



Community Advisory Committee - Meeting #8

Thursday, October 17, 2019

6:00 – 8:15 PM

Happy Valley City Hall – Council Chambers

16000 SE Misty Drive, Happy Valley, OR

ITEM	TIME
Welcome and Introductory Items a. Welcome - Michael Walter b. Where we are in the process and today's agenda – Joe Dills, APG	6:00-6:10 PM
Refresher on Plans Created to Date <i>This is an informational item, as requested by the CAC in September. See attached materials. A summary presentation will be made at the meeting.</i>	6:10-6:25 PM
Draft Parks Plan <i>How many and what types of parks will be needed for Pleasant Valley/North Carver as it develops over time? An analysis has been prepared to address this question – see attached memorandum.</i> a. Presentation – Steve Duh, Conservation Technix b. Discussion c. CAC Direction – The request from the project team is: does the CAC support use of the Parks Plan memo (with any refinements) for drafting an update to the Happy Valley Park and Recreation Master Plan?	6:25-7:00 PM
Transportation Analysis a. Presentation – Reah Flisakowski, DKS Associates b. Discussion c. CAC Direction – The request from the project team is: does the CAC support use of the Transportation Analysis memo (with any refinements/follow up) as basis for updating the Happy Valley Transportation System Plan?	7:00-8:00 PM
Public Comment and Next Steps a. Public Comment b. Next Steps – Next meeting: December 5, 2019	8:00 – 8:15 PM

MEMORANDUM

“Refresher” Plan Set – Progress to Date

Pleasant/Valley North Carver Comprehensive Plan

DATE October 10, 2019
TO Project Committees
FROM Joe Dills, Angelo Planning Group

As requested by the Community Advisory Committee (CAC), attached is a “refresher” set of plan concepts and maps showing progress to date on the Pleasant Valley/North Carver Comprehensive Plan. This is a selective compilation of the key concepts and working recommendations for the plan. Background analyses and progress drafts are available on the project web site (See [CAC Agendas and Packets](#)).

Attached are:

- Vision and Guiding Principles
- Plan Area – By The Numbers
- The Plan Area Today – Context and Landscape
- Plan Concepts – Walkable Neighborhoods
- Map – Walkable Neighborhoods Framework
- Refined Land Use Plan (includes CAC Recommendations, June 2019)
- Refined Land Use Plan Metrics (September 12, 2019)
- Plan Concepts – Pleasant Valley Downtown District
- Pleasant Valley Downtown District – Options
- Plan Concepts – North Carver Waterfront District
- North Carver Downtown District – Options
- Refined Street Network Plan (includes CAC Recommendations, June 2019)
- Plan Concepts – Foster Parkway Design Options
- Refined Plan Bikeways and Trail Network (includes CAC Recommendations, June 2019)



MEMORANDUM

Vision and Guiding Principles

Pleasant Valley/North Carver Comprehensive Plan

DATE December 5, 2018
TO PV/NC Comprehensive Plan TAC and CAC Members
FROM Joe Dills and Jamin Kimmell, Angelo Planning Group

The purpose of this memo is to document a draft vision statement and set of guiding principles for the Pleasant Valley/North Carver (PV/NC) Comprehensive Plan. The vision and principles set forth key ideas that will shape the development and implementation of the plan. They were drafted based on input received from the first meetings of the Technical Advisory Committee (TAC) and Community Advisory Committee (CAC) on October 11, 2018.

VISION STATEMENT

The Pleasant Valley/North Carver area is an integral part of the growing Happy Valley community, and a natural extension of East Happy Valley. The area is comprised of a network of walkable neighborhoods, vibrant mixed-use centers, and thriving employment areas. The natural beauty of the landscape is embraced, the ecological health of the area is preserved and enhanced through environmental stewardship, and nature is made part of every neighborhood. The Carver riverfront has been transformed to include great public access and unique destinations. The area is supported by a resilient and safe network of streets, transit service, infrastructure, high-quality schools, and attractive parks and trails.

GUIDING PRINCIPLES

Promote a Sense of Community. All development is planned and design to create a strong identity and sense of community in Pleasant Valley and North Carver.

Preserve and Celebrate Nature. Nature is protected, celebrated, and integrated into the community. Stream and habitat corridors are preserved and enhanced to ensure they can provide critical ecological functions. People can experience nature up-close through a network of parks and trails. People can appreciate nature from afar, in everyday situations, though views of rolling hills and forested buttes.

Form Walkable, Welcoming Neighborhoods. Neighborhoods are more than a collection of housing. Neighborhoods feel and function like villages: welcoming communities that make room for people of all ages, abilities, and life experiences. Within each neighborhood, housing options include family-sized homes, compact cottages, and livable townhomes and apartments where appropriate. Streets and blocks are designed for walking and local shops and services are within walking distance.

Create Vibrant, Mixed-Use Centers. People gather in town centers to shop, play, and celebrate as a community. Mixed-use buildings allow people to live in these centers, ensuring that streets are alive with activity both during the day and in the evenings. The centers are destinations because they are built around special places, such as the waterfront of the Clackamas River or the confluence of important streets.

Craft Distinctive Places. People perceive the communities in the plan area as distinctive places. Homes and buildings are designed to be varied and interesting. Gateways into the area and individual neighborhoods are marked with distinctive public art or monuments. Unique features are designed into corridors and centers to reinforce a sense of place.

Attract Local Jobs and Businesses. Residents have opportunities to live and work in the same community. Local jobs are available to people with a range of backgrounds and skills, and all pay a living wage. Businesses are attracted by unique advantages of locating in the area and reinforce the development of industry clusters.

Design a Resilient, Connected Transportation System. A robust network of streets and transit routes allow people to move efficiently in, out, and across the area. Streets are designed to both manage traffic flow and encourage walking, biking, and riding transit. Transportation infrastructure is built prior to or concurrent with development.

Ensure Regional Fit. The plan area is integrated with the regional transportation system, land use patterns, and public facilities network. The plan area is viewed both as a distinct, individual place and a part of a larger system of neighboring cities and rural areas.

Plan for Fiscal Health. The plan can be implemented because it addresses fiscal realities. Service providers—including transportation, sewer, water, stormwater, parks, schools, and parks—can build infrastructure to support development because funding mechanisms are aligned with needs and costs.

Plan Area – By the Numbers

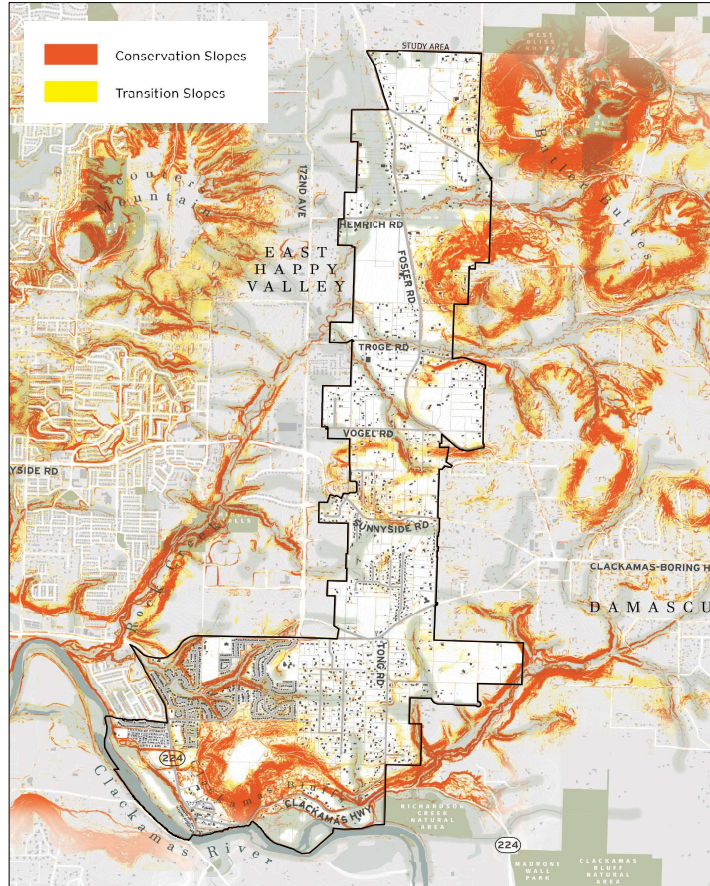


2,705 acres 1,685 properties 1.6 acres/parcel (ave.)

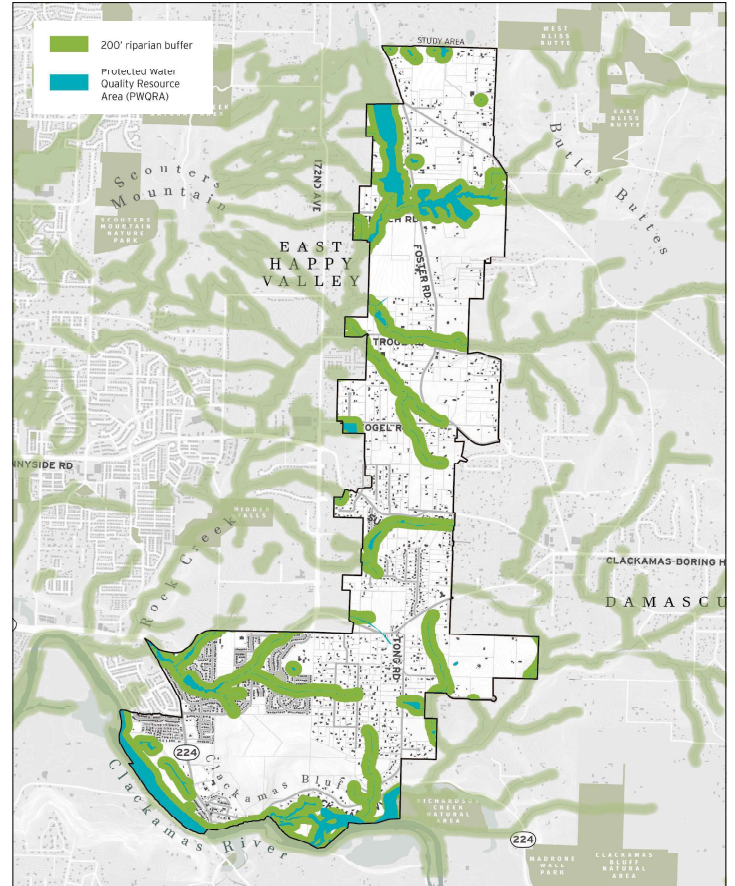
1,735 households 11,400 feet of riverfront



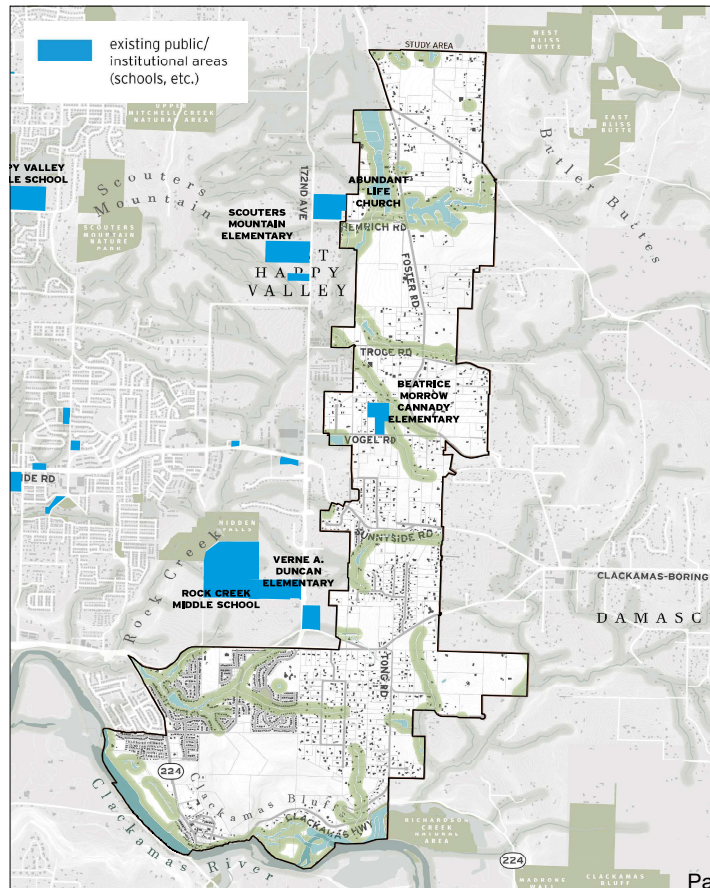
Steep slopes



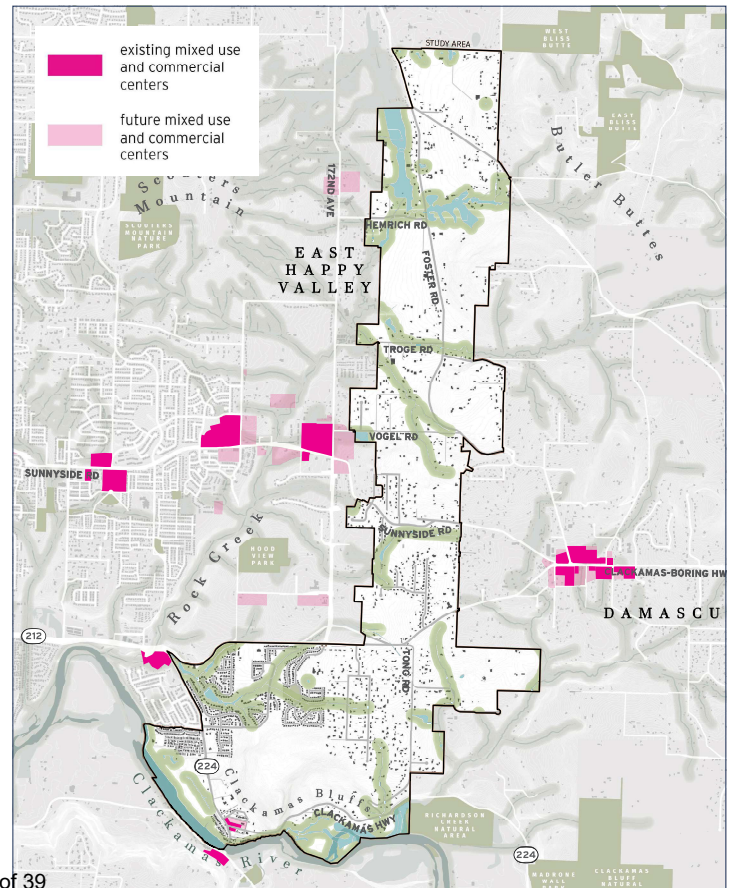
Natural resources



Public and institutional uses



Mixed use and commercial centers





Key Principles

- Organize new development to “fit the land” and create recognizable places with distinct identity
- Tailor housing types, mix, and density to each neighborhood
- Create a robust network of connections between neighborhoods (including connections to East Happy Valley)
- Provide easy access to parks and schools for each neighborhood
- Provide walkable access to neighborhood green spaces, commercial centers, the river, and other destinations
- Celebrate and protect the natural areas and habitat within and between neighborhoods

Precedent Example

Sunnyside Village (Happy Valley, OR)



Neighborhood Types

The amount and type of existing development today helps determine how neighborhoods will look in the future. There are three conceptual types of neighborhood areas within the Pleasant Valley/North Carver area:

Potential New Neighborhoods

Areas with a mix of pre-existing development and buildable land. These have potential and flexibility to create new walkable neighborhoods over time.

Existing Neighborhoods (large lot)

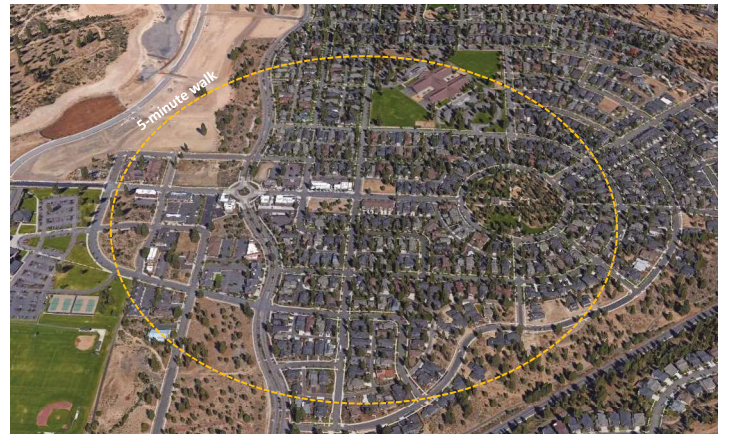
Existing residential development with rural residential lot sizes, generally less than 3 acres. These areas have some limited flexibility for infill, and more potential if redeveloped over time.

Existing Neighborhoods (small lot)

Platted and fully-developed residential areas. These are not flexible in the near term, except through individual choices like accessory dwelling units or incremental redevelopment.

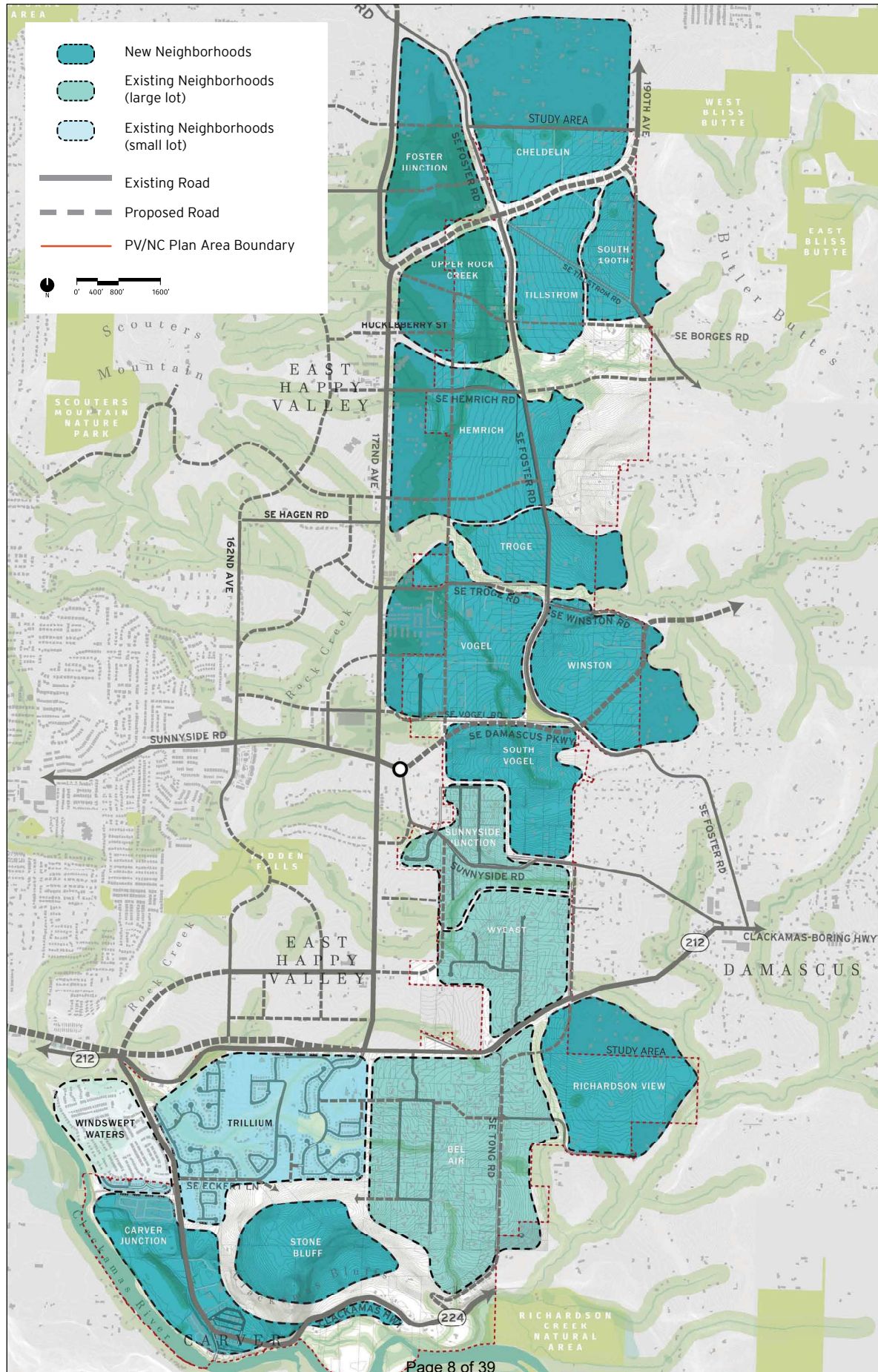
Precedent Example

Northwest Crossing (Bend, OR)



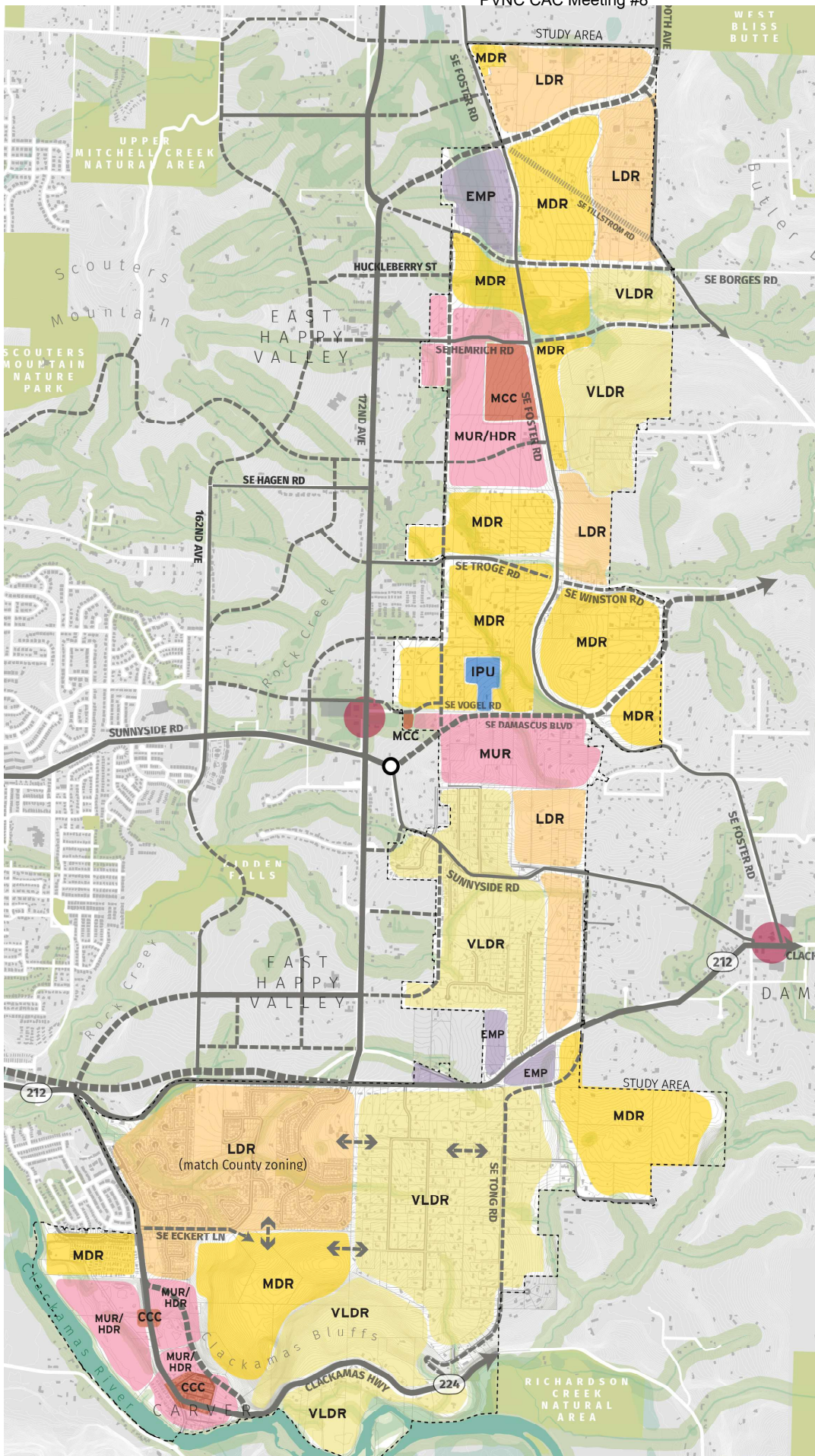
Plan Concepts | Walkable Neighborhoods

PVNC CAC Meeting #8



REFINED PLAN LAND USE

Includes CAC Recommendations,
June 2019



- Streets (Existing)
- - - Streets (Proposed)
- Town Center

Land Use District

- Very Low Density Residential
- Low Density Residential
- Medium Density Residential
- Mixed Use Residential / High Density Residential
- Mixed Commercial Center/ Community Commercial Center
- Employment
- Institutional and Public Use

0' 400' 800' 1600' 9/23/19

PV/NC Land Use - Analysis of Refined Concept (Draft - subject to change)

9/12/2019

Residential - Unconstrained Lands

Land Use	Gross Acres	Unconstrained Acres	Net Buildable Acres	Implementing Zones	Blended Max Density (units/net acre)	Max Units	Minimum Density (80% of max)	Minimum Units
VLDR	742	435	304	R-20 and R-15	2.54	773	2.0	619
LDR	351	285	200	R-10, R-8.5, R-7	5.2	1,044	4.2	836
MDR	731	525	367	R-5, MUR-S	8.7	3,200	7.0	2,560
HDR ¹	138	83	58	SFA, MURA	15.0	876	12.0	701
MUR ¹	138	83	58	MUR M1-M2, MURX	25.0	1,461	20.0	1,169
Total	2,099	1,411	988	--	--	7,355	--	5,884

Density Transfer/PUD Clustering for Constrained Lands

Acres Eligible for Density Transfer/Clustering	Density Transfer/Clustering (units/acre)	Units
Land Eligible for Density Transfer ²	510	1,020

Max Density Summary

Total Max Units	7,355
Total Max Units w/ Transfer	8,375
Max Density	7.4
Max Density w/ Transfer	8.5

Minimum Density (80% of Max) Summary

Total Projected Units	5,884
Projected Units w/ Transfer	6,904
Projected Density	6.0
Projected Density w/ Transfer	7.0

Housing Type Summary

SFD Units ³	4,248
SFD %	51%
MF/SFA Units ³	4,127
MF/SFA %	49%

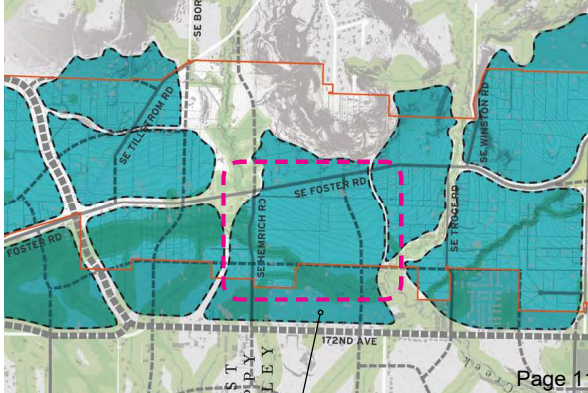
¹ Assumes that the amount of land in areas shown as MUR/HDR is split at 50% MUR and 50% HDR.² Includes undeveloped land within residential zones in Conservation Slopes, Water Quality Resource Areas (75 foot buffer), and Habitat Conservation Areas (High or Moderate Value). No density transfer is assumed for Transition Slope areas.³ Assumes that VLDR and LDR are 100% single-family detached; MDR is 60% single-family detached/40% multi-family/single-family attached; and HDR and MUR are 100% multi-family/single-family attached. Assumes all density transfer units are split 50/50 between SFD and MF/SFA

Commercial, Employment, and IPU

Land Use	Gross Acres	Unconstrained Acres	Net Buildable Acres	Max Density (units/net acre)	Max Units	Projected Density (80% of max)	Projected Units
CCC ⁴	4	3	2	30	47	24.0	37
MCC ⁴	26	25	18	30	535	24.0	427
EMP	74	42	30	--	--	--	--
IPU	8	7	5	--	--	--	--
Subtotal	111	77	54	--	582	--	464

⁴ Density and housing unit projections for these zones assume that all zones develop with vertical mixed-use. This is highly unlikely, but it illustrates the maximum residential capacity of the zones. The housing units in these commercial zones should be considered "bonus" units - all the projected housing need must be met in the residential zones.

What is there now?



What makes a great downtown district?



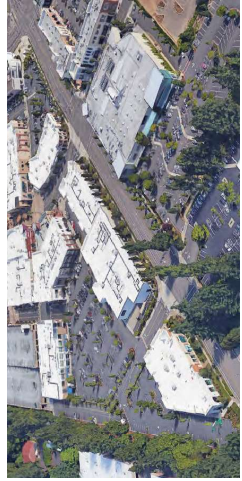
+ Pleasant Walking Environment



+ Activated corners + on street parking



+ Connected to Context



+ Framed parking lots

What are some successful examples?

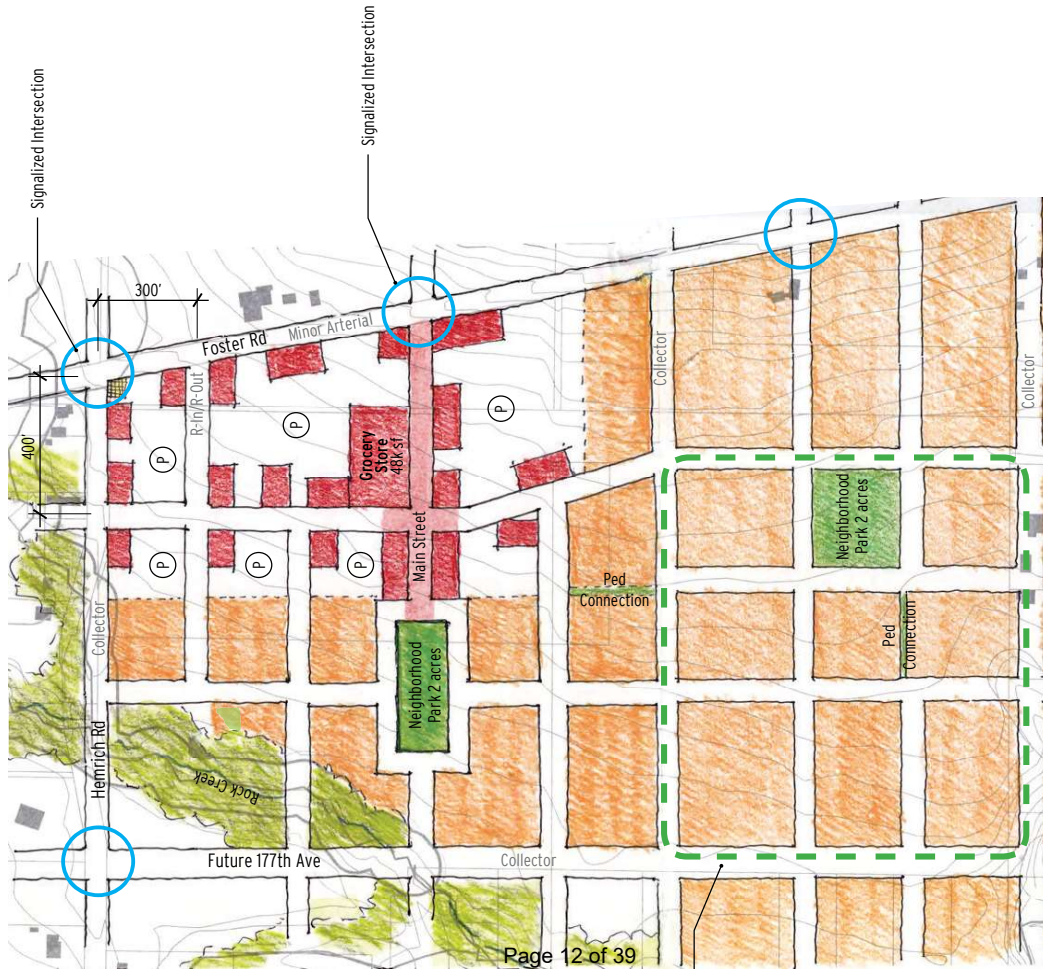
Happy Valley Town Center (New Seasons)



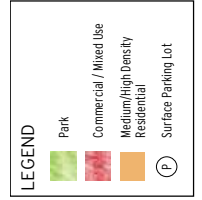
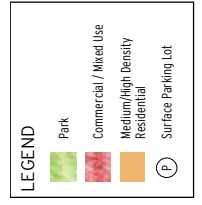
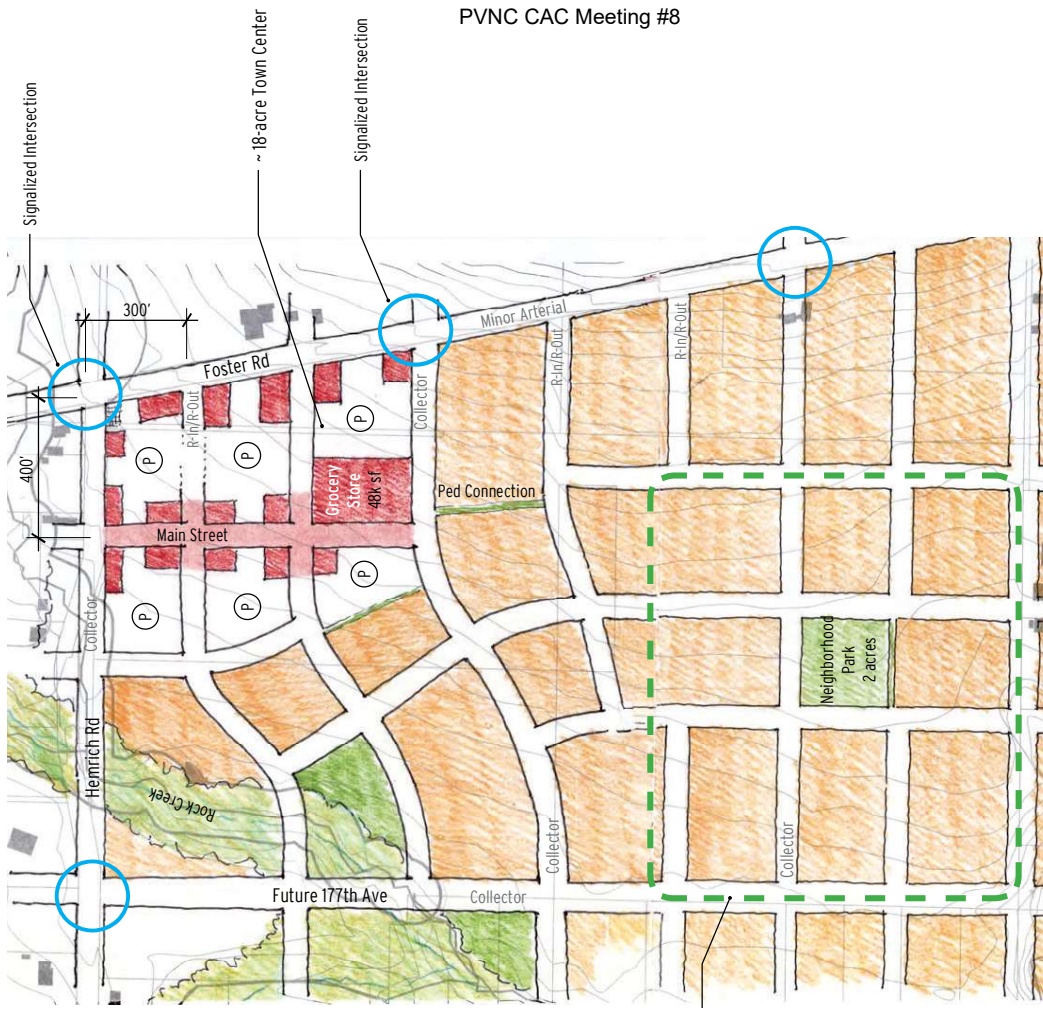
Orenco Town Center (Hillsboro, OR)



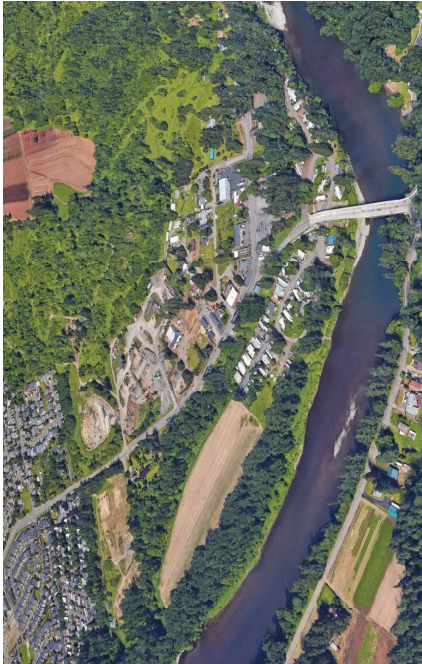
Concept A - Main Street Oriented to Foster



Concept B - Main Street Oriented to Hemrich



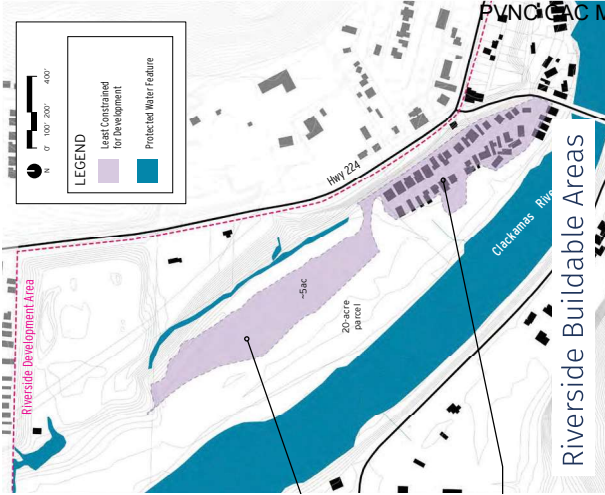
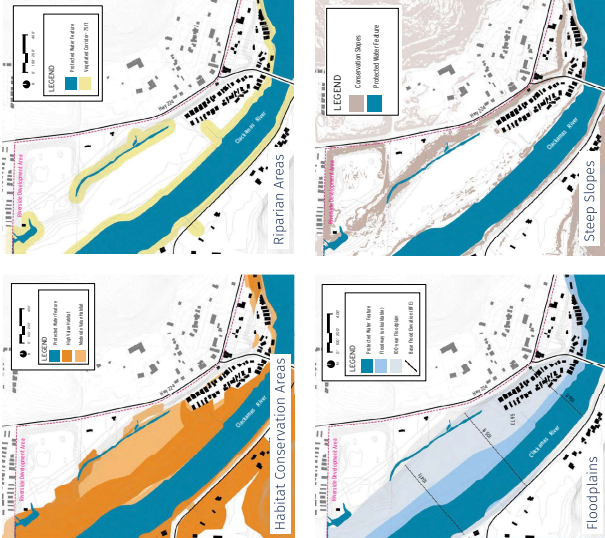
What is there now?



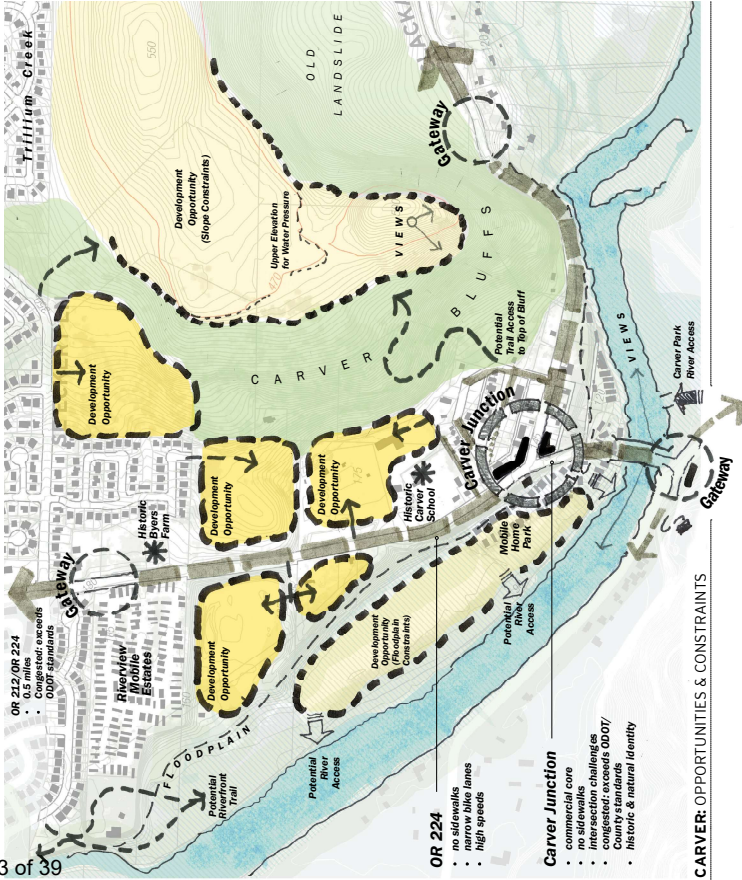
The Carver junction is a special place. The beauty of the Clackamas River and surrounding buttes and the historic significance of this junction combine to create a unique sense of place.



Where is the buildable land on the waterfront?

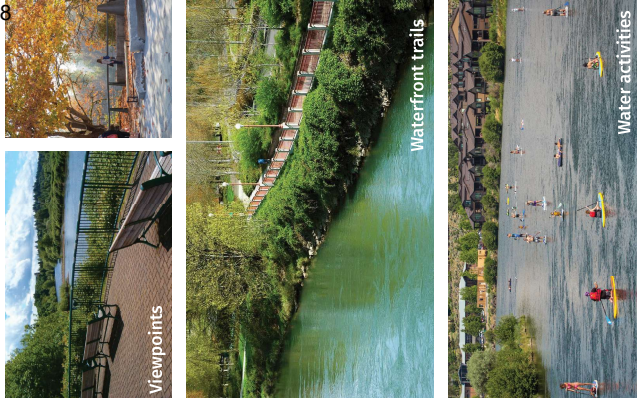


What are the opportunities and constraints?

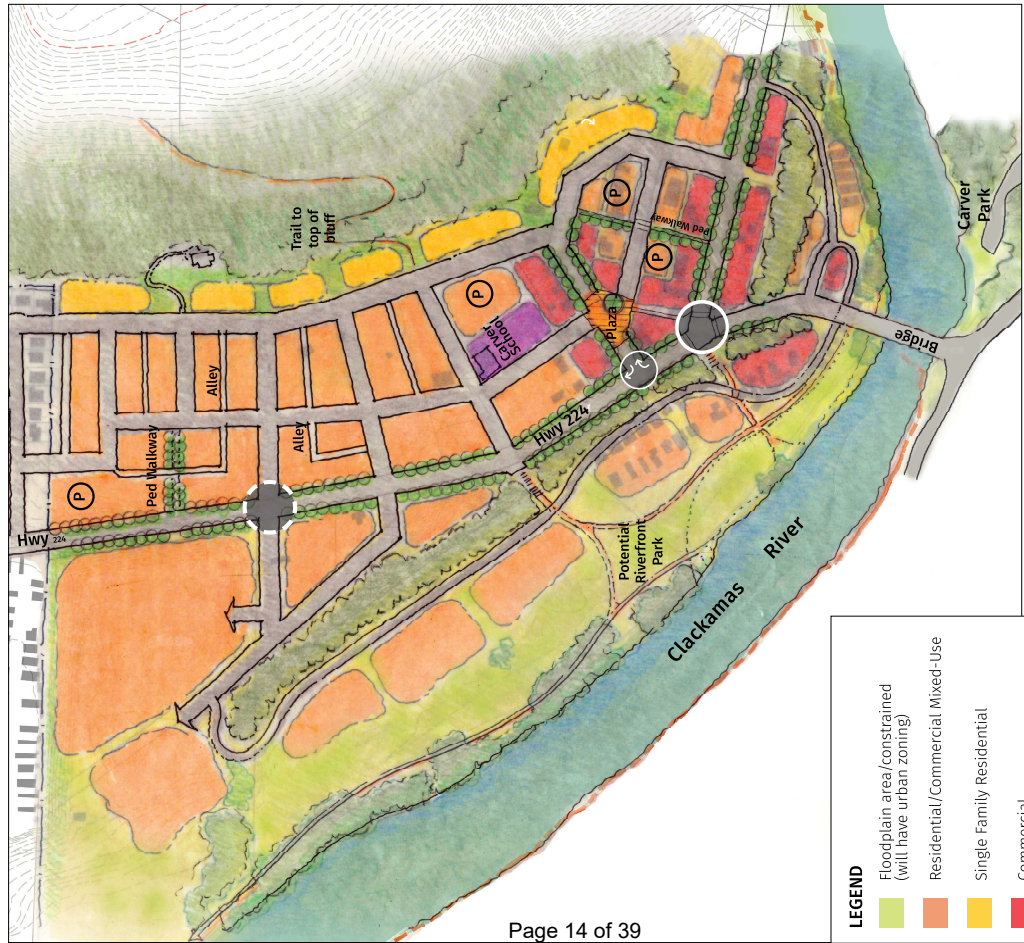


What could the North Carver waterfront look like?

The North Carver waterfront is envisioned to develop into a destination that both encourages new development and preserves the natural and historic features that make it unique. Carver could become a regional amenity, with a large riverfront park, trails, restaurants that face the river, and a historic core with retail shops and a public space. Mixed use buildings, apartments, and townhomes would contribute to lively streets and provide an opportunity many people to live near these amenities.



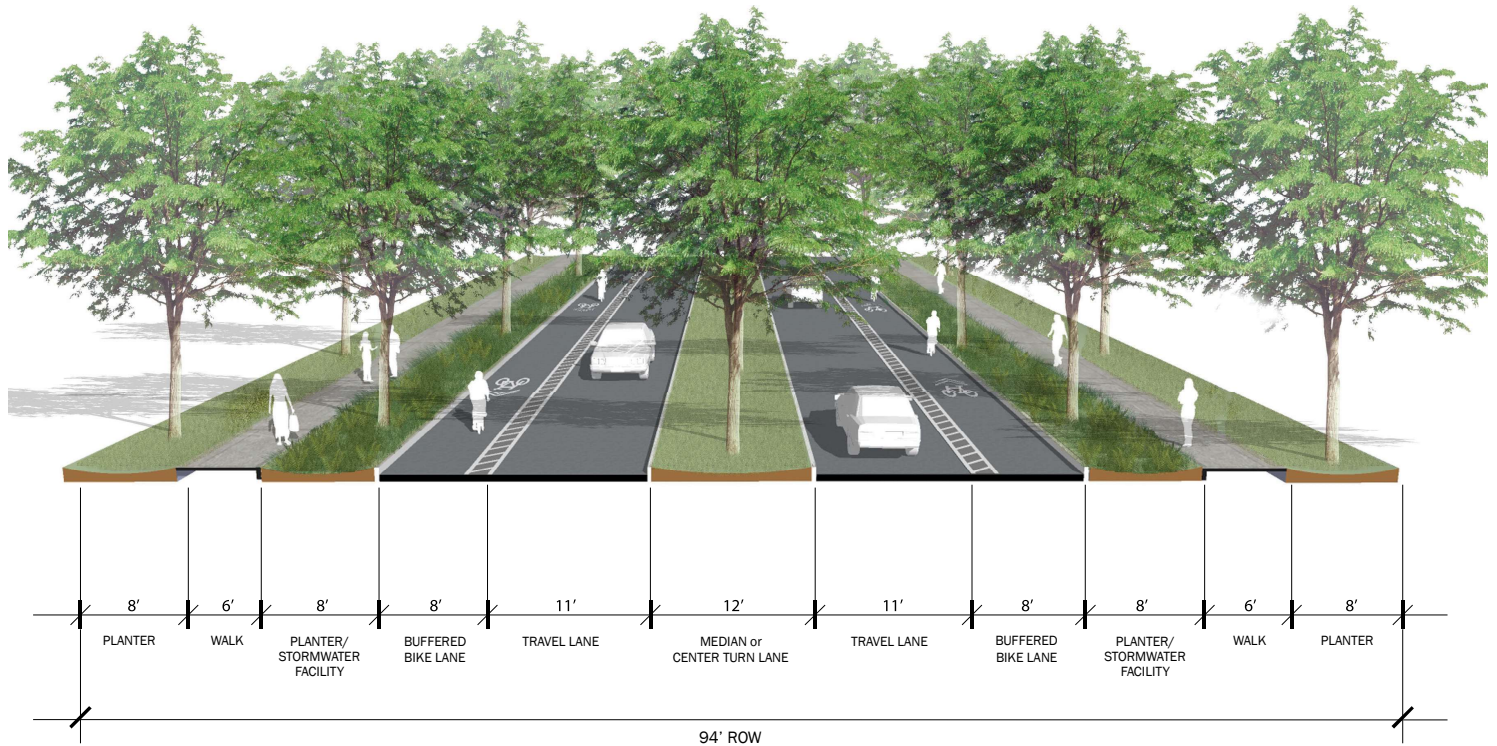
Concept A - Existing Location of Highway 224



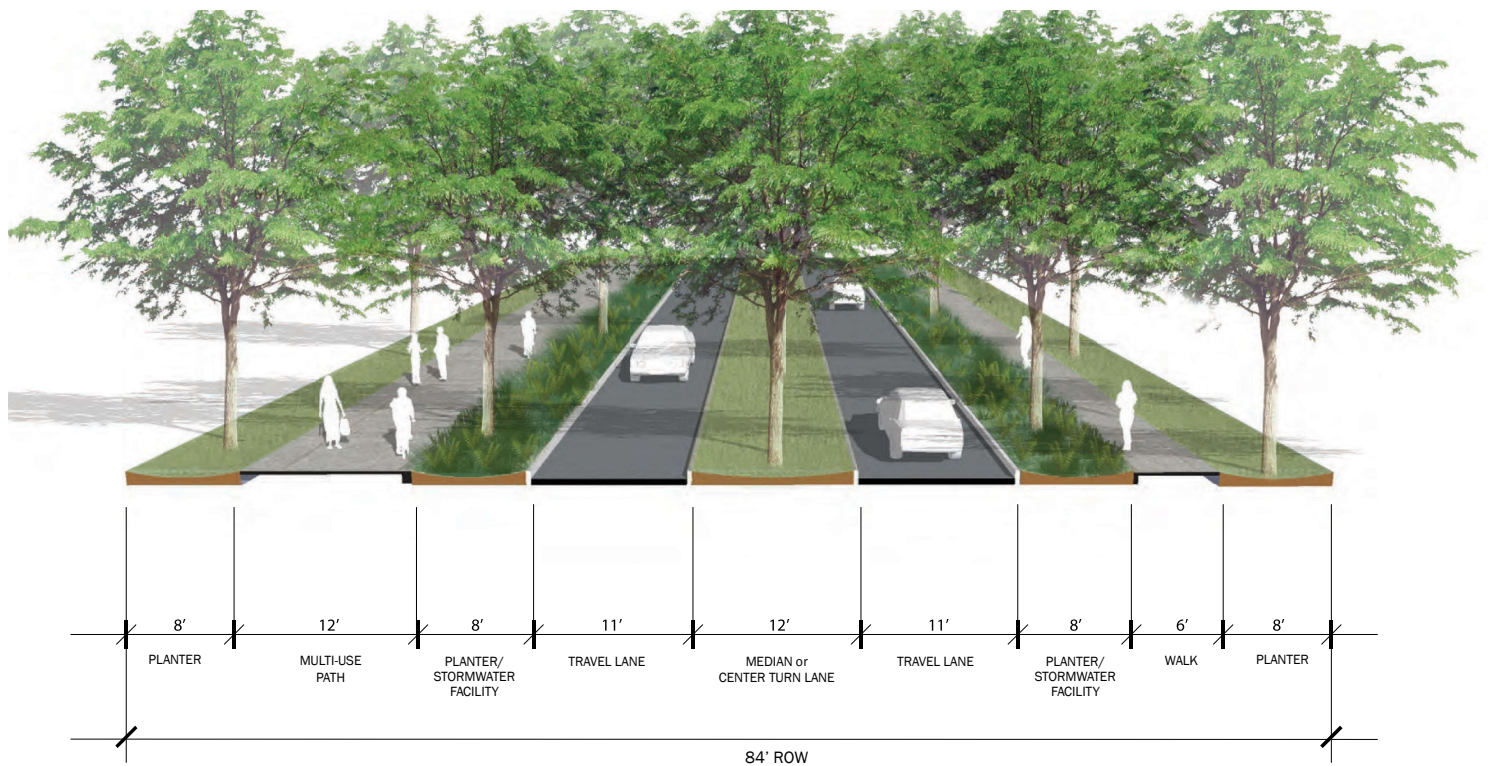
Concept B - Highway 224 Realignment

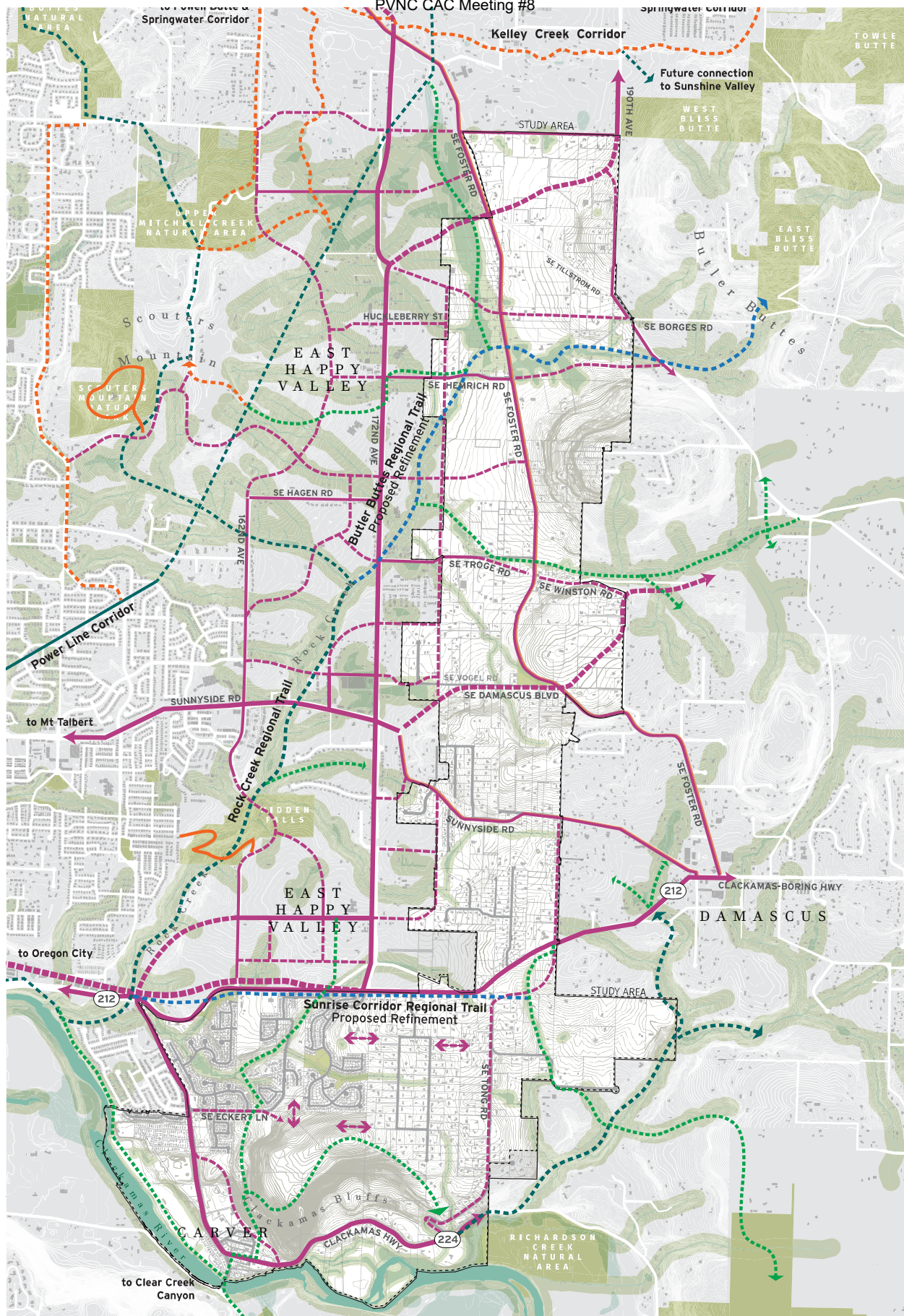


Concept A - Bike Lanes



Concept B - Shared Multi-Use Path





REFINED PLAN BIKEWAYS AND TRAILS NETWORK



10/10/2019

- Built Regional Trails
- - - Planned Regional Trails
- - - PV/NC Regional Trail - Proposed Refinement

- Major Arterial (existing/proposed) - with bike facilities
- - - Minor Arterial, Collector, N-hood Street (existing/proposed) - with bike facilities



MEMORANDUM

Park System Level of Service Assessment Pleasant Valley / North Carver Comprehensive Plan

DATE October 8, 2019
TO City Project Team
FROM Steve Duh, Conservation Technix

To measure the provision of parks and recreation opportunities for the Pleasant Valley-North Carver (PV/NC) study area, a level of service (LOS) review was conducted to examine the distribution and acreage needs for parkland. Traditionally, LOS reviews have applied an acreage of parkland per thousand residents as a target measurement for adopted benchmark standards. Service standards are the adopted guidelines or benchmarks the City is trying to attain with their parks system; the level of service is a snapshot in time of how well the City is meeting its adopted standards.

This evaluation will explore how the Pleasant Valley-North Carver planning area relates to performance comparable to the City's standard for the provisions of park acreage and distribution using population and geographic information. This assessment also provides the future direction for ensuring adequate provision of parks for the community based on current and potential future gaps in this community infrastructure.

The adopted parkland standards from the City of Happy Valley Park and Recreation Master Plan (2017) were used to evaluate the LOS in the PV-NC study area and forecast park needs for current and future residents.

PARK & OPEN SPACE CLASSIFICATIONS

As defined in the 2017 Happy Valley Parks and Recreation Master Plan, park and open space lands are classified by function as a means to provide guidance for the intended size and use of each park type. For the assessment of the PV-NC study area, three park classifications were considered:

- Community parks are large park sites developed for organized play that generally contain a wide array of both passive and active recreation facilities and appeal to a diverse group of users. Community parks are generally 15 to 40 acres in size, should meet a minimum size of 20 acres when possible and serve residents within a 2-mile drive, walk or bike ride from the site.
- Neighborhood parks are generally considered the basic unit of traditional park systems. They are small park areas designed for unstructured, non-organized play and limited active and passive recreation. They are generally 2 to 5 acres in size. Neighborhood parks are intended to serve residential areas within close

proximity (up to ½-mile walking or biking distance) of the park and should be geographically distributed throughout the community.

- Natural areas are undeveloped lands primarily left in a natural state and typically places that are geographically or geologically unique, with passive recreation use (e.g., trails) as a secondary objective. Open spaces are individual or isolated tracts of open space that are not connected to a larger natural area network.

LEVELS OF SERVICE & STANDARDS

There is currently very little park land in the study area. North Clackamas Park & Recreation District (NCPRD), Metro and a couple small homeowner associations, have minor holdings, including 1.39 acres of developed parks (NCPRD) and 63.6 acres of open space/natural area. There are 31 acres of public parklands, which include natural areas, wetlands, open spaces owned by both NCPRD and Metro within the study area. Thus, for the assessment of parkland provision discussed below, only the 1.39 acres of neighborhood park are applied.

Figure 1 shows the current inventory of parks and open space in the planning area owned by private HOAs and public, regional park providers. There currently are no parklands provided by the City of Happy Valley in the PV-NC planning area.

Figure 1. Park and Open Space Inventory in Pleasant Valley-North Carver Study Area

Park Site	Classification	Ownership	Acreage	
			Developed	Undeveloped
Trillium Creek Park*	Neighborhood Park	NCPRD	1.39	6.27
Orchard Summit Open Space	Open Space	NCPRD		4.24
SE Vogel Road Site	Open Space	NCPRD		14.31
Richardson Creek Natural Area	Natural Area	Metro		4.8
Subtotal			1.39	31.01
HOA open spaces	Open Space	Private		34.03
Total				65.04

*1.39 acres of Trillium Creek Park is developed as a neighborhood park

Map 1 highlights the locations of existing parks and open space lands within the PV-NC study area.

Neighborhood & Community Parks

The City of Happy Valley's existing service standards have been applied to the Pleasant Valley-North Carver study area to assess the current and future demand for parkland. Using the adopted City standard of 2 acres per 1,000 for neighborhood parks and 4 acres per 1,000 for community parks (a combined core park standard of 6 acres per 1,000 residents) determines the amount of acreage required to meet the parkland acquisition standard. When the population of the planning area is compared to the City's acreage standards, the difference between the existing

acreage and “demand” for park acreage to meet the standard is considered the “need” in future acreage. When no parks exist for a classification, these two measures of “demand” and “need” are the same. The LOS was examined for the planning area using both the 2015 population and projected 2040 population.

Figure 2 highlights the current level of service (LOS) for the PV-NC planning area at the City’s existing standards for neighborhood and community parks. Using figures consistent with the Housing Needs Analysis for the PV-NC Comprehensive Plan study, the 2015 population (Metro estimate) and the 2040 population forecast (based on maximum land use density projection) were both calculated based on 3.1 persons per household.

Figure 2. Current & Future Level of Service & Performance for PV-NC study area

# Facilities	Classification	Current Acreage	Current LOS (acres/1,000)	Park Standard	2015		2040	
					PV-NC Demand	PV-NC Need	PV-NC Demand	PV-NC Need
0	Community	0.00	0.0	4 ac/1000	21.5	21.5	91.2	91.2
1	Neighborhood	1.39	0.3	2 ac/1000	10.8	9.4	45.6	44.2
Total Core Park Acreage		1.39	0.3	6 ac/1000	32.3	30.9	136.8	135.4

In reviewing each park classification separately, the PV-NC study area is currently providing 0.0 acres per 1,000 population for community parks (0% of the proposed standard). The resulting deficit of community parkland across the study area is 21.5 acres based on the 2015 population. That deficit may grow to 91.2 acres by 2040 if no additional community parklands are acquired. For neighborhood parks, the PV-NC study area currently provides 0.3 acres per 1,000. The currently acreage deficit for neighborhood parks is 9.4 acres and may grow to 44.9 acres by 2040. The total core park acreage (combined neighborhood and community parks) need is 30.9 acres to meet the standard. The total combined park acreage need may increase to 135.4 acres by 2040.

Considering the potential for annexation of the Pleasant Valley-North Carver study area into the City of Happy Valley, the level of service assessment has been combined to illustrate the demand and need for parks as a unified public park system for the City. Figure 3 combines the City park system and PV-NC study area for both park classifications. The needs for neighborhood parks and community parks are calculated to reveal a total core park deficit of 82.7 acres based on 2015 population estimates. This need for park acreage may grow to 276.6 acres by 2040 without an aggressive land acquisition strategy and coordination with the land development community.

Figure 3. Current & Projected Acreage Needs for Urban Parks for the combined City of Happy Valley and PV-NC Area

# Facilities	Classification	Current Acreage	Park Standard	2015		2040	
				HV/PV-NC Demand	HV/PV-NC Need	HV/PV-NC Demand	HV/PV-NC Need
1	Community	31.2	4 ac/1000	88.2	57.0	217.6	186.4
6	Neighborhood	18.5	2 ac/1000	44.1	25.6	108.8	90.3
Total Core Park Acreage		49.7	6 ac/1000	132.4	82.7	326.3	276.6

Natural Areas & Private Open Spaces

No numeric standards are proposed for natural areas or open spaces. While numerical planning standards are common for helping to determine a desirable number of neighborhood parks per thousand residents, they do not translate easily to natural areas because of the uniqueness of the land base itself. Natural areas also are highly variable in the degree of environmental sensitivity and possible public access. Hence, they may not directly contribute to the provision of parks and recreation.

Additionally, the City has provided strong leadership in requiring developers to set aside tracts of land through its land use regulations. At the present, approximately 275 acres of sensitive or protected lands have been set aside within Happy Valley city limits as privately held Homeowner Association (HOA) open space tracts via the platting and land development process. The PV-NC study area contains an additional 34.03 acres of open space owned by HOAs. Typically, HOA properties are not open and available for general public uses. They are owned and maintained as private property for use by the residents within the designated HOA. While they provide some value by contributing to an overall system of open space, their restricted access limits any provision of park or recreation needs for the community.

The inclusion of future, protected sensitive areas will strengthen and expand the broader network of public and private natural areas and open spaces. However, the priority for natural area acquisitions or the acceptance of open space dedications from developers should be focused toward those lands that expand ownership of adjacent City-owned properties or to ensure sufficient property is available to accommodate public access and future trail connections.

PARKLAND GAP ANALYSIS

The acreage of parkland per capita provides only a limited measure of the value of recreational access and park amenities in demand for public uses. The Pleasant Valley-North Carver area is mostly devoid of parklands, except for a few properties in the southern section owned by NCPRD and Metro. While the level of service assessment measures the amount of acreage to be acquired to provide for adequate parks and outdoor recreation facilities for the current and future population, a strategic approach to the future equitable distribution of public parks is warranted to ensure access for all residents.

Park access can be defined as the ability to reach a publicly-owned park within a half-mile walk on the road network, unobstructed by freeways, rivers or other barriers. This walking accessibility measure is used by nationally-recognized park agencies and park planning organizations such as the Trust for Public Lands, and it is the basis for assessing parkland distribution in the Happy Valley Parks and Recreation Master Plan. Walking distance is most commonly defined as a half-mile or a ten-minute walk. Determining the 'walksheds' for existing parks can reveal the gaps where residential areas are unserved and lack access to parks within a reasonable walking distance. These gaps may illustrate a need to provide for a more equitable distribution of park facilities. Identified gaps in the park system also can become target areas for future parkland acquisition.

For the Pleasant Valley-North Carver study area, future park facilities should be placed in strategic locations to create equitable access to recreational amenities throughout the planning area. Proposed locations, not associated

with specific parcels, show the approximate distribution feasible to provide for a complete system of parklands and were defined using a ¼-mile primary and ½-mile secondary service area with travel distances calculated ‘as the crow flies’, since the existing and future road network is inadequate to estimate real-world walksheds. As the Pleasant Valley-North Carver area develops, a re-assessment of parkland walksheds is warranted to confirm and re-evaluate the distribution of potential park areas serving the subarea.

Map 2 shows the mapped walksheds for existing developed parks in the PV-NC study area and the nearby areas within the City of Happy Valley. Map 3 illustrates an equitable distribution for potential, planned neighborhood and community parks. The majority of potential park sites are shown as neighborhood parks, which typically range from 1.5 - 5 acres in size. The level of service assessment for neighborhood parks indicates a need of 9.4 acres for the current population of the PV-NC study area, which grows to a future need for 44.2 acres of neighborhood park acreage for the estimated 2040 population. To meet the existing City standard for neighborhood parks, a minimum of 10-12 neighborhood park sites should be acquired and developed in the PV-NC study area. Neighborhood parks are recommended to be located in residential areas in order to provide walkable recreational amenities.

The level of service assessment for community parks identified a current need for 21.5 acres of developed parkland, which is projected to increase to 91.2 acres by 2040. If each community park ranges in size from 20-30 acres, depending on desired recreational needs, at least one new community park site should be developed and acquired in the near future. By 2040, up to three community parks should be provided to serve the PV-NC study area. Community parks are often located in or adjacent to higher density residential land uses to take advantage of denser populations, more accommodating road systems and public transportation. When community parks are associated with special natural resources, locations are based on those special features and providing adequate public access. The park watershed map targets future locations for community parks near or adjacent to higher residential land uses and along the riverfront where more public recreation access would be desirable. As Happy Valley explores acquisition targets for parklands, some consideration should be directed to the 14-acre Vogel Road future park site currently owned by NCPRD and the intervening parcel between this site and the school district property to the west.

IMPLEMENTATION PROJECTS

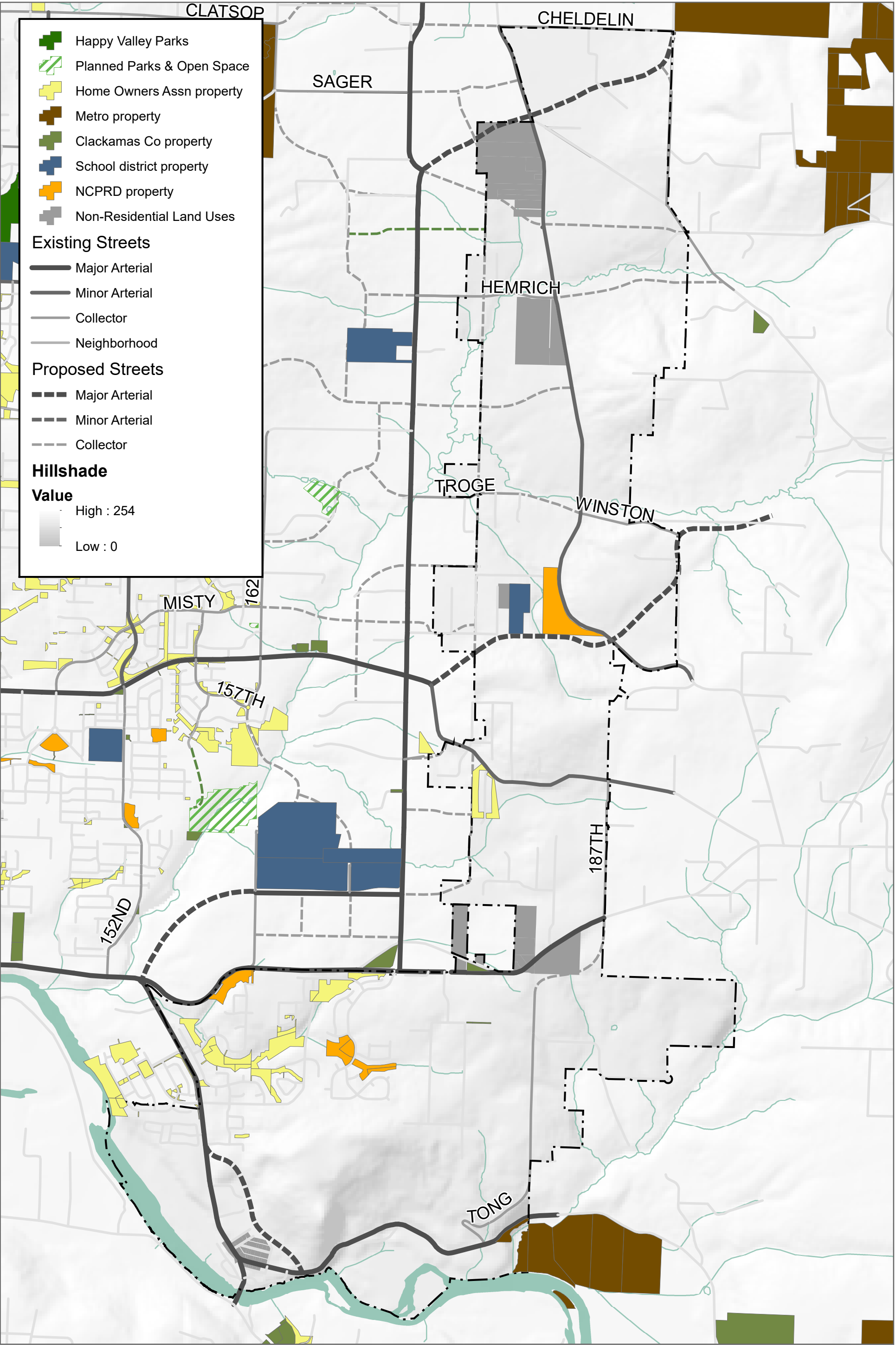
The potential parkland target areas noted on Maps 4 and 5 are intended to guide future acquisition efforts. The provision of ten to eleven new neighborhood and two community parks through acquisition or coordination with developers will improve the overall distribution and equity of parkland and promote recreation within walking distances for Pleasant Valley-North Carver residents. An aggressive acquisition program should be actively pursued in the PV-NC study area to capture opportunities that will be continually diminishing as residential growth continues to consume developable land.

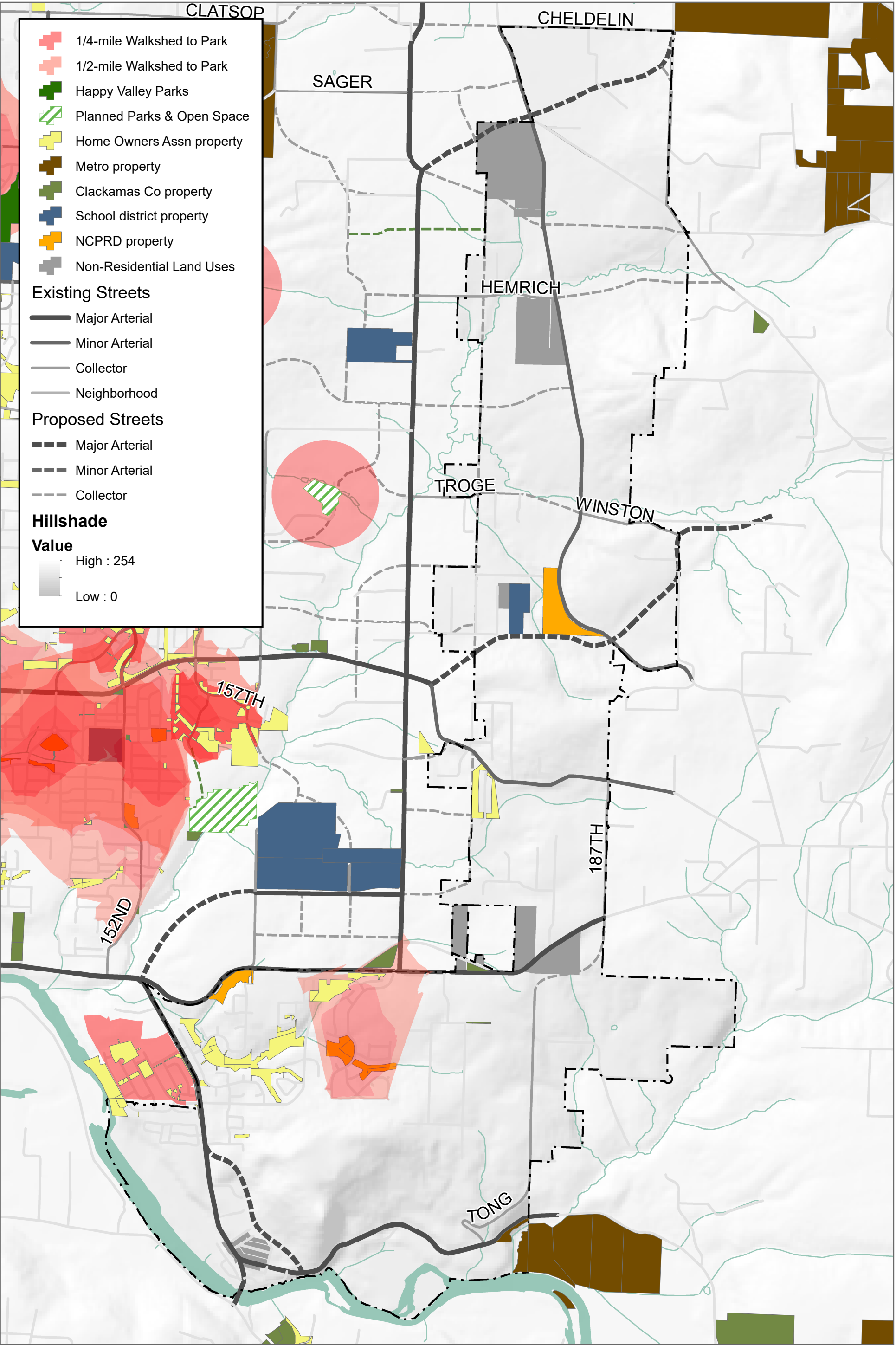
A capital facilities plan (CFP) should be prepared to illustrate the program for acquisition and development to accommodate these identified parkland needs. Staggering neighborhood and community park projects over ten years will allow for significant progress and should be integrated with the existing adopted City CFP for its current park system. As acquisition opportunities arise for both neighborhood and community parks, some adjustments

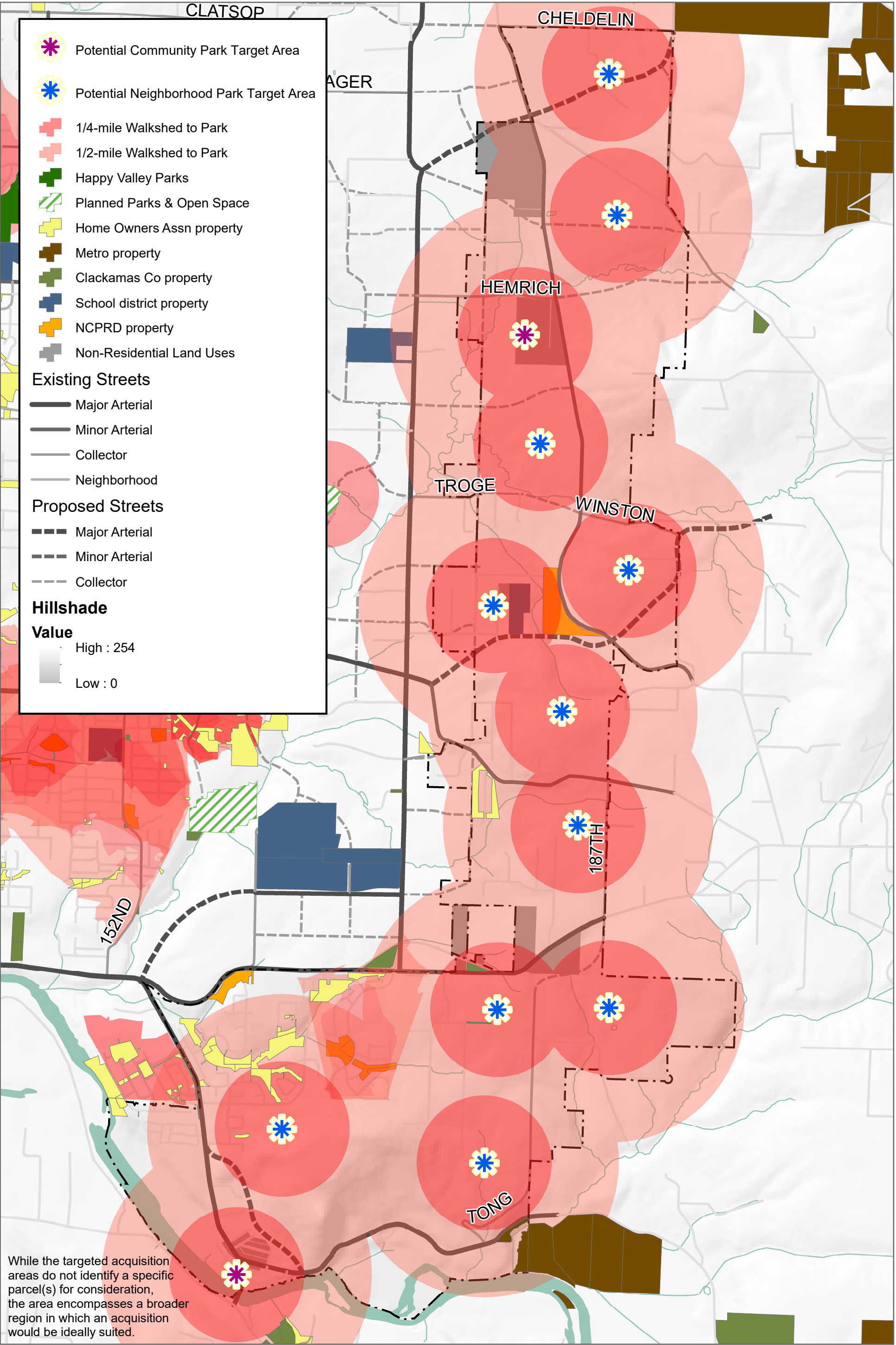
will be warranted for measuring level of service based on actual, acquired sites, since acreage may vary for any individual project.

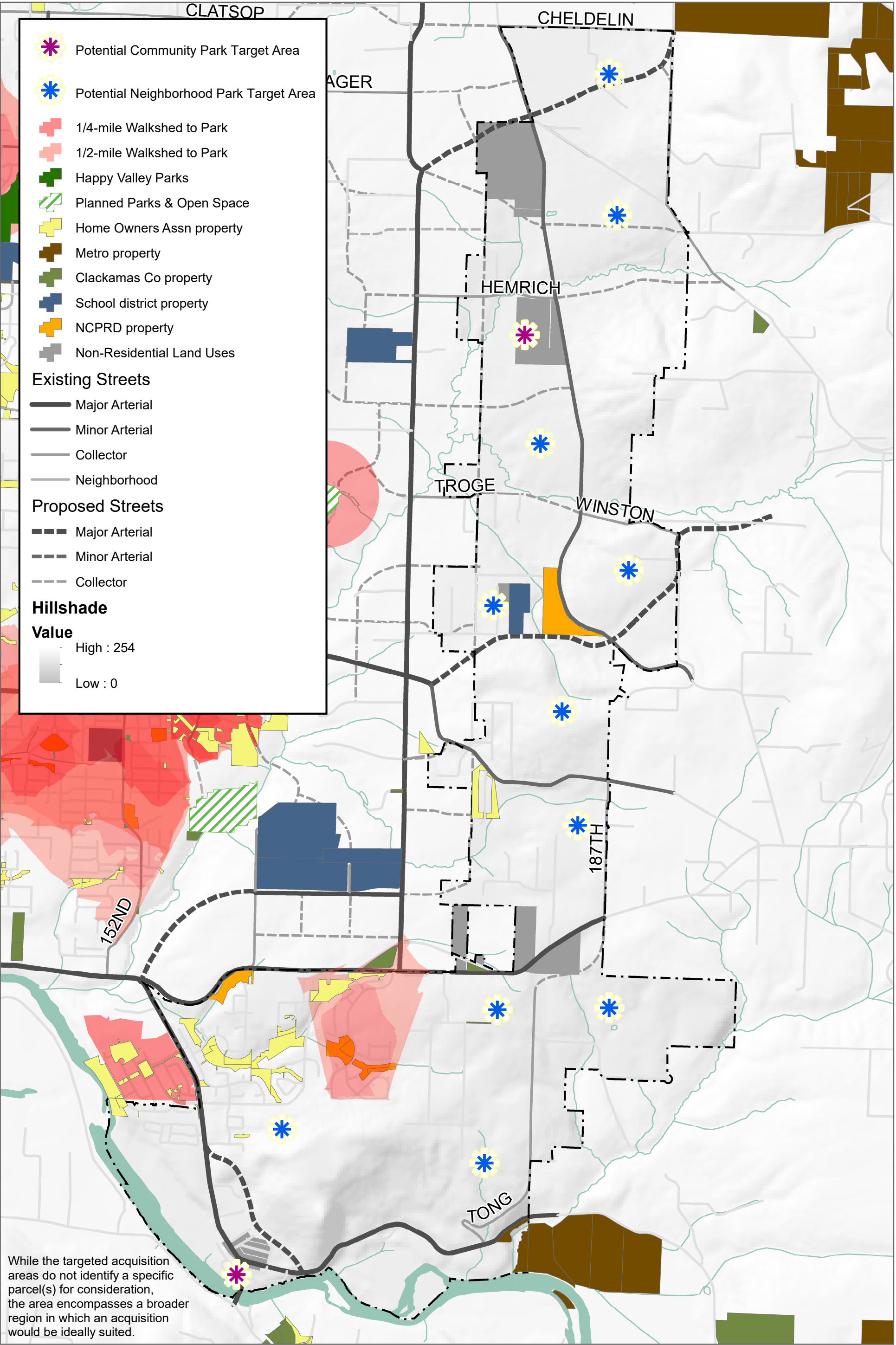
Attachments:

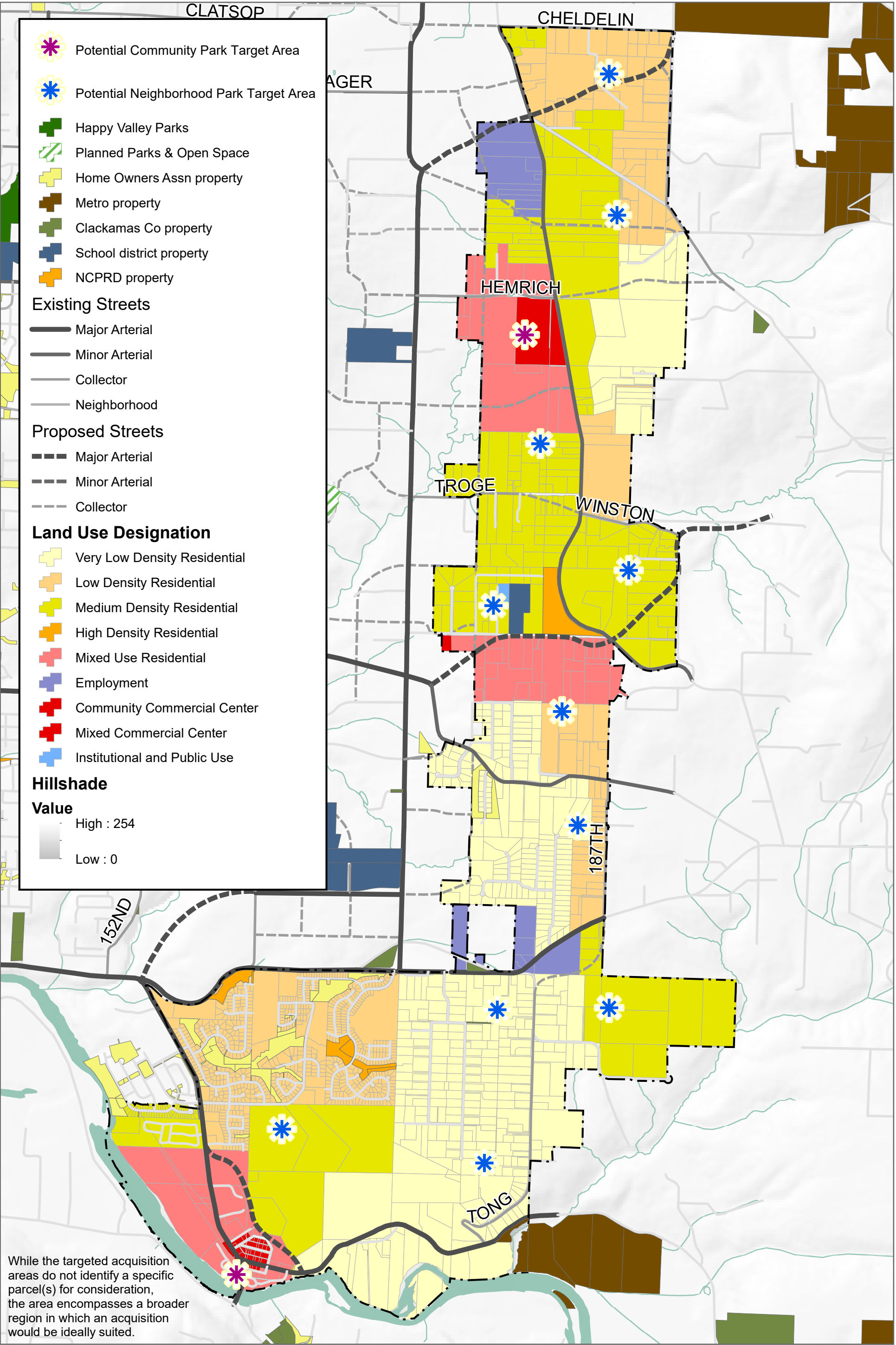
- Map 1: Existing Parks & Open Spaces
- Map 2: Existing Parks & Open Spaces within ¼- & ½-mile Walksheds
- Map 3: Potential Park Target Areas with Conceptual Service Areas
- Map 4: Potential Park Target Areas with Walksheds for Existing Parks
- Map 5: Potential Park Target Areas with Proposed Land Uses













MEMORANDUM

Future Transportation Conditions Pleasant Valley/North Carver Comprehensive Plan

DATE October 8, 2019
TO Michael D. Walter, City of Happy Valley
FROM Reah Flisakowski and Rochelle Starrett, DKS Associates

This memorandum summarizes the future transportation conditions in the Pleasant Valley/North Carver (PV/NC) planning area, which includes approximately 2,700 acres east of the City of Happy Valley. The project study area is generally bordered by 172nd Avenue to the west, the Clackamas River to the south, 190th Avenue to the east, and Cheldelin Road to the north. This memorandum also presents the multimodal improvements needed to support the proposed land use changes in the planning area and a focused evaluation of two network options for the Carver area. The future needs were based on an analysis of future traffic volumes, study intersection operations and off-street trail connections. Existing transportation conditions were documented in a prior technical memorandum.¹

FUTURE TRAFFIC VOLUMES

Traffic volume forecasts were developed for the year 2040 using the most recent releases of the 2015 Existing and 2040 Financially Constrained Regional Transportation Plan (RTP) travel demand models from Metro. Additional local level network and connectivity refinements were made within the PV/NC subarea to support the development of future volumes in the study area. Future year models were developed for two scenarios: 2040 Baseline and 2040 PV/NC Build.

2040 Baseline Scenario Forecasts

Planned improvements included in the 2040 Baseline scenario are below. These represent projects from the Metro RTP and/or Happy Valley Transportation System Plan (TSP) that are identified as financially constrained (reasonably funded by 2040). The 2040 Baseline scenario also includes a few projects that are not identified as financially constrained in the RTP or TSP but were present in the 2040 Financially Constrained RTP model. These projects are noted in the list below. Based on the model outputs, year 2040 Baseline scenario roadway and study intersection volumes were developed for the analysis.

¹ Existing Transportation Conditions, Pleasant Valley North Carver Comprehensive Plan, DKS Associates, October 19, 2018.

- Widen/construct 162nd Avenue to three lanes, OR 212 to Clatsop Street (RTP 10037, 10040, 10041 and TSP W9, R3, R4)
- Construct Sunnyside Road-Damascus Boulevard east extension as five lane facility, 172nd Avenue to Foster Road, labeled Damascus Boulevard on Figure 1 (RTP 10076 and TSP R23)
- Construct Sunrise Corridor consistent with FEIS, I-205 to 172nd Avenue (RTP 10890, 11301, 12020 and TSP R24)
- Widen 172nd Avenue to five lane facility, Sunnyside Road to 172nd-190th Connection (TSP W2)
- Construct 172nd-190th Connection as five lane facility (RTP 12071 and TSP R7)
- Construct Sager Road extension as three lane facility, 172nd Avenue to Foster Road (TSP R5)
- Construct Hemrich Road extension as three lane facility, 162nd Avenue to 177th Avenue (TSP R9)
- Construct Scouter Mountain Road extension as three lane facility, 147th to 177th Avenue (TSP R10)
- Construct Troge Road extension as three lane facility, 162nd to 177th Avenue (TSP R11)
- Construct Crossroads Avenue as three lane facility, 172nd Avenue to 177th Avenue (R12)
- Widen 172nd Avenue to three lanes, 172nd-190th Connection to Cheldelin Road (TSP W3)
- Construct Rock Creek Boulevard as three lane facility, 172nd Avenue to 177th Avenue (TSP R17)
- Widen Foster Road to three lanes, County line to 172nd-190th Connection Road (RTP 10035, not financially constrained)

2040 PV/NC Build Scenario Forecasts

The 2040 Baseline scenario demand model was modified to develop a 2040 PV/NC Build model which reflects the proposed PV/NC land use changes and Refined Plan Street Network shown in Figure 1. The project team modified the current future land use projections to develop a future land use scenario for the PV/NC plan area as shown in Table 1. Vehicle trip rates per each household and employee were estimated using the 2040 Metro model. These trip rates were applied to the proposed land uses to develop the 2040 PV/NC Build year 2040 roadway and study intersection volumes.

Table 1: Future (2040) Land Use Summary

Scenario	Growth (2015 to 2040)		Total (2040)	
	Households	Employees	Households	Employees
2040 Regional Land Use Projection	6,300	2,200	8,700	2,700
2040 PV/NC Land Use Projection	8,400	1,200	10,800	1,700

Note: Future land use projections for housing and employment based on the proposed PV/NC growth added to the Metro travel demand base model land use data.

The following projects were added to the 2040 Build scenario consistent with the PV/NC Refined Plan Street Network shown in Figure 1.

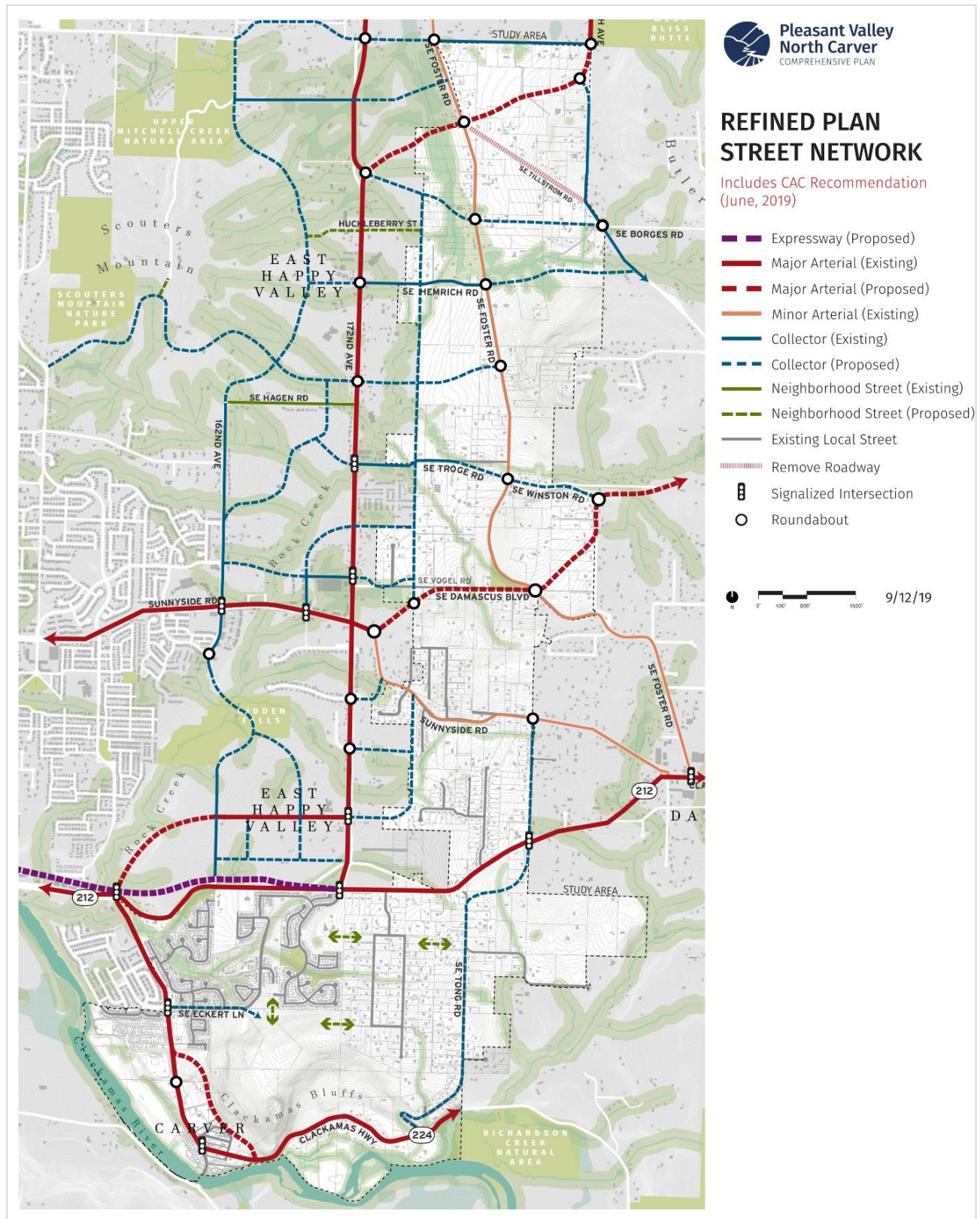
- Construct Sunnyside Road east extension as five lane facility, Foster Road to Winston Road, labeled Damascus Boulevard on Figure 1
- Construct Troge Road extension as three lane facility, 177th Avenue to Sunnyside Road east extension
- Construct Scouter Mountain Road extension as three lane facility, 177th Avenue to Foster Road
- Widen Hemrich Road as three lane facility, 177th Avenue to Foster Road
- Construct Borges Road extension as three lane facility, 172nd-190th Connection to Tillstrom Road
- Close Tillstrom Road between 190th Drive and Foster Road
- Construct Clatsop Road extension from 172nd Avenue to Foster Road (TSP R2, not financially constrained)
- Widen Cheldelin Road as three lane facility, Foster Road to 190th Drive
- Widen 187th Avenue as three lane facility, OR 212 to Sunnyside Road
- Widen Tong Road as a two/three lane facility, OR 212 to OR 224, realign at OR 212 opposite 187th Avenue
- Construct 177th Avenue, Rock Creek Boulevard to Sager Road Extension (TSP R22, not financially constrained)

Future Damascus Boulevard Needs and Implementation

The extension of Sunnyside Road to the east has been a planned regional project for almost a decade. This project would construct a new five-lane Damascus Boulevard facility, between 172nd Avenue and Foster Road. This project is included in both the Metro RTP and Happy Valley TSP as a reasonably funded project for the year 2040 planning horizon.

This project would serve as the first step toward providing a new regional east-west connection between the City of Happy Valley and future urban growth areas to the east, south of the City of Gresham. OR 212 provides the only direct connection between 172nd Avenue and US 26. The 2040 demand model shows OR 212 is expected to operate with significantly congestion in the future and a parallel east-west arterial to the north would improve overall capacity and connectivity in the area. It is important for the PV/NC Plan to identify the need to continue Damascus Boulevard east of Foster Road to serve future 2040 mobility needs and beyond.

Figure 1



FUTURE INTERSECTION OPERATIONS

The 2040 Baseline and Build traffic volumes developed for the PM peak hour were used to evaluate study intersection operations. The analysis was based on 2000 Highway Capacity Manual² (HCM) methodology for signalized and 2010 HCM methodology for unsignalized intersections. The 2040 Baseline scenario included financially constrained projects identified in the Happy Valley TSP and the Metro RTP. In addition to the roadway projects listed on page 2, the following intersection improvements were included in the 2040 Baseline scenario:

- traffic signal at OR 224/Market Road
- 172nd Avenue/OR 212 capacity improvements (TSP I8)
- 172nd Avenue/Hemrich Road capacity improvements (TSP I11)
- Foster Road/Tillstrom Road/172nd-190th Connection capacity improvements (TSP I15)

The 2040 Baseline intersection operations are summarized below in Table 2. Many of the study intersections exceed their mobility standards in the future, including OR 212/OR 224, Foster Road/Tillstrom Road/172nd-190th Connection, OR 224/Market Road, and most unsignalized study intersections. Detailed intersection operations are provided in the appendix.

Table 2: Future (2040) Baseline Intersection Performance (PM Peak Hour)

Signalized Intersection	Delay	Level of Service	V/C
172nd Avenue/Sunnyside Road	35.9	D	0.74
172 nd Avenue/OR 212	29.5	C	0.81
OR 212/OR 224	160.1	F	1.49
Foster Road/Tillstrom Road/172 nd -190 th Connection	91.8	F	1.11
172nd Avenue/Hemrich Road	10.5	B	0.71
OR 224/Market Road	>200.0	F	1.66
Unsignalized Intersection	Delay	Level of Service	V/C
Foster Road/Cheldelin Road	21.3	A/C	0.34
190th Drive/Tillstrom Road	44.4	A/E	0.80
Foster Road /Troge Road	54	A/F	0.84
Foster Road/Vogel Road	87.9	A/F	1.08
Signalized Intersection: Delay = Average Intersection Delay (sec.) LOS = Level of Service	Unsignalized Intersection: Delay = Critical Approach Delay (sec.) LOS = Major Street/Minor Street		

² 2000 Highway Capacity Manual, Transportation Research Board, Washington DC, 2000. 2010 Highway Capacity Manual, Transportation Research Board, Washington DC, 2010.

V/C = Volume-to-Capacity Ratio Shaded values do not meet standards	V/C = Critical Volume-to-Capacity Ratio Shaded values do not meet standards
---	--

Study intersections that are expected to exceed their mobility standards were evaluated further to identify the need for additional improvements. With the roadway widening projects included in the PV/NC Refined Plan Street Network (listed on page 3 and in Figure 1), the intersection of Foster Road/Tillstrom Road/172nd-190th Connection and all unsignalized study intersections would have increased capacity from the addition of left turn lanes. These improvements were used to assess 2040 Build operations, shown below in Table 3. Detailed intersection operations are provided in the appendix.

With these recommended improvements, most study intersections meet the operational standards except for the intersections of OR 224/Market Road and OR 212/OR 224. These intersections significantly exceed their mobility standards under both the 2040 Baseline and Build scenarios. The additional vehicle trips generated by the Pleasant Valley/North Carver proposed land uses **do not degrade operations** at either location.

Additional improvement options were evaluated at these failing intersections. Installing turn lanes at the OR 224/Market Road intersection would significantly improve intersection operations; however, this intersection has constrained right-of-way due to steep topography and close-in development. Constructing additional turn lanes was deemed infeasible. The OR 212/OR 224 intersection is part of the Sunrise Gateway project which is a significant regional corridor project currently in the planning phase. The specific configuration and connection to the OR 212/OR 224 intersection has not been determined. Due to these issues, no improvements were identified for OR 224/Market Road and OR 212/OR 224 as part of the PV/NC plan. See Carver Junction options below, for further information regarding OR 224/Market Road.

Table 3: Future (2040) Build Intersection Performance with Mitigations (PM Peak Hour)

Signalized Intersection	Delay	Level of Service	V/C
172nd Avenue/Sunnyside Road	36.1	D	0.78
172 nd Avenue/OR 212	30.2	C	0.81
OR 212/OR 224	168.0	F	1.52
Foster Road/Tillstrom Road/172 nd -190 th Connection	44.6	D	0.89
172nd Avenue/Hemrich Road	11.2	B	0.71
OR 224/Market Road	>200.0	F	1.66
Foster Road/Vogel Road	25.2	C	0.68
Foster Road/Cheldelin Road	4.4	A	0.60
Foster Road /Troge Road	8.5	A	0.62
Unsignalized Intersection	Delay	Level of Service	V/C
190th Drive/Tillstrom Road	--	--	--

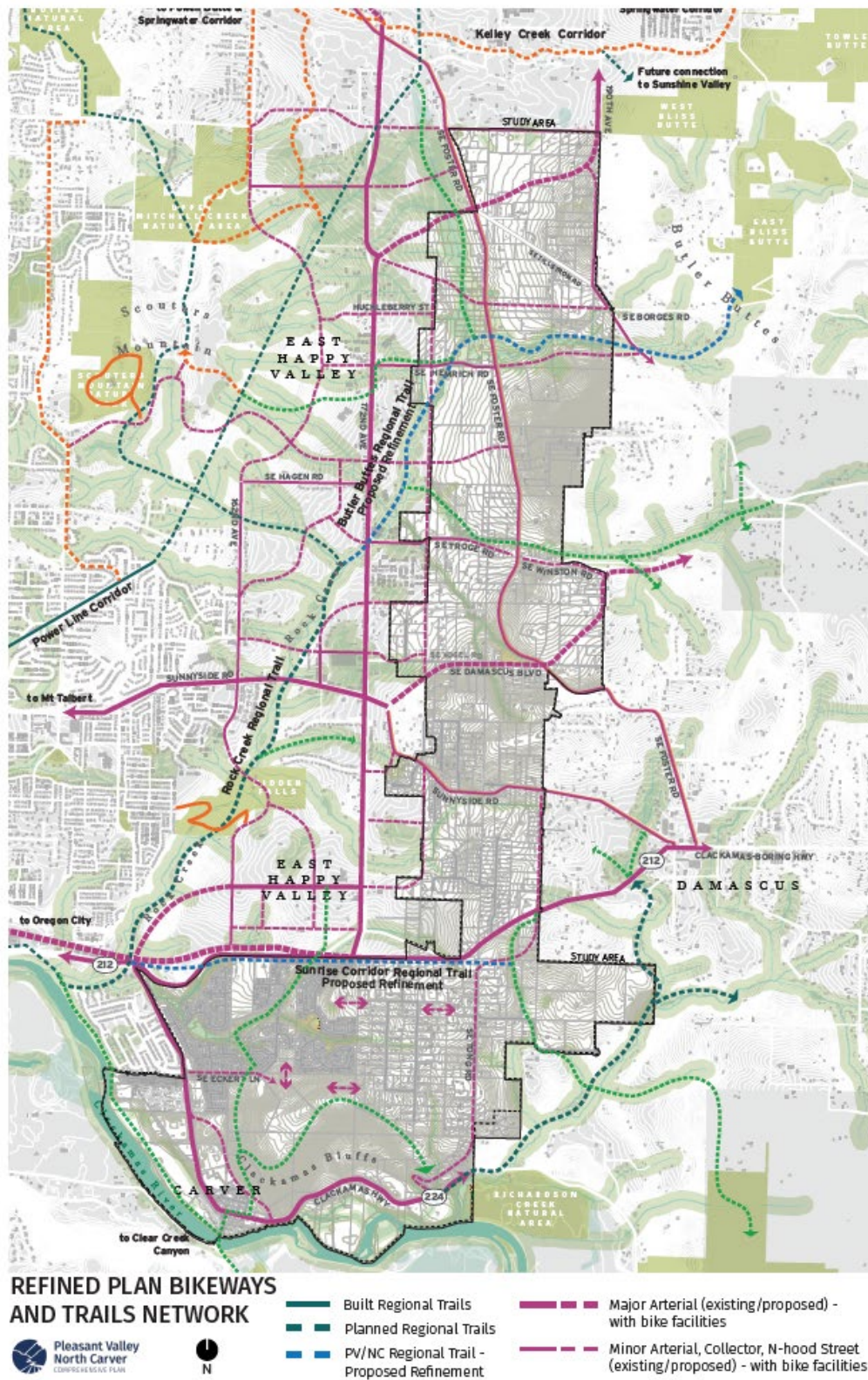
<p>Signalized Intersection:</p> <p>Delay = Average Intersection Delay (sec.)</p> <p>LOS = Level of Service</p> <p>V/C = Volume-to-Capacity Ratio</p> <p>Shaded values do not meet standards</p>	<p>Unsignalized Intersection:</p> <p>Delay = Critical Approach Delay (sec.)</p> <p>LOS = Major Street/Minor Street</p> <p>V/C = Critical Volume-to-Capacity Ratio</p> <p>Shaded values do not meet standards</p>
---	--

FUTURE MULTIMODAL SYSTEM

The Pleasant Valley/North Carver area will urbanize the predominantly rural area east of Happy Valley. While many of the existing streets have not been improved to urban standards, as part of the PV/NC plan, arterial and collector roadways will be constructed or re-constructed with bike facilities and sidewalks consistent with Happy Valley urban roadway standards which include a six-foot wide bike lane and a five to seven-foot wide landscape buffered sidewalk on each side of the facility. Providing bicycle and pedestrian facilities will provide a marked improvement for multimodal users over the existing rural environment.

In addition to on-street facilities, local and regional trails are planned in accordance with adopted regional plans and identified local connection needs. The Refined Plan Bikeways and Trail Network is shown in Figure 2. The trail system is aimed at serving both recreational and commuter needs in the planning area by connecting regional trails, parks, neighborhoods and commercial centers.

Figure 2



CARVER JUNCTION STREET NETWORK OPTIONS

To help support the proposed PV/NC land use plan, a more detailed street network assessment was conducted for the Carver Junction area. Two distinct network options were developed: Option A – Existing OR 224 Alignment and Option B – OR 224 Realignment. The benefits and concerns for each option are presented below.

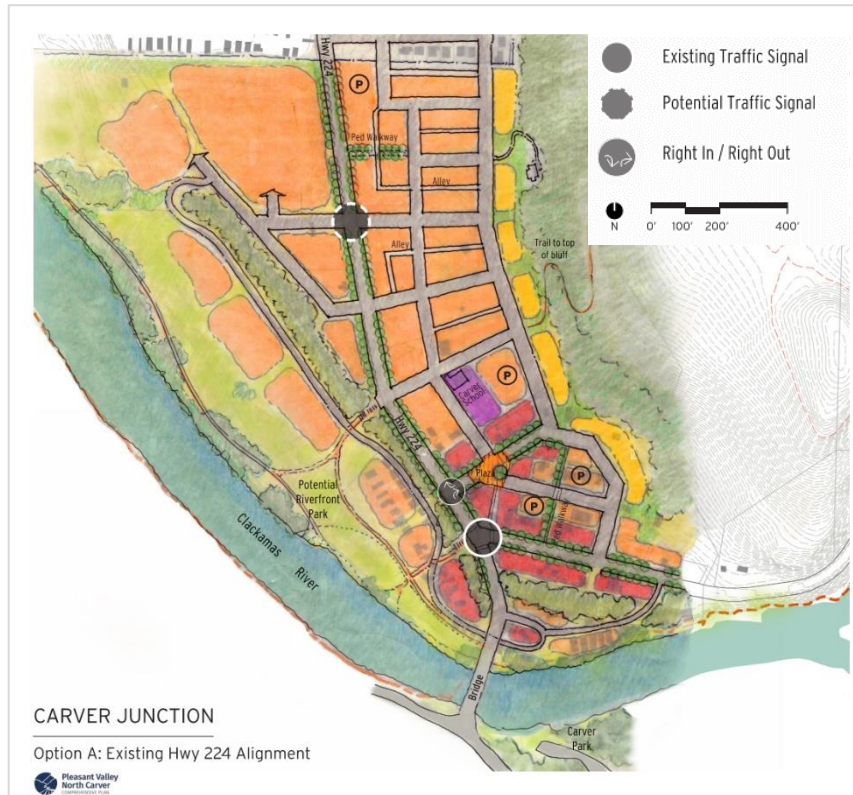
Carver Junction Option A

The future street network under Option A, shown to the right, would retain the existing OR 224 alignment and establish a local street grid along the highway between the Clackamas River and the bluff.

The OR 224/Market Road signalized intersection would serve both vehicle and pedestrian needs in the Carver Junction area. A new traffic signal on OR 224 to the north would likely be warranted to provide additional controlled access to the highway and between future development along each side of the highway. There would be potential to establish a local street grid east

of the highway that connects to the existing neighborhood to the north and allows local trips (driving, biking and walking) to be made off the highway. Local street connections to OR 224 may need access restrictions (such as right-in/right-out movements) to preserve capacity and promote safety.

As previously shown in Tables 1 and 2, future 2040 operations at the OR 224/Market Road intersection are expected to significantly exceed mobility standards with no feasible improvements to increase vehicle capacity. The future street network Option A would provide no operational benefit to the OR 224/Market Road intersection.



Carver Junction Option B

The future street network under Option B, shown to the right, would realign OR 224 to the east along the base of the bluff. The existing highway right-of-way would be repurposed as a lower volume-lower speed multimodal corridor through the core of the Carver Junction. This street network would create a new “gateway” intersection on both the north and south end of the area where the old and new highways connect. Each of these intersections would likely warrant a new traffic signal to provide controlled access between the OR 224 realignment, development within the Carver Junction area and the Clackamas River bridge.



There would be potential to establish a local street grid between the old and new highway alignments. A local street connection could also be made between the OR 224 realignment and the existing neighborhood to the north. The street network would require local trips (driving, biking and walking) between the Carver Junction area and the neighborhood to the north to cross OR 224 at the north “gateway” signalized intersection. Local street connections to the OR 224 realignment may need access restrictions (such as right-in/right-out movements) to preserve capacity and promote safety.

As previously shown in Tables 1 and 2, future 2040 operations at the OR 224/Market Road intersection are expected to significantly exceed mobility standards with no feasible improvements to increase vehicle capacity. Option B would provide an alternative route for regional traffic traveling on OR 224 and reduce the demand at the OR 224/Market Road intersection. Traffic travelling on the Clackamas River bridge would continue to use the existing OR 224/Market Road intersection to connect to the OR 224 realignment. The future 2040 Build scenario operations at the OR 224/Market Road intersection would significantly improve under Option B and meet mobility standards. Detailed intersection operations are provided in the appendix.