report provides a summary overview of the Cordon-Kuebler Corridor Plan. Each chapter in this report is a summary of moredetailed memorandum, which were prepared throughout the project and are provided in the Appendix for reference.

PROJECT AREA & CORRIDOR CHARACTERISTICS

he project corridor, referred to as the Cordon-Kuebler Corridor in this Plan, is 11.8 miles in length, consisting of Kuebler Boulevard, Cordon Road, and Hazelgreen Road (Figure 1). The corridor operates as a principal arterial along the eastern edge of the urban Salem-Keizer metropolitan area, serving as a gateway for vehicles and other travel modes to access nearby neighborhoods, businesses, schools, and other activities of interest. While the west side of the corridor generally abuts the Urban Growth Boundary (UGB), the east side of the corridor is outside of the UGB and is largely undeveloped and provides access to smaller cities east of Salem (e.g., Mt. Angel, Silverton, Turner).



The project corridor is under both Marion County and City of Salem jurisdiction at different points on the corridor. The southern end of the project corridor (from Kuebler Boulevard at 36th Avenue to Cordon Road at Caplinger Road) is under City of Salem jurisdiction. The remainder of the Cordon Road portion is under Marion County jurisdiction. Hazelgreen Road is partly under City jurisdiction and partly under County jurisdiction, with certain areas recently being added to the UGB as development has occurred.

The project corridor carries both regional and local traffic, averaging around 15,500 vehicles per day. Today, the corridor has two travel lanes (one in each direction) with wide shoulders, limited sidewalks, and left turn lanes at busy intersections. The corridor currently does not support walking and biking due to the large gaps in available bicycle and pedestrian infrastructure. There is a particular need for a safe and connected bicycle and pedestrian system given over a dozen public schools are located near or along the corridor (Figure 1). There are no transit stops along the study roadway segments, but a few Cherriots routes utilize the corridor while accessing other roadways along their routes. Infrastructure improvements are needed to adequately meet current and future travel demands, as the corridor serves a mix of urban and rural functions.





PROJECT PROCESS

PROJECT PROCESS

he project process included feedback from a well-rounded team of public agency staff, community members, and consultants to assess and determine the needs and desired improvements for the corridor. The project process included formal technical deliverables that documented the analysis findings as well as public involvement opportunities to inform the assessments being made and to receive valuable feedback that guided the project results. The project process is depicted in the flowchart below, with additional detailed graphics provided for key steps in the process.



PROJECT PROCESS



PUBLIC INVOLVEMENT

vital aspect of this project was to engage the community to share information about the project, better understand the concerns of residents, business owners, and travelers, and gather feedback on potential solutions. The project team utilized multiple channels of communication and hosted meaningful engagement opportunities to share project information and collect feedback. Comments, concerns, and recommendations from the corridor users were thoughtfully considered by the project team and influenced the development of this plan.

WHAT DID WE HEAR AT THE OPEN HOUSES?

- Clear support for safety as the top priority for the project
- Consistent support for safer and more connected pedestrian and bicycle infrastructure to provide alternative travel options along the corridor
- Conflicting support for the type of preferred pedestrian and bicycle infrastructure along the corridor
- Mixed support for Traffic Signals (Alternative #1) versus Roundabouts (Alternative #2)
- General concern for heavy vehicle and farming equipment mobility along the corridor

OPEN HOUSE #1 VIRTUAL ONLY

2022 MAY/JUNE 679 WEBSITE VIEWS 30 COMPLETED SURVEYS 73

COMMENTS

OPEN HOUSE #2 VIRTUAL + IN-PERSON



B CORRIDOR NEEDS & DEFICIENCIES

he project team conducted an assessment of vehicle operations, safety, and multimodal infrastructure along the corridor as well as gathered feedback from the users of the corridor as to where there were perceived issues and concerns. The project team took the combined information and identified the locations where key needs and deficiencies were recognized along the project corridor (Figure 2).





of the corridor, but they do not provide the separation desired for all ages and abilities on this type of higher speed roadway.

HE PREFERRED ALTERNATIVE

UU

3.0.0

TRAFFIC CONTROL & CROSS SECTION



unified and cohesive concept for the corridor was developed to meet the needs of the corridor into the future. Of primary importance, the corridor concept includes multimodal facilities that allow for safer and more connected travel for bicycles and pedestrians, as well as adequate vehicular lanes to facilitate both personal vehicles and freight/ heavy vehicles that frequent the corridor.

The corridor figure on the next page (Figure 3) provides an overview of the Preferred Alternative concept, including the desired traffic control and roadway cross-section. The corridor will include a raised median with enhanced pedestrian and bicycle facilities, including a continuous multi-use path. New and upgraded traffic signals are identified, and roundabouts are shown as a feasible alternative to traffic signals at some locations (subject to funding availability). At intersections where there is no existing or proposed traffic signal, the raised median would restrict all vehicle movements at the intersection to right-in, right-out only. However, allowance for full or partial turn movements will be considered at each intersection, Pennsylvania Ave and Carolina Ave in particular, at the time of project design. Final decisions will be based on the County Commissioners' judgment. This concept will be the guide for the County and City moving forward with regards to development along the corridor.



PROJECT LIST — PIECES TO MAKE THE WHOLE

onstructing the Cordon-Kuebler Corridor into the envisioned design will be a complex, costly, and time-intensive effort. To allow the County and City to phase these upgrades over many years, the Preferred Alternative was broken down into reasonably sized individual projects.

A Priority Level was assigned to each project based on its ability to meet criteria related to overall corridor goals. Six key criteria (shown to the right) were used to evaluate each project. The more criteria a project addressed, the higher of a priority level that project was given (e.g., projects meeting three or more criteria were considered high priority). The goal in prioritizing projects was to identify the projects which would provide the most benefit and contribute the most to achieving the project's identified vision and goals.

Figure 4 shows a map of the transportation projects for the Preferred Alternative, and Table 1, Table 2, and Table 3 describe each project in more detail. Each intersection and bridge project was assigned its own project number, and the roadway and multi-use path improvements were separated into approximately 1.0 to 3.0-mile sections based on cross-section changes and natural segmentation.





Figure 4: Prioritized Projects

PROJECTS:

- RW-1 99E to Cordon **RW-2** Hazelgreen to Silverton RW-3 Silverton to Center
- RW-4 Center to Caplinger
- RW-5 Caplinger to Lancaster RW-6 Lancaster to 36th

ROADWAY IMPROVEMENT INTERSECTION UPGRADE

IN-1 Lake Labish/Hazelgreen IN-10 Center/Cordon IN-2 Cordon/Hazelgreen IN-3 Kale/Cordon IN-4 Hayesville/Cordon IN-5 Ward/Cordon IN-6 Herrin/Cordon IN-7 Silverton/Cordon IN-8 Sunnyview/Cordon IN-9 Swegle/Cordon

MULTI-USE PATH EXTENSION

MU-1 99E to Cordon **MU-2** Hazelgreen to Silverton MU-3 Silverton to Center MU-4 Center to Caplinger MU-5.1 Caplinger to Lancaster NW Side MU-5.2 Caplinger to Lancaster SE Side MU-6.1 Lancaster to 36th NW Side MU-6.2 Lancaster to 36th SE Side

MULTI-USE PATH OVERCROSSING

MU-7 OR 22 Overcrossing

BRIDGE WIDENING

BW-1 OR 22 Overpass Bridge BW-2 Mill Creek Bridge BW-3 Railroad Overpass Bridge

IN-11 Auburn/Cordon

IN-13 Macleay/Cordon

IN-15 Mill Creek/Kuebler

IN-14 Gaffin/Cordon

IN-16 Turner/Kuebler

IN-17 36th/Kuebler

IN-12 State/Cordon

Table 1: Marion County Project List

PROJECT ID	PROJECT NAME	DESCRIPTION	LENGTH (MILES)	PRIORITY	COST ESTIMATE (2023 DOLLARS) ¹
IN-2	Cordon/Hazelgreen Intersection Upgrade	Install either a traffic signal and add a dedicated EBR turn lane; or a single-lane roundabout	N/A	High	\$4,970,000 (Roundabout) \$4,400,000 (Signal)
IN-3	Kale/Cordon Intersection Upgrade	Install either a traffic signal and add a dedicated NBL turn lane; or a single-lane roundabout	N/A	Low	\$4,500,000
IN-4	Hayesville/Cordon Intersection Upgrade	Install either a traffic signal and add dedicated NBL, EBL, and EBR turn lanes; or a single-lane roundabout	N/A	Medium	\$4,000,000
IN-5	Ward/Cordon Intersection Upgrade	Install either a traffic signal and add dedicated NBL, EBL, and EBR turn lanes; or a single-lane roundabout	N/A	Low	\$4,000,000
IN-6	Herrin/Cordon Intersection Upgrade	Install either a traffic signal and add dedicated NBL, EBL, and EBR turn lanes; or a single-lane roundabout	N/A	Low	\$4,000,000
IN-7	Silverton/Cordon Intersection Upgrade	Either replace the existing traffic signal and add a dedicated EBR turn lane; and an additional NBT and SBT lane or install a dual-lane roundabout	N/A	Low	\$4,250,000
IN-8	Sunnyview/Cordon Intersection Upgrade	Replace the existing traffic signal and add an additional NBT and SBT lane	N/A	Medium	\$3,750,000
IN-9	Swegle/Cordon Intersection Upgrade	Install a new traffic signal and add dedicated EBL and WBL turn lanes and an additional NBT and SBT lane	N/A	Medium	\$4,305,000
IN-10	Center/Cordon Intersection Upgrade	Replace the existing traffic signal and add a dedicated NBR turn lane and an additional NBT and SBT lane	N/A	High	\$4,660,000
IN-11	Auburn/Cordon Intersection Upgrade	Install a new traffic signal and add dedicated EBL and WBL turn lanes and an additional NBT and SBT lane ²	N/A	Medium	\$4,305,000
IN-12	State/Cordon Intersection Upgrade	Replace the existing traffic signal and add dedicated SBR, EBR, and WBR turn lanes; dual NBL, SBL, EBL, and WBL turn lanes; and an additional NBT and SBT lane ²	N/A	Low	\$5,500,000

1 Active development is occuring at the time of this study.

"IN" project cost estimates include cost of roadway widening that is consistent with the Preferred Alternative.

Table 1: Marion County Project List (Continued)

PROJECT ID	PROJECT NAME	DESCRIPTION	LENGTH (MILES)	PRIORITY	COST ESTIMATE (2023 DOLLARS) ¹
RW-2	Hazelgreen to Silverton Roadway Improvement	Widen to two vehicle lanes with a center median, shoulders, and a landscape strip	2.4	High	\$24,680,000
RW-3	Silverton to Center Roadway Improvement	Widen to four vehicle lanes with a center median, shoulders, and a landscape strip	2.2	Medium	\$35,700,000
RW-4	Center to Caplinger Roadway Improvement	Widen to four vehicle lanes with a center median, shoulders, and a landscape strip	1.5	High	\$22,855,000
MU-2	Hazelgreen to Silverton Multi-Use Path Extension	Install a multi-use path on the west side of Cordon Road	2.4	Medium	\$8,200,000
MU-3	Silverton to Center Multi-Use Path Extension	Install a multi-use path on the west side of Cordon Road	2.2	High	\$7,600,000
MU-4	Center to Caplinger Multi-Use Path Extension	Install a multi-use path on the west side of Cordon Road	1.5	Medium	\$5,120,000

Table 2: Joint County & City Project List

PROJECT ID	PROJECT NAME	DESCRIPTION	LENGTH (MILES)	PRIORITY	COST ESTIMATE (2023 DOLLARS) ¹
RW-1	99E to Cordon (Hazelgreen Rd) Roadway Improvement	Widen to two vehicle lanes with a center turn lane, bicycle lanes, planting strips, and a sidewalk on the north side of the street	1.3	Medium	\$12,700,000
MU-1	99E to Cordon (Hazelgreen Rd) Multi-Use Path Extension	Install a multi-use path on the south side of Hazelgreen Road	1.3	Low	\$4,500,000

¹ Active development is occuring at the time of this study.

"IN" project cost estimates include cost of roadway widening that is consistent with the Preferred Alternative.

Table 3: City of Salem Project List

PROJECT ID	PROJECT NAME	DESCRIPTION	LENGTH (MILES)	PRIORITY	COST ESTIMATE (2023 DOLLARS) ¹
IN-1	Lake Labish/Hazelgreen Intersection Upgrade	Install a traffic signal and maintain existing lane configurations	N/A	Low	\$2,500,000
IN-13	Macleay/Cordon Intersection Upgrade	Replace the existing traffic signal and add dedicated EBL and WBL turn lanes and an additional NBT and SBT lane	N/A	Low	\$4,305,000
IN-14	Gaffin/Cordon Intersection Upgrade	Install a new traffic signal and add dedicated WBR and NBR turn lanes and an additional NBT and SBT lane	N/A	Low	\$4,250,000
IN-15	Mill Creek/Kuebler Intersection Upgrade	Replace the existing traffic signal and add an additional WBT and EBT lane	N/A	Low	\$4,305,000
IN-16	Turner/Kuebler Intersection Upgrade	Replace the existing traffic signal and add dedicated NBR, WBR, and EBR turn lanes; dual NBL and SBR turn lanes; and an additional WBT and EBT lane	N/A	Low	\$4,715,000
IN-17	36th/Kuebler Intersection Upgrade	Replace the existing traffic signal and add dedicated NBR and WBR turn lanes, dual NBL and SBL turn lanes, and an additional WBT and EBT lane	N/A	Low	\$5,490,000
BW-1	OR 22 Overpass Bridge Widening	Widen the bridge to accommodate the applicable roadway cross-section	N/A	Low	-
BW-2	Mill Creek Bridge Widening	Widen the bridge to accommodate the applicable roadway cross-section	N/A	Medium	\$7,400,000
BW-3	Railroad Overpass Bridge Widening	Widen the bridge to accommodate the applicable roadway cross-section	N/A	Medium	\$5,700,000

1 Active development is occuring at the time of this study.

"IN" project cost estimates include cost of roadway widening that is consistent with the Preferred Alternative.

PROJECT ID	PROJECT NAME	DESCRIPTION	LENGTH (MILES)	PRIORITY	COST ESTIMATE (2023 DOLLARS) ¹
RW-5	Caplinger to Lancaster Roadway Improvement	Widen to four vehicle lanes with a raised center median, shoulders, and planting strips	1.6	Medium	\$26,000,000
RW-6	Lancaster to 36th Roadway Improvement	Widen to four vehicle lanes with a raised center median, shoulders, and planting strips	1.6	High	\$26,000,000
MU-5.1	Caplinger to Lancaster Multi-Use Path Extension (NW Side)	Install a multi-use path on the northwest side of Cordon Road	1.6	High	\$5,500,000
MU-5.2	Caplinger to Lancaster Multi-Use Path Extension (SE Side)	Install a multi-use path on the southeast side of Cordon Road	1.6	Medium	\$5,500,000
MU-6.1	Lancaster to 36th Multi-Use Path Extension (NW Side)	Install a multi-use path on the northwest side of Kuebler Boulevard	1.6	Medium	\$5,500,000
MU-6.1	Lancaster to 36th Multi-Use Path Extension (SE Side)	Install a multi-use path on the southeast side of Kuebler Boulevard	1.6	High	\$5,500,000
MU-7	OR 22 Multi-Use Path Overcrossing	Install a cantilevered multi-use path structure onto the northwest side of the OR 22 overcrossing bridge	N/A	High	\$3,845,000

1

Active development is occuring at the time of this study.

"IN" project cost estimates include cost of roadway widening that is consistent with the Preferred Alternative.

CONSIDERATIONS AS THE PREFERRED ALTERNATIVE IS BUILT

This Corridor Plan and the design of the Preferred Alternative assumes that there are no changes to the current City of Salem Urban Growth Boundary (UGB), which does not presently extend east of Cordon Road.

However, if the UGB were to be expanded and parcels east of Cordon Road were developed into urban land uses after the adoption of this plan, the following multimodal safety and access management practices should be considered as well:



PEDESTRIAN AND BICYCLES:

- Identify and provide connected and accessible pedestrian and bicycle facilities on the east side of Cordon Road
- Consider implementing enhanced pedestrian crossings across the project corridor near significant pedestrian land use generators



TRANSIT:

- Coordinate with Cherriots Transit on potential bus stops or additional bus routes along Cordon Road
- Provide bus stop amenities that meet ADA requirements, bus pull-outs where appropriate, etc.



ACCESS MANAGEMENT:

 Identify opportunities for frontage and backage roads on the east side of Cordon Road that would minimize out-of-direction travel for vehicles and transit

5 ACCESS MANAGEMENT STRATEGIES

ACCESS MANAGEMENT STRATEGIES

primary reason for developing the Corridor Plan was to address the current jurisdictional inconsistencies in the land use review and access permitting processes along the Cordon-Kuebler Corridor.

The Cordon Road Resolution, adopted by Marion County in 1981, aims to regulate the number of access points permitted along Cordon Road. This resolution applies to all properties along the portion of Cordon Road under Marion County jurisdiction, and therefore does not provide policy direction for Hazelgreen Road, Kuebler Boulevard, or the portion of Cordon Road under City of Salem jurisdiction. Additionally, some of the language of the resolution is ambiguous and allows for subjective determination of access rights in some cases.

Within the City of Salem, Cordon Road, Kuebler Boulevard, and Hazelgreen Road are classified as Parkways. Land use and access management onto these roadways is governed by the Salem Revised Code (SRC). The SRC states that no private access shall be granted onto a Parkway. The only exception is for land uses generating more than 10,000 vehicle trips per day, which may be granted access via a private street (not a driveway).

There are several segments of the Cordon-Kuebler Corridor with a very high density of accesses which, if not managed, will reduce the safety and mobility of the corridor as land uses develop and traffic volumes increase. There is a need for consistent guidelines for access management to ensure the corridor functions safely and efficiently into the future.

> There are over **200 private** driveways in the study area along Cordon Road, Kuebler Boulevard, and Hazelgreen Road. In some locations, driveways are less than 75 feet apart.



- Every additional driveway increases crash risk by 4%¹
- Undivided arterial roadways have a 55% higher crash risk than those with a raised median¹
- Every 10 additional driveways per mile reduces travel speeds by 2.5 mph¹

Gluck, J., H. Levinson, and V. Stover. NCHRP Report420: Impacts of Access Management. Transportation Research Board of the National Academies, Washington, D.C., 1999.

OVERARCHING GOALS OF ACCESS MANAGEMENT

s defined in the 2010 Access Management Manual, "access management is the coordinated planning, regulation, and design of access between roadways and land development. It encompasses a range of methods that promote the efficient and safe movement of people and goods by reducing conflicts on the roadway system and at its interface with other modes of travel."

Successful implementation of access management provides significant benefits to a community, both for those traveling on the roadway and for those who live, work, shop, or own property nearby. Research indicates that implementing access management strategies can reduce delay by up to 60%, increase capacity by up to 45%, and reduce crashes by up to 50%.² In addition, well-



planned access management can be a catalyst for economic growth and development, can result in more efficient movement of freight, and can increase property values.

STRATEGIES & BEST PRACTICES

ccess management can be implemented using numerous strategies that can encompass infrastructure, land use planning, development review, policy, and education. Below are a few access management strategies and best practices that are well-suited for the Cordon-Kuebler Corridor.

- Limiting Turning Movements within Intersection Functional Areas
- Consolidating Access Points
- Installing Raised Center Medians
- Constructing Frontage Roads
 and Backage Roads
- Installing U-turns (Mid-block and at Signals)
- Installing Roundabouts
- Updating Access Spacing Standards
- Implementing Long-range Land Use and Street Connectivity Planning
- Providing Public Public Education

²

Williams, K., V. Stover, K. Dixon, and P. Demosthenes. Access Management Manual, 2nd ed. Transportation Research Board of the National Academies, Washington, D.C., 2014.

FUTURE POLICY CONSIDERATIONS

arion County should consider the following potential policy revisions or clarifications related to access management to both harmonize County and City of Salem policies as well as provide clearer direction on access management options as parcels along the corridor develop.

- Consider increasing access spacing standards on Cordon Road to one (1) mile, consistent with the City of Salem standard for Parkways (Hazelgreen Road, Cordon Road, and Kuebler Boulevard). Alternatively, the County could establish a new Parkway functional classification, convert the respective corridor roadways to Parkways, and then establish the recommended access spacing standard for this functional classification.
- Consider modifying Policy 3, Section 10.1.3 in the County's Rural Transportation System Plan to specify that County roads within City limits, in the UGB, or directly adjacent to the UGB will be subject to City access management policies and standards.
- Provide clarity to the 1981 Cordon Road Resolution regarding the types of land use changes or requests that would trigger a required change in access for a parcel.
- Provide clarity to the 1981 Cordon Road Resolution regarding the term "wherever possible" to more specifically mean "where reasonable alternative access exists."

SUGGESTED CRITERIA FOR MANAGING FUTURE ACCESS

- No new accesses should be permitted for parcels with frontage on, or existing access to, a public street that is not Cordon Road, Kuebler Boulevard, or Hazelgreen Road.
- Case-by-case decisions for permitting new accesses will be made for parcels that do not have frontage onto other existing facilities but may be able to take access from an alternative, future public facility, such as a future backage or frontage road. In these instances, the City or County may consider temporary permits for direct access until frontage or backage road connections are constructed.
- New accesses will likely be permitted for parcels that do not have frontage on any other public street and where there are both no identified future frontage/backage roads in the vicinity and there is more than one parcel between it and the next closest public street.



APPENDIX

A	Technical Memorandum #1: Public Involvement Plan
B	Technical Memorandum #2: Corridor Vision Plan
C	Technical Memorandum #3: Existing Intersections and Segment Operations Analysis
D	Technical Memorandum #4: Existing Safety, Emergency and Multimodal Analysis
E	Technical Memorandum #5: Future Forecasts and Traffic Operations Analysis
F	Technical Memorandum #6: Transportation Alternatives
G	Technical Memorandum #7: Evaluate and Prioritize Recommended Projects
н	Technical Memorandum #8: Access Management Plan
I	Project Concept Drawings & Cost Estimates