



Villebois

Villebois Village Master Plan



The City of Wilsonville
Adopted October 7, 2013

VILLEBOIS VILLAGE MASTER PLAN

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THE VILLEBOIS VILLAGE MASTER PLAN WAS FIRST ADOPTED AUGUST 18, 2003 BY ORDINANCE NO. 556 AND HAS SINCE BEEN AMENDED BY THE FOLLOWING ORDINANCES:

ORDINANCE NO.:	DESCRIPTION	DATE ADOPTED
724	LAND USE PLAN FOR FUTURE STUDY AREA	OCT. 7, 2013
681	RELOCATION OF SCHOOL SITE FROM SAP-NORTH TO SAP-EAST	AUG. 2, 2010
609	CHAPTER 3 AND CHAPTER 4 AMENDMENTS	MAY 15, 2006
594	AMENDMENT PERTAINING TO CENTRAL SAP & SCHOOL SITE; DELETION OF REFERENCES TO LEC, & OTHER MINOR EDITS	DEC. 5, 2005
566	FIGURE 1A AMENDMENT	JUNE 21, 2004

CHAPTER 1 – PURPOSE & SCOPE OF VILLEBOIS VILLAGE MASTER PLAN

1.1 PURPOSE

The *Villebois Village Master Plan* was developed in close coordination with City staff, following adoption of the *Villebois Village Concept Plan*. The *Villebois Village Master Plan* affects an estimated 480-acre area identified on *Figure 1 – Land Use Plan* as the “Village Area Boundary.”

The *Villebois Village Master Plan* is intended to implement the *Villebois Village Concept Plan* and serve as a basis for Village zone development standards. These standards in turn direct development through the build-out period of the *Concept Plan*. The *Villebois Village Master Plan* provides a detailed analysis of the framework systems identified in the *Concept Plan*, including the land use program, parks and open space system, utilities framework and circulation system. Consistency of these elements with the relevant system Master Plans is shown in the *Villebois Village Master Plan*. Compliance with the *Concept Plan* and with all other City, State and Regional applicable review criteria is presented in a separate supporting document.

The *Villebois Village Master Plan* incorporates the guiding design principles that were adopted in the *Villebois Village Concept Plan*. The guiding design principles are listed below.

Connectivity: Refers to a series of physical connections created within the village that also fosters other “connections,” such as the link between land use and transportation, as well as a sense of place and a sense of community. The list of these connectivity options and where they are addressed are as follows:

- Land Use Patterns (see Chapter 2);
- Parks/Open Space and Pathways (see Chapter 3); and
- Transportation (see Chapter 5).

Diversity: Refers to Villebois’ commitment to providing a community that offers many options and choices for those who live, work and play there. The list of these diversity options and where they are addressed are as follows:

- Housing Options (see Chapter 2);
- Village Center (see Chapter 2);
- Parks/Open Space (see Chapter 3); and
- Transportation (see Chapter 5).

Sustainability: Refers to the thread of stewardship and viability – social, environmental and economic – that is woven throughout every aspect of Villebois. The list of sustainability examples and where they are addressed are as follows:

- Village Center and Neighborhood Centers (see Chapter 2);
- Parks/Open Space (see Chapter 3); and
- Rainwater Systems (see Chapter 4).

1.2 SCOPE

Prior to or concurrent with approval of this *Villebois Village Master Plan*, the City of Wilsonville Comprehensive Plan text will be amended to include a discussion of the Residential-Village (R-V) land use designation (City File 02PC07A) and the Comprehensive Plan Map will be revised to designate the *Villebois Village Master Plan* area Residential-Village (City File 02PC07C). The uses and systems envisioned by the *Villebois Village Master Plan* within the Residential-Village designation will be implemented through the ordinances of the Village zone and the review procedures established with the Village zone (City File 02PC08 – WC 4.125).

The Land Use Chapter, which follows, identifies the proposed land uses to be developed at Villebois Village to create a complete community with a vibrant mixed-use Village Center as envisioned in the *Villebois Village Concept Plan* (City File 02PC06). It provides goals, policies and implementation measures for the general land use plan, residential neighborhood housing, the Village Center, and the elementary school.

The Parks and Open Space / Off-Street Pathways Chapter demonstrates that Villebois Village meets the vision of the City's Parks & Recreation Master Plan of a "comprehensive parks and recreation system that grows along with the community" by providing diversity in the types of recreational opportunities within the Village and responding to the unique opportunity to provide a regional link between the adjacent major open space and wildlife areas. This project does not require amendment of the City's Parks & Recreation Master Plan in order to be implemented. However, the next scheduled update of the City's Parks & Recreation Master Plan will need to account for the addition of the *Villebois Village Master Plan* area.

The Utilities Chapter is broken into three sections: sanitary sewer, water, and storm drainage. Each section provides a description of the proposal, a technical analysis of the proposal's compliance with the relevant City Master Plan, and an analysis of the proposal's compliance with the City's implementation measures of the relevant Master Plan. The *Villebois Village Master Plan* is consistent with the City's Wastewater Collection System Master Plan and the City's Water System Master Plan. The *Villebois Village Master Plan* is consistent with the City's Stormwater Master Plan, and exceeds the standards of City's Stormwater Master Plan with the addition of the proposed Rainwater Management Program. The City's Stormwater Master Plan was recently updated to comply with Metro Title 13 for the entire city and including Villebois.

The Circulation Chapter compares the proposed street system for Villebois with the provisions of the City's Transportation Systems Plan (TSP). The analysis contained in the Circulation Chapter identifies the consistencies and differences between the *Villebois Village Master Plan* and the City's TSP. This Chapter recommends implementation measures that will assure that identified differences are addressed through the appropriate review process for the alternatives proposed with the Villebois street system.

The *Villebois Village Master Plan* will receive an extensive public review that includes public hearings before the City of Wilsonville Planning Commission and City Council. This *Villebois Village Master Plan* will be a supporting document to the City of Wilsonville Comprehensive Plan.

CHAPTER 2 – LAND USE

2.1 INTRODUCTION / PROPOSAL

Figure 1 – Land Use Plan identifies the proposed land uses to be developed at Villebois to create a complete community with a vibrant Village Center. At build-out, Villebois will be an urban village of at least 2,300 residential units surrounding a mixed-use Village Center comprised of residential, office, retail and/or related employment uses. The development of the land use design relied heavily upon the three guiding principles of connectivity, diversity and sustainability described in the *Villebois Village Concept Plan* and discussed in the previous chapter. The *Concept Plan* also identified the following key design elements, which represent the principle building blocks upon which the Villebois Village is to be developed:

- Neighborhoods
- Village Center
- Commercial Development and Employment
- Elementary School
- Parks and Open Spaces
- Rainwater Systems
- Environmental Programs
- Connectivity

The original Villebois Village Master Plan also recognized the Future Study Area, formerly known as the Living Enrichment Center (LEC), which represents approximately 8% of the total acreage of the Residential – Village area. The 2013 Master Plan Amendment provides a land use plan for the Future Study Area.

This chapter focuses on the first four design elements and the Future Study Area. Parks and Open Spaces are discussed in Chapter 3, Rainwater Systems in Chapter 4, Connectivity in Chapter 5, and the pertinent Environmental Programs as applicable in Chapters 3, 4, and 5.

The Neighborhoods of Villebois Village

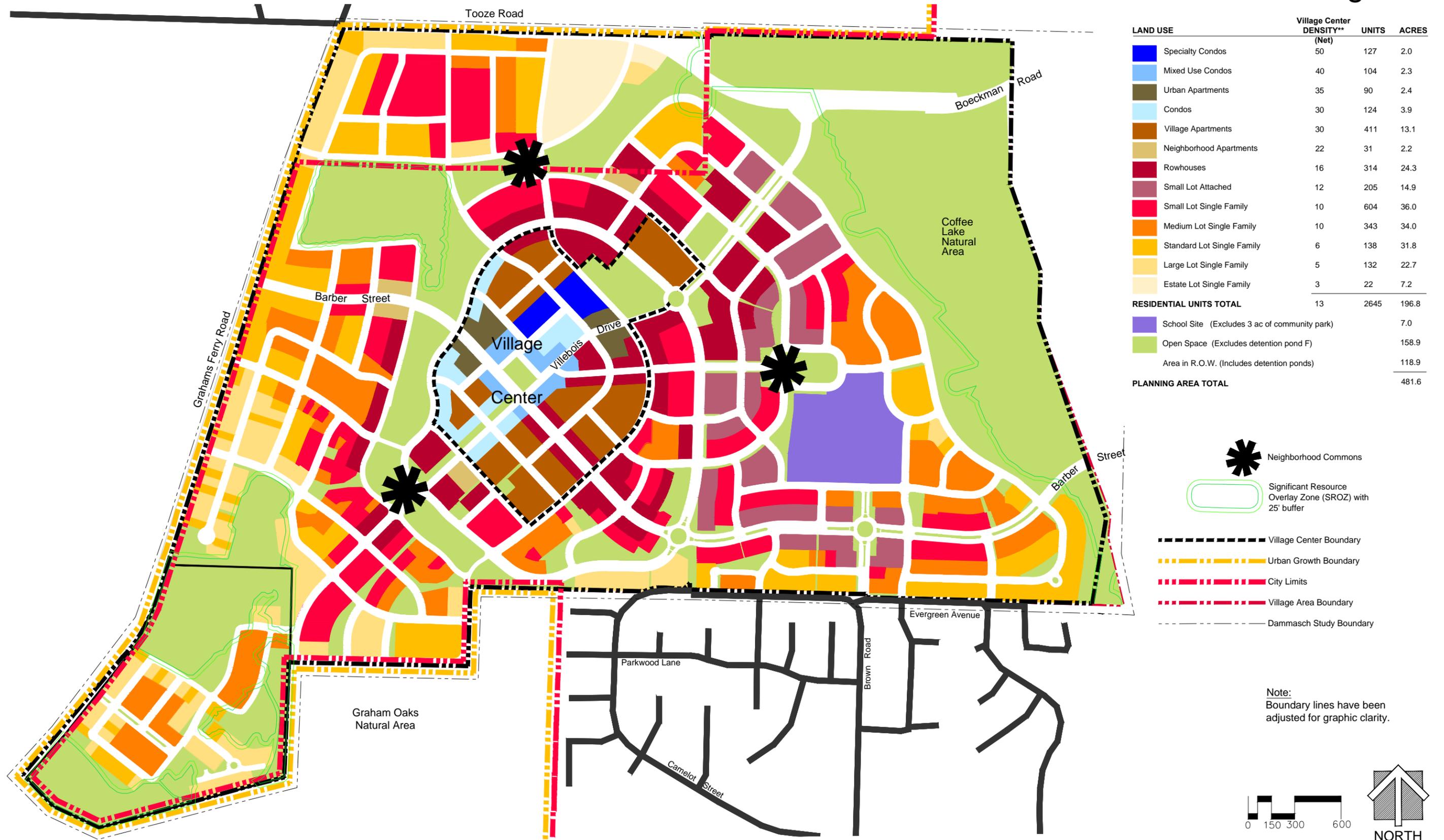
The neighborhood is the organizing land use principle for Villebois. Design elements characterizing the neighborhoods include:

- One-quarter mile radius in size,
- Neighborhood edges defined by the roadway system,
- A mix of housing types,
- A commons at each neighborhood,
- The Village Center at the confluence of the neighborhoods, and
- Open space linkages between neighborhoods and to adjacent open space.

The *Villebois Village Master Plan* provides three distinct neighborhoods, each within a quarter-mile radius of the Village Center, as shown in *Figure 2 – Neighborhood Concept Diagram*. The extensions of Boeckman Road and Barber Street form the internal edges of these neighborhoods. A Neighborhood Commons is a public open space that defines the center of each neighborhood, and may include a Neighborhood Center with convenient retail, transit stop and postal services. It is about a five-minute walk from each Neighborhood Commons to the Village Center - forming a human-scale, pedestrian-oriented environment.

Convenient retail uses at the Neighborhood Center are intended to serve the basic needs of neighborhood residents and are small in scale (no more than 3,500 square feet in area), compared to the larger retail development within the Village Center.

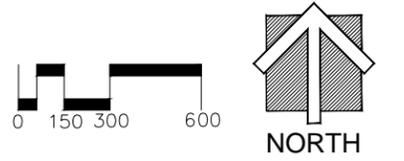
Figure 1



LAND USE	Village Center DENSITY** (Net)	UNITS	ACRES
Specialty Condos	50	127	2.0
Mixed Use Condos	40	104	2.3
Urban Apartments	35	90	2.4
Condos	30	124	3.9
Village Apartments	30	411	13.1
Neighborhood Apartments	22	31	2.2
Rowhouses	16	314	24.3
Small Lot Attached	12	205	14.9
Small Lot Single Family	10	604	36.0
Medium Lot Single Family	10	343	34.0
Standard Lot Single Family	6	138	31.8
Large Lot Single Family	5	132	22.7
Estate Lot Single Family	3	22	7.2
RESIDENTIAL UNITS TOTAL	13	2645	196.8
School Site (Excludes 3 ac of community park)			7.0
Open Space (Excludes detention pond F)			158.9
Area in R.O.W. (Includes detention ponds)			118.9
PLANNING AREA TOTAL			481.6

- Neighborhood Commons
- Significant Resource Overlay Zone (SROZ) with 25' buffer
- Village Center Boundary
- Urban Growth Boundary
- City Limits
- Village Area Boundary
- Dammasch Study Boundary

Note:
Boundary lines have been adjusted for graphic clarity.



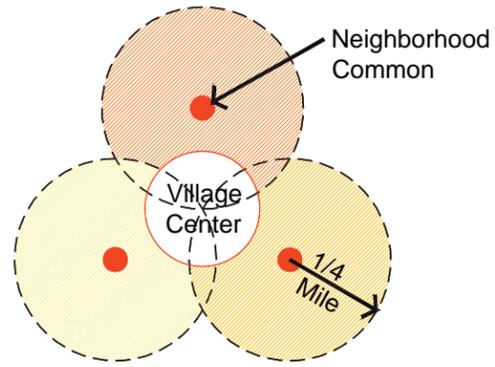
NOTES:
The Villebois Village Master Plan shall comply with the City of Wilsonville SROZ regulations. Encroachments within the SROZ are shown for illustrative purposes only, and will be reviewed for compliance or exemption as more detailed information is provided that will affect the SROZ areas. Adjustments in plan, street alignments, and intersections as well as rainwater facilities and pathways will be made to comply with SROZ regulations.

** An average village density (net) is noted for informational purposes only. The net area used to calculate densities excludes right-of-way and park/open space areas.

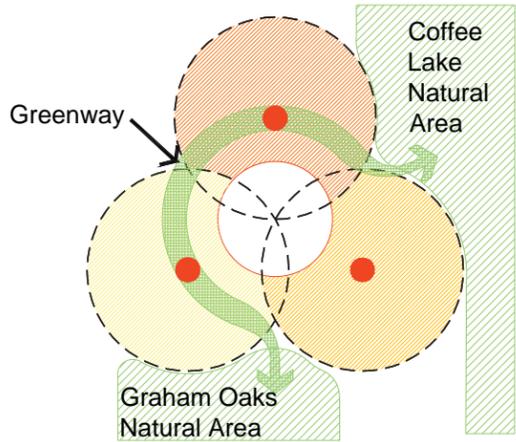
Land Use Plan

JULY 26, 2013

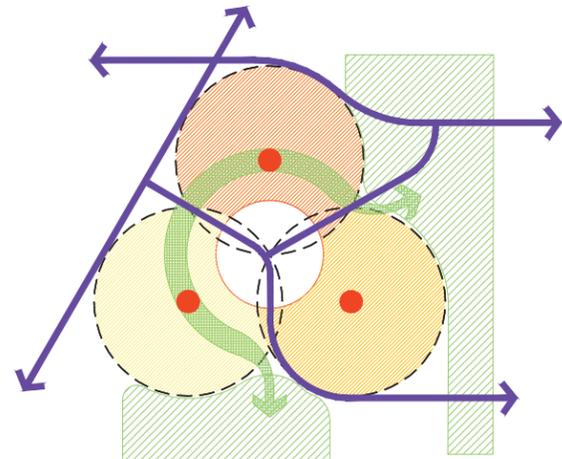
Figure 2



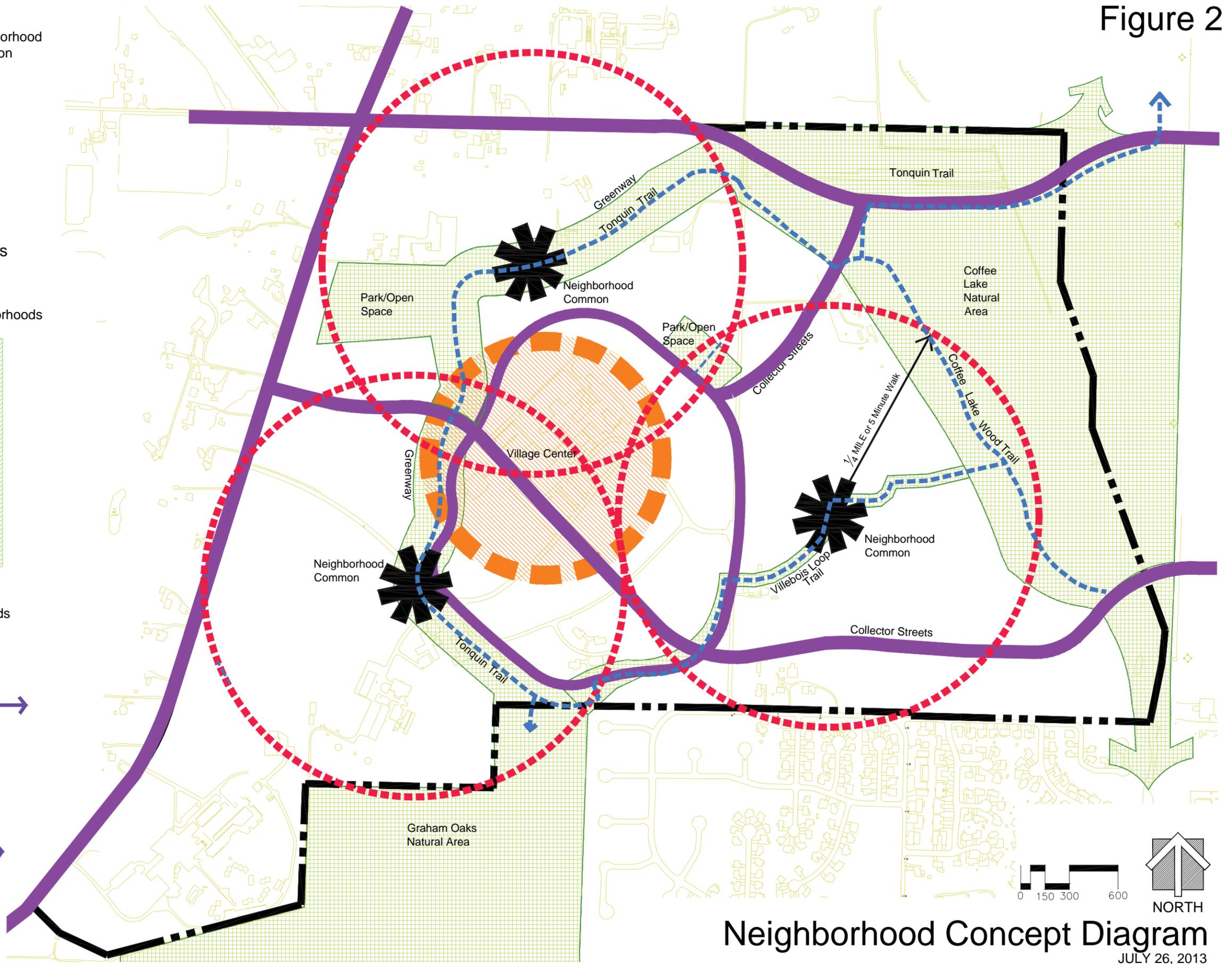
Conceptual Diagram - Neighborhoods
 - 1/4 mile radius neighborhood = 5 minute walking distance
 - Commons at neighborhood center
 - Village Center at the confluence of neighborhoods



Conceptual Diagram - Greenway
 - Connection to adjacent open spaces
 - Open space linkage between neighborhoods



Conceptual Diagram - Roadways
 - Roadway system defines neighborhood edges



Neighborhood Concept Diagram
 JULY 26, 2013

Each neighborhood will include a mix of housing types, including detached and attached single-family lots with a variety of lot sizes ranging from about 9,500 square feet to approximately 2,500 square feet, ancillary dwellings, cluster housing and row houses. Market segments will include market rate for-sale and rental homes, affordable housing, and community housing per ORS.426.508.

The State statute defines "community housing" to mean residences for "chronically mentally ill persons." The F.H. Dammasch State Hospital property requires, as part of its sale, no more than ten acres total be reserved to this special community housing type.

The larger single-family lots will be located adjacent to existing single-family homes along Brown Road and Evergreen Road to the south, the Future Study Area to the southwest, Grahams Ferry Road to the west and Tooze Road to the north. They also will face onto the proposed Coffee Lake Drive that follows the border of the Coffee Lake and Metro open space, helping to make a soft transition between the built and the natural environment. The medium-density housing will be used to help define important walking streets and open space edges at the transition between the neighborhoods and the Village Center.

The Village Center

The Village Center, with its heart at the intersection of Villebois Drive and the Barber Street extension, occupies about 42 acres at the center of Villebois (*see Figure 2A – Village Center Boundary & Land Use Plan*). Design elements, which characterize the Village Center include:

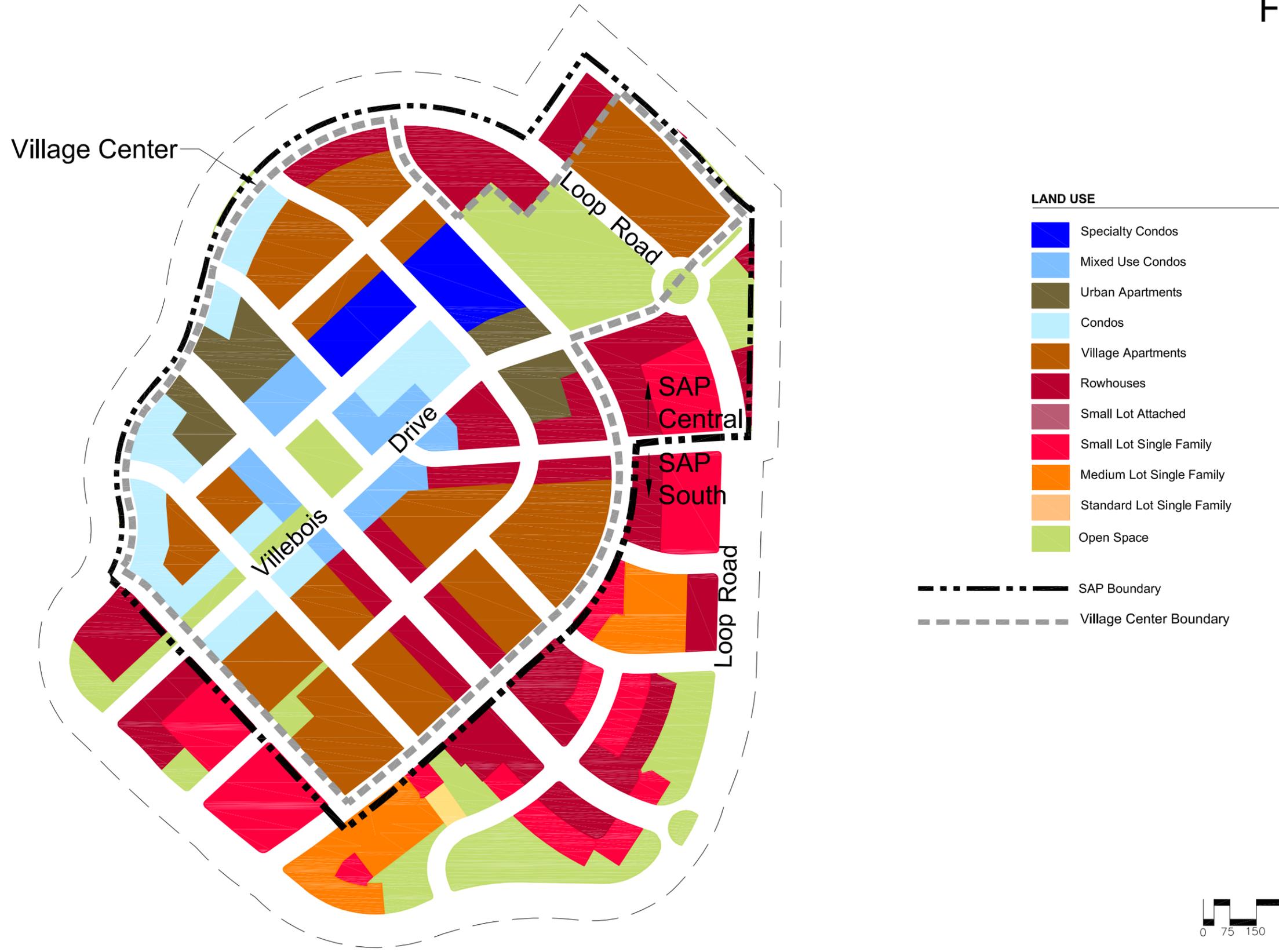
- Higher-density residential housing,
- Mixed-use development,
- A location inside a loop road connecting with three neighborhoods,
- Opportunities for office/commercial/light industrial/civic uses,
- Easy access to multi-modal transportation opportunities,
- Inclusion of parks and greenway features, and
- Adaptation of former Dammasch State Hospital buildings, as feasible.

Higher density development in the Village Center includes, but is not limited to, multi-family residential and mixed-use development such as ground level retail or office and “flex-space” uses with office or multi-family residential units above.

The Village Center is intended to create the opportunity for the core area of Villebois to have a higher concentration of employment uses than may be allowed with the underlying Village zone. This area is designated for mixed-use (residential, retail, civic, and office development) and related employment uses. The transportation framework - including the Barber Street extension, Villebois Drive, the Loop Road and transit stops - provides access for cars, pedestrians and bicyclists in this high-density area. The Village Center is intended to provide locations for uses consistent with, but not limited to, the following examples.

- *Consumer Goods*: bookstore, clothing, florist, jeweler, pet shop, bicycle shop.
- *Food and Sundries*: bakery, specialty grocery, hardware, laundromat, dry cleaner, gifts.
- *General Office*: professional offices, non-profit, health services, governmental services, real estate, insurance, travel.
- *Service Commercial*: bank, day care center, photo processing, telecommunications, upholstery shop.
- *Lifestyle and Recreation*: hair salon, specialty retail, theater, video/DVD store, art gallery, health club, restaurants, dance studio.
- *Hospitality*: hotel, bed and breakfast, conference center.
- *Light Manufacturing/Research and Development*.
- *Civic/Institutional*: meeting hall, library, museum, churches, farmer’s market, community center.
- *Residential*: condominiums, apartments, and townhouses.

Figure 2A



Village Center Boundary and Land Use Plan

AUGUST 15, 2005

Net residential density in the Village Center ranges from just over 16 dwelling units per acre (for row houses) to 50 or more dwelling units per acre (for specialty condos) and includes flex-space in mixed-use buildings, freestanding condominiums and apartments, and apartments above retail or office space. Individual buildings will range in height from one to four or more stories. The Village Center is defined by the greenway to the west and is organized around open space areas, Villebois Drive, and the former Dammasch State Hospital buildings.

The Elementary School

In accordance with the recommendation and request of the West Linn/Wilsonville School District, a 10-acre elementary school (inclusive of a 3-acre Community Park) is planned to be provided within Villebois. *Figure 1 – Land Use Plan* shows the elementary school location within SAP East. The School District has indicated that they will continue to work with the Master Planner, the City and affected property owners throughout the subsequent planning and development stages of the project. .

Future Study Area – (Formerly LEC)

Per the City’s approval of City Files 02PC07A and 02PC07C, the Future Study Area, formerly known as the Living Enrichment Center (LEC), has been included in the area to be designated Residential – Village on the Comprehensive Plan Land Use Map. The Future Study Area is located on a parcel that is approximately 42.8 acres in area. Approximately 23.2 acres are located within the City’s Significant Resource Overlay Zone (SROZ) overlay leaving approximately 19.6 acres outside of the SROZ boundaries.

Representatives of LEC provided testimony during the original Master Plan adoption on proposed future uses of the LEC campus. In their March 31, 2003 letter, a representative of LEC proposed the following uses (which include expansion of some or all current uses):

- New sanctuary;
- New teen center;
- Chapel; and
- Expansion of the retreat center, including additional overnight lodging facilities and senior housing and care facilities.

The LEC campus is no longer in operation. A land use plan for the Future Study Area is provided with the 2013 Master Plan Amendment, consistent with the Residential – Village Comprehensive Plan designation. The residential land uses in the Future Study Area will be limited to single-family lots in the medium to estate land use category identified in Wilsonville Code Subsection 4.125 (.18) F. 1. a. iv. arranged in a similar pattern as other areas on the edges of Villebois.”

The *Villebois Village Master Plan* recognizes the Future Study Area as part of the Residential – Village Comprehensive Plan land use designation and illustrates this area within the boundaries of the Master Plan. Full analysis of the Future Study Area’s compliance with the City’s Comprehensive Plan and its various sub-elements is provided with the 2013 Master Plan Amendment.

Figure 3 – Specific Area Plan Boundaries is amended to include the Future Study Area in Specific Area Plan-South. An amendment to Specific Area Plan-South will be submitted to include the Future Study Area as Plan Area 2 and as a part of this SAP amendment, compliance must be demonstrated with the *Villebois Village Master Plan*, the City’s Comprehensive Plan and its sub-elements, the City’s Planning and Land Development Ordinance, and all other applicable regulatory requirements. The developer of the Future Study Area shall be responsible for obtaining any master plan or ordinance amendment(s) that may be necessitated by their proposal.

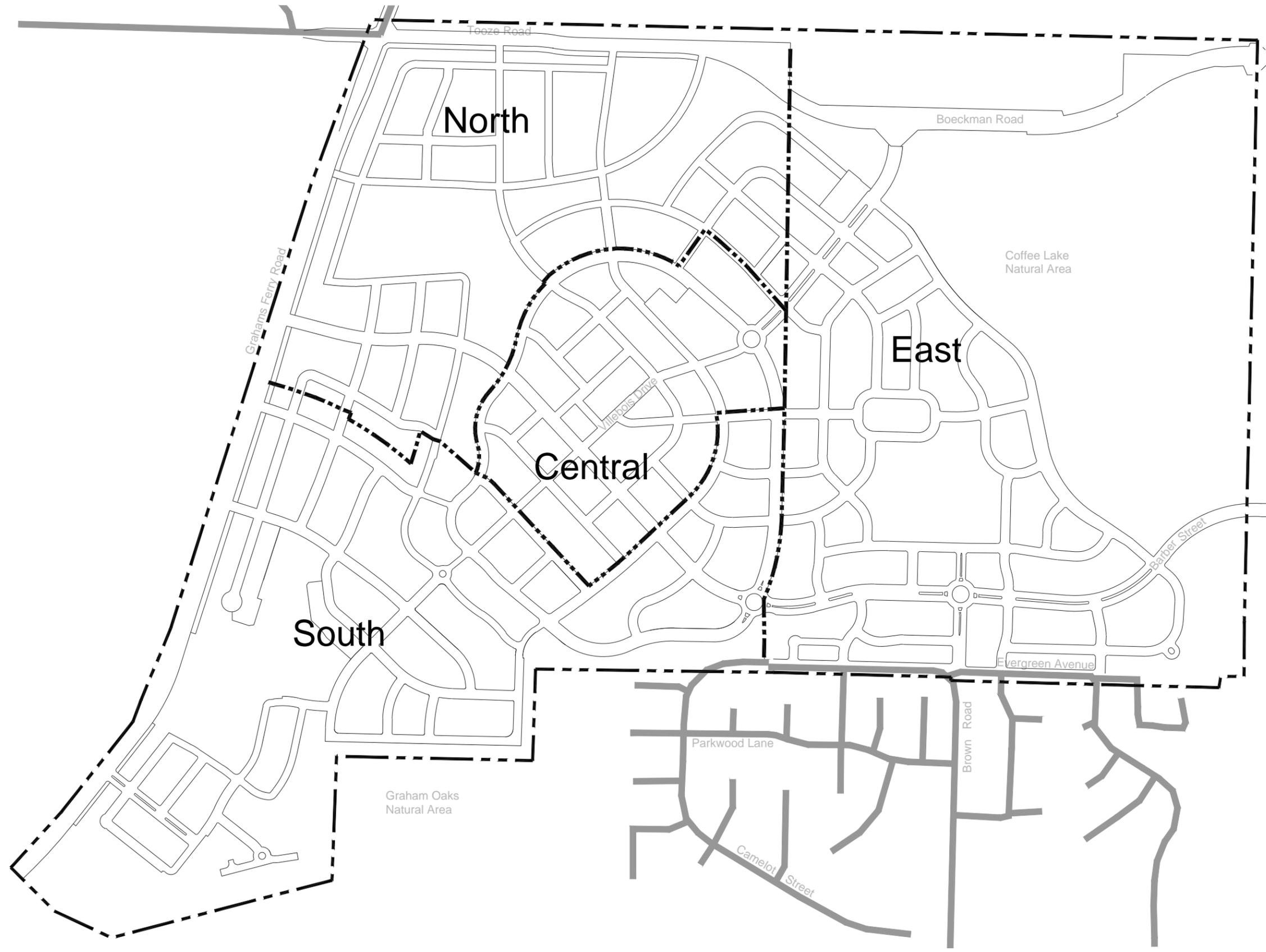
The Next Step

Prior to or concurrent with approval of this *Villebois Village Master Plan*, the City of Wilsonville Comprehensive Plan text will be amended to include the Residential-Village (R-V) land use designation (City File 02PC07A) and the Comprehensive Plan Map will be revised to designate the *Villebois Village Master Plan* area Residential-Village (City File 02PC07C). The uses and systems envisioned by the *Villebois Village Master Plan* within the Residential-Village designation will be implemented through the ordinances of the Village zone and the review procedures established with the Village zone (City File 02PC08).

Refinements to the *Villebois Village Master Plan* are anticipated as more detailed plans and analyses are crafted during the development process. Plan refinements will be formalized through a process established under the Village zone, entitled Specific Area Plans (SAPs). Specific Area Plan approval will occur subsequent to *Villebois Village Master Plan* approval and prior to submittal of development applications. Specific Area Plans will provide a more detailed analysis of the development of specific portions of the *Villebois Village Master Plan* area. Specific Area Plan areas are conceptually identified within the *Villebois Village Master Plan* as shown on *Figure 3 – Conceptual Specific Area Plan Boundaries*. SAP boundaries will be refined with the adoption of SAPs. Specific Area Plans will include a Pattern Book and Community Elements Book, as well as other items as specified in the implementing Village zone. The pattern book will depict the architectural character of the Specific Area Plan. The Community Elements Book will establish the type and location of community elements within the Specific Area Plan, including, but not limited to: lighting, street trees, site furnishings and tree protection standards.

Villebois will be developed over a period of 7 to 12 years. Phasing will be determined by several factors, including response to market analysis and market conditions, availability and capacity of utilities and infrastructure, and timing of road improvement approval and funding (see *Figure 4 – Sequence of Development*).

Figure 3



Legend

- S.A.P. Boundary
- Village Area Boundary
- Dammasch Study Boundary

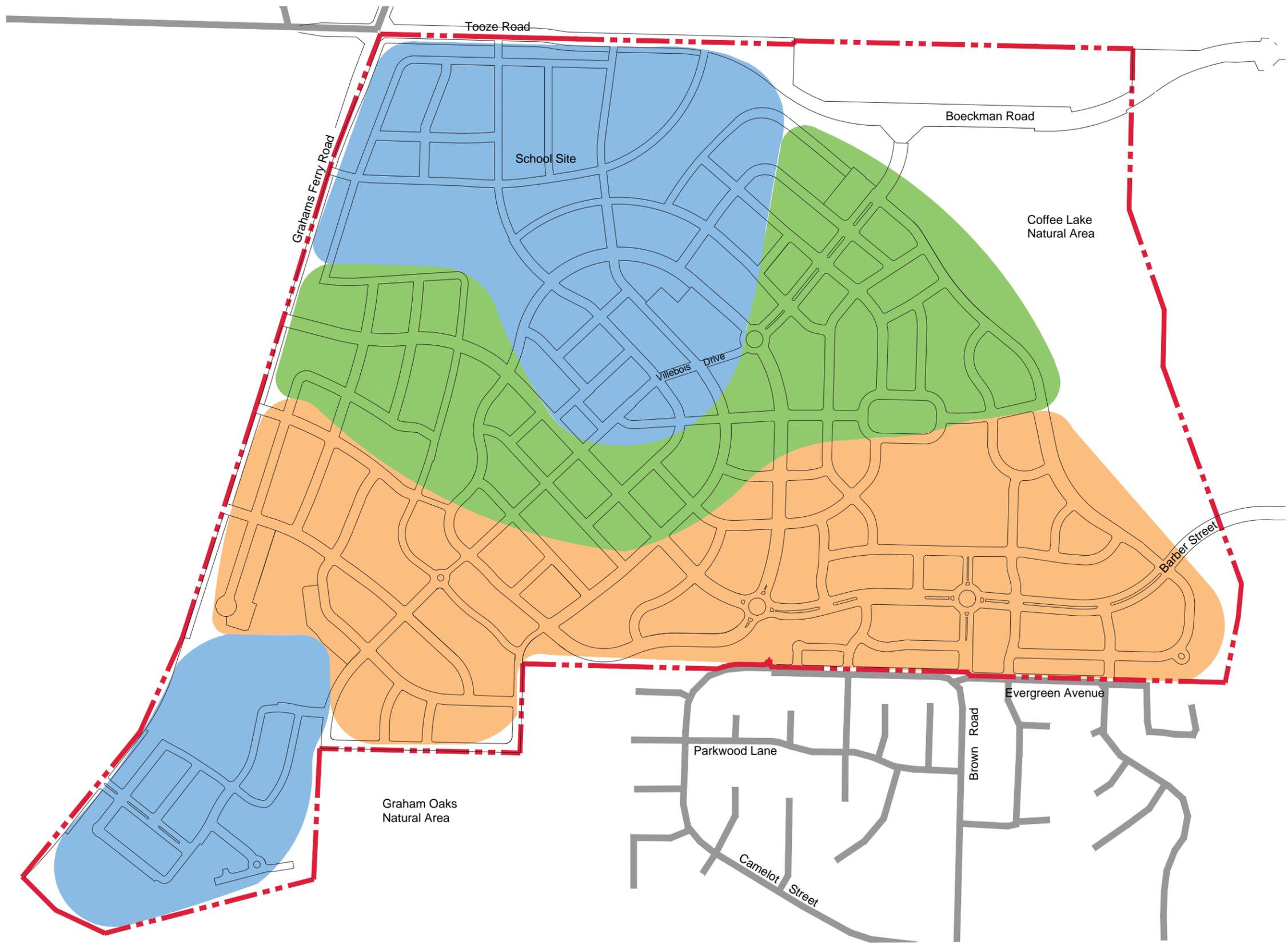
Note:
Boundary lines have been adjusted for graphic clarity.

0 150 300 600

NORTH

Conceptual Specific Area Plan Boundaries
JULY 26, 2013

Figure 4



Legend

- Early Phases - 0 to 3 years
- Middle Phases - 2 to 6 years
- Later Phases - 5 to 9+ years
- Village Area Boundary

* Phasing dates are based on original Master Plan approval dated August 18, 2003

0 150 300 600

NORTH

Conceptual Sequence of Development

JULY 26, 2013

2.2 VILLEBOIS VILLAGE MASTER PLAN IMPLEMENTATION

GENERAL – LAND USE PLAN

Goal

Villebois Village shall be a complete community that integrates land use, transportation, and natural resource elements to foster a unique sense of place and cohesiveness.

Policies

1. The Villebois Village shall be a complete community with a wide range of living choices, transportation choices, and working and shopping choices. Housing shall be provided in a mix of types and densities resulting in a minimum of 2,300 dwelling units within the *Villebois Village Master Plan* area.
2. Future development applications within the Villebois Village area shall provide land uses and other major components of the Plan such as roadways and parks and open space in general compliance with their configuration as illustrated on *Figure 1 – Land Use Plan* or as refined by Specific Area Plans. The proposed uses for the Future Study Area Specific Area Plan Amendment to SAP South shall be those identified in *Figure 1 – Land Use Plan*, which includes residential uses being limited to single-family lots in the medium to estate land use category identified in Wilsonville Code Subsection 4.125 (.18) F. 1. a. iv. arranged in a similar pattern as other areas on the edges of Villebois. Due to its location outside the general trapezoidal shape of Villebois and distance from the Village Center and neighborhood commons as well as its relatively small size, the Future Study Area Specific Area Plan Amendment to SAP South shall not be considered a neighborhood plan as defined in Section 2.1 of the *Villebois Village Master Plan*.
3. The Villebois Village shall provide civic, recreational, educational and open space opportunities.
4. The Villebois Village shall have full public services including: transportation; rainwater management; water; sanitary sewer; fire and police services; recreation, parks and open spaces; education; and transit.
5. Development of Villebois shall be guided by a Finance Plan and the City's Capital Improvement Plan, ensuring that the availability of services and development occur in accordance with the City's concurrency requirements (see Implementation Measure 4, below).

Implementation Measures

1. Allow for unique planning and regulatory tools that are needed to realize the *Villebois Village Master Plan*. These tools shall include, but are not limited to: Specific Area Plans; Pattern Books; and Community Elements Books.
2. Adopt the newly created Village zone district, which may be applied to the *Villebois Village Master Plan* area designated Residential-Village on the Comprehensive Plan Map. The new Village zone shall be based on the *Villebois Village Master Plan* Goals, Policies and Implementation Measures contained within this document.
3. Refinements to the *Villebois Village Master Plan* are anticipated as more detailed plans are developed for the Specific Area Plans. Specific Area Plans may propose refinements to the *Villebois Village Master Plan* without requiring an amendment to the *Villebois Village Master Plan* provided the refinement is not significant. Non-significant refinements shall be defined in the Village ("V") Zone text and may include, but are not limited to: minor alterations to street alignments or minor changes in area or uses.

Disagreement about whether a refinement is significant shall be resolved by a process provided in the Village ("V") Zone text.

4. The Master Planner shall coordinate with the City on the development of a Finance Plan for necessary urban services and public infrastructure. Each developer within Villebois Village will sign their own Development Agreement that will address the necessary urban services and public infrastructure as appropriate.
5. The Specific Area Plan (SAP) Amendment to SAP South for the Future Study Area shall demonstrate compliance with the *Villebois Village Master Plan*, the City's Comprehensive Plan and its sub-elements, the City's Planning and Land Development Ordinance, and all other applicable regulatory requirements. The developer of the Future Study Area shall be responsible for obtaining any master plan or ordinance amendment(s) that may be necessitated by their proposal.

RESIDENTIAL NEIGHBORHOOD HOUSING

Goal

The Villebois Village shall provide neighborhoods consisting of a mix of homes for sale, apartments for rent, row homes, and single-family homes on a variety of lot sizes, as well as providing housing for individuals with special needs. The Villebois Village shall provide housing choices for people of a wide range of economic levels and stages of life through diversity in product type.

Policies

1. Each of the Villebois Village's neighborhoods shall include a wide variety of housing options and shall provide home ownership options ranging from affordable housing to estate lots.
2. Affordable housing within Villebois shall include rental and home ownership opportunities.
3. The mix of housing shall be such that the Village development provides an overall average density of at least 10 dwelling units per net residential acre.
4. The Villebois Village shall accommodate a total of at least 2,300 dwelling units within the boundary of the *Villebois Village Master Plan*.
5. The Villebois Village shall provide a mix of housing types within each neighborhood and on each street to the greatest extent practicable.
6. The Villebois Village shall include community housing types consistent with Oregon Revised Statute 426.508(4), which requires that no more than 10 acres be retained from the sale of the former Dammasch State Hospital property for development of community housing for chronically mentally ill persons. The City of Wilsonville, the Oregon Department of Administrative Services, and the Mental Health and Developmental Disability Services Division shall jointly coordinate the identification of the acreage to be retained.
7. The development standards and Specific Area Plans required by the Village zone shall be consistent with the Governor's Quality Development Objectives and the Governor's Livability Initiative.
8. Each neighborhood shall be designed to increase transportation options. Neighborhoods shall be bike and pedestrian friendly.

9. Higher density residential uses shall be of a scale and design in keeping with the desired vision for Villebois as expressed in the *Villebois Village Concept Plan* and in the Policies and Implementation Measures of the *Villebois Village Master Plan*.
10. Natural features shall be incorporated into the design of each neighborhood to maximize their aesthetic character while minimizing impacts to said natural features.

Implementation Measures

1. Ensure, through the development standards and Pattern Book(s) required by the Village zone, that the design and scale of dwellings are compatible with the compact, pedestrian-oriented character of the concepts contained in the *Villebois Village Concept Plan* and the contents of this *Villebois Village Master Plan*.
2. Create a set of design guidelines for the development of Pattern Books with the Village zone requirements. Pattern Books shall address, at a minimum, architectural styles and elements, scale and proportions, and land use patterns with lot diagrams.
3. Develop affordable housing objectives for Villebois. Develop strategies to accomplish a variety of mixes and densities and indicate how build out under each Specific Area Plan implements those strategies and contributes to the overall goals and policies of the *Villebois Village Master Plan*. The affordable housing objectives and plan is to be submitted before, or together with, the application for SAP Central.

VILLAGE CENTER

Goal

The Villebois Village shall include a mixed-use Village Center that will be the core of the community.

Policies

1. The Village Center shall be a highly pedestrian-oriented place that is the focus of a mix of residential, shopping, service, and civic and mixed-use buildings.
2. The Village Center shall encourage multi-modal transportation system opportunities with good access by vehicular, pedestrian, bicycle and transit traffic.
3. The Village Center shall include a civic plaza to serve as a community gathering space, along with a main street environment establishing a social atmosphere that encourages residents and visitors to linger and interact.
4. Connectivity to the Village Center from adjacent neighborhoods shall ensure that services are centralized and convenient to pedestrian-oriented shopping.
5. The core area of the Village Center shall provide for mixed-use residential, retail, and employment areas that may include office uses and live-work housing opportunities.
6. The Villebois Village shall allow redevelopment of the former Dammasch State Hospital building provided that it does not create conflicts with the overall development plan.

Implementation Measures

1. Establish a review process for the Village Center with the implementing Village zone ordinances. This review process shall guide development in the Village Center and recognize that uses may evolve over time as this area matures.
2. Specify a mixture of uses (residential, commercial, retail, civic, and office development) with the implementing Village zone that will support the long-term vitality of the Village

Center and enhance the creation of a true urban village at its core. Employment may include uses related to high-tech businesses. The Village Center is intended to provide locations for uses consistent with, but not limited to, the following examples.

- *Consumer Goods:* bookstore, clothing, florist, jeweler, pet shop, bicycle shop.
- *Food & Sundries:* bakery, specialty grocery, hardware, laundromat, dry cleaner, gifts.
- *General Office:* professional offices, non-profit, health services, governmental services, real estate, insurance, travel.
- *Service Commercial:* bank, day care center, photo processing, telecommunications, upholstery shop.
- *Lifestyle & Recreation:* hair salon, specialty retail, theater, video/DVD store, art gallery, health club, restaurants, dance studio.
- *Hospitality:* hotel, bed and breakfast, conference center.
- *Light Manufacturing/Research and Development.*
- *Civic/Institutional:* meeting hall, library, museum, churches, farmer's market, community center.
- *Residential:* condominiums, apartments, and townhouses.

ELEMENTARY SCHOOL

Goal

The *Villebois Village Master Plan* shall provide for an elementary school within the Villebois Village portion of the *Villebois Village Concept Plan*.

Policies

1. The Plan for Villebois Village shall provide an elementary school site in a location that provides safe and convenient access and complements the surrounding neighborhood.
2. Coordination shall continue to occur among the West Linn/Wilsonville School District, the Master Planner, the City and the affected property owners throughout the subsequent planning and development stages relating to the elementary school.

Implementation Measure

1. The school site shall be developed in the location noted on *Figure 1 – Land Use Plan*.
2. Architectural and community elements associated with the school shall be addressed in the forthcoming SAP East application. If these details are not available at the time of SAP East application, a SAP amendment may be filed to address these elements when the school is ready to develop.

CHAPTER 3 – PARKS & OPEN SPACE / OFF-STREET TRAILS & PATHWAYS

3.1 INTRODUCTION / PROPOSAL

The parks and open space plan is designed to provide a range of experiences for residents and visitors to Villebois. The goal is to offer a variety of opportunities that are engaging to all senses, through the provision of programming elements that allow for a wide variety of experiences. For example, sports fields and courts providing for organized play such as soccer, bocce ball, basketball and tennis are provided as well as numerous lawn areas for informal play, such as tag football, Frisbee or catch.

Parks and open spaces in Villebois will offer a wide variety of experience intensities. Experiences can be highly active, such as three-on-three basketball, or highly passive, such as reading on the grass in Hilltop Park. Areas of tranquility and areas of intense activity are distributed throughout the community, with care taken to minimize conflict between the two. On any given day, a resident or visitor to Villebois can choose to join the game of basketball going on near West Park or just as easily take a quiet walk through a wooded area.

Park experiences are connected to one another through an interconnected trail and pathway system within Villebois. Residents and visitors to Villebois can easily access miles of trails, pathways, sidewalks and bike lanes throughout the community, as shown on Figure 5. Paths and trails connect through developed parks, meander along natural areas and connect destination points within Villebois and connect to the larger Wilsonville community.

Existing natural features are celebrated in the parks, and enhanced through tree planting, wetland improvements, and the establishment of plantings as wildlife forage and habitat. Many of the edges of Villebois abut preserved natural areas, such as Coffee Lake Natural Area and the Graham Oaks Natural Area. Trails along and into these areas are provided as well as overlook points with seating for opportunities to stop and appreciate the natural areas.

Many different uses and goals are continually competing within Villebois for limited space. Some of these competing factors include the obligation to achieve at least 2,300 units within Villebois, the emphasis on connectivity resulting in an increase in the number of streets and paths provided, the provision of a mixed-use center, the protection of natural resources, stormwater detention and water quality as well as rainwater components and park space. In balancing all of these factors, choices must often be made between them. In preparation of this Master Plan, City guidance has emphasized a value on the provision of usable park spaces.

The provision of active or usable park spaces within Villebois has been balanced with the provision of rainwater features within the parks. In general, conceptual planning for the parks has placed greater value on the provision of active or usable park spaces, reducing opportunities for rainwater compliance. Detention and water quality facilities are integrated into the parks where required and rainwater components are provided where they will not interfere with possible usable park spaces.

On-street parking will be available for the parks, typically across the street or away from the immediate frontage of the park itself when views into and out of the park are to be preserved. There are some locations where on-street parking spaces are provided directly adjacent to the parks. This occurs in places where parking is necessary to serve the park and when important view corridors will not be compromised. Areas where on-street parking will be allowed around the parks can be seen on the Parks Capacity Analysis Drawings located in the Villebois Village Master Plan Technical Appendix as Appendix F.

The park and trail descriptions that follow generally describe each park space and provide details about the specific uses in each park. These park descriptions work in tandem with Figure 5 – Parks and Open Space Plan, Figure 5A – Recreational Experiences Plan, and Table 1: Parks Programming to detail the recreational experiences located throughout Villebois.

PARK DESCRIPTIONS: Since design of each park occurs later in the development process (at the PDP/FDP application), dimensions are approximate and quantities of park features listed below are at a minimum level of development and subject to refinement. Determination of funding of parks is pending review of the Finance Plan and Development Agreements by the City and the Developers.

Neighborhood Parks (PRMP Category)

Neighborhood parks are typically smaller than five acres and serve the surrounding neighborhood. They generally consist of both active and passive recreational activities.

NP-1: Oak Park (1.53 acres)

This park includes active and passive uses, and preserves several large oak trees. The Villebois Loop Trail runs along its southern edge. An open lawn area (110'x260') provides for informal play opportunities. The park will include a creative play area, paved walks, benches, and a picnic table. The park may also incorporate a stormwater/ rainwater feature into its design. Several houses will front on the park, benefiting from the amenity but also, providing a sense of security for the park.

NP-2: Cedar Park (1.00 acres)

Located at a prominent gateway to the Villebois Village Center, this park preserves seven incense cedars and emphasizes the space they create. The park routes the Villebois Loop Trail on its eastern side (Costa Circle East) and will include an open lawn area (290'x80') for informal active play. The park will also provide a child creative play area, benches and picnic tables. Several homes will front on Cedar Park providing open space outside the front doors and giving a sense of security (neighborhood/visibility) to the park.

NP-3: West Neighborhood Park (1.80 acres)

This park is the pivotal link between the Villebois Greenway and the Village Center Promenade, which leads to the Central Plaza. It also hosts a section of the Tonquin Trail. The southeast corner of the park will feature a neighborhood commons plaza space with a transit stop, restrooms, a drinking fountain, and a shelter with a barbeque, all adjacent to a large pond which will serve as an amenity for the park. The plaza will support seating (with benches located on the plaza and around the pond) and gathering spaces. The western side of the park will have two play structures, a water jet play fountain, picnic tables, a large open lawn area (160'x150') with views both north up the Greenway and southeast down the Greenway. This area will support informal active play areas as well as providing an opportunity for larger gatherings and may incorporate a rainwater feature.

NP-4: Hilltop Park (2.90 acres)

Existing healthy cedars and firs will be incorporated into the park design. The park features a bowled space easily adapted to an amphitheater, which can be used as a gathering and neighborhood performance space. An open lawn area (180'x140') will accommodate both active and passive use while providing views of Mt. Hood. Hilltop Park will be developed as an urban park with a restroom and potential features such as a water feature, a putting green, a play structure, an overlook shelter with a barbeque and drinking fountain, paved walks, benches, picnic tables, and may incorporate a stormwater/rainwater feature.

Figure 5



Legend

- Neighborhood Commons
- PP** Pocket Park
- LG** Linear Green
- UP** Urban Plaza
- Villebois Proposed Major Pathways
- Villebois Proposed Minor Pathways
- Villebois Proposed Nature Trails
- Wetland Delineation
- Tentative 100 Year Flood Line (pending approval of MT2 application to update mapping for the upper portion of Coffee Lake Creek, Seely Ditch, and Basalt Creek prepared by HDR on October 25, 2005)
- Significant Resource Overlay Zone (SROZ) with 25' buffer

Elementary School Site: includes minimum 3 acre Community Park

Tree Rating

- Important
- Good
- Moderate
- Poor
- Tree Canopy Unspecified

NOTE: Tree ratings are conceptual and are to be re-evaluated with appropriate SAP application.
 Classification Method:
 Trees were rated based on the following considerations:
 1. Health
 2. Species (natives with habitat and ecosystem value)
 3. Compatibility with development
 4. Form / Visual Interest / Mature Size

- Trees in the important category rated high in all four areas.
- Trees in the good category had good health and were a desirable species, but had irregular form or less compatibility with development.
- Trees in the moderate category had good to moderate health and form, but were a less desirable species or may be less compatible with development.
- Trees in the poor category had poor health and/or substantial damage.

- Neighborhood Parks - 21.97 acres**
- East Neighborhood Park - 1.60 acres
- Cedar Park - 1.00 acre
- Oak Park - 1.53 acre
- Fir Park - 1.00 acre
- (UP)Village Center Plaza - 0.52 acres
- Hilltop Park - 2.90 acres
- West Neighborhood Park - 1.80 acres
- (PP)Pocket Parks - 5.83 acres
- (LG)Linear Greens with Pathways- 5.10 acres
- (LG)Village Center Promenade- 0.69 acres
- Community Parks - minimum 3.00 Acres**
- Elementary School
Minimum 3 acres of park area associated with school location
- Regional Parks - 33.45 acres**
- Villebois Greenway - 33.45 acres
- Open Space - 101.31 acres**
- Forested Wetland Preserve - 5.07 acres
- Forested Wetland Preserve (Future Study Area) - 23.05 acres
- Upland Forest Preserve - 10.60 acres
- Coffee Lake Natural Area - 62.59 acres
- Total amount of Parks= 58.42 acres
- Total amount of Open Space= 101.31 acres
- Total amount of Parks & Open Space= 159.73 acres

- Trails and Pathways - 50.38 miles**
- Nature Trail - 1.85 miles
- Minor Path - 1.20 miles
- Major Path - 2.90 miles (Tonquin Trail/Villebois Loop Trail/ Coffee Lake-Wood Trail)
- Bike Lane - 9.90 miles
- Sidewalks - 34.53 miles

- ### Park Legend
- City ownership; HOA maintenance for 5 years; then city maintenance except for Special Features. (Note: NP-4 and NP-6 may be in this category if restrooms and parking are provided for the community in addition to the park area shown. If not they will be owned and maintained by the HOA with public access.)
 - Owned and maintained by HOA with public access.
 - Coffee Lake Open Space- To be publicly owned and maintained, with more specific responsibilities to be detailed at the time of specific O&M Agreement for the appropriate development phase(s).

NOTES:
 The Villebois Village Master Plan shall comply with the City of Wilsonville SROZ regulations. Encroachments within the SROZ and flood plain are shown for illustrative purposes only, and will be reviewed for compliance or exemption as more detailed information is provided that will affect the SROZ areas. Adjustments in plan, street alignments, and intersections as well as rainwater facilities and pathways will be made to comply with SROZ regulations. Flood Insurance Rate Map 410025-0004-C dated February 19, 1987 shows the northerly limit of the detailed study area having an elevation of 143 (Ft. NGVD). This elevation has been used to approximate the flood plain limits within the project limits. Development in and around wetlands will be done per all applicable federal, state and local wetland regulations.

0 150 300 600

NORTH

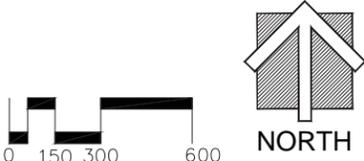
Parks and Open Space Plan

AUGUST 30, 2013

Figure 5B

LEGEND

- NP Neighborhood Parks
- PP Pocket Parks
- LG Linear Green
- RP Regional Parks
- OS Open Space
- CP Community Park
- Major Trail
- Significant Resource Overlay Zone (SROZ) with 25' Buffer



Parks & Open Space Categories

JULY 26, 2013

Table 1: Park Programming Matrix (REVISED Oct. 7, 2013)

10/7/2013	NP 1 - Oak Park	NP 2 - Cedar Park	NP 3 - Sofia Park	NP 4 - Collina Park	NP 5 - Fir Park	NP 6 - East Neighborhood Park	NP 7 - Piazza Villebois	PP 1	PP 3	PP 6	PP 8	PP 10	PP 13	PP - Various (2, 4, 5, 7, 9, 11, 12, 14, 15)	PP 16	LG 5 A,B,C - The Promenade	LG - Various	CP 1 - School Community Park ***	RP 1 - Villebois Greenway	RP 2 - Palermo Park	RP 3 - Villebois Greenway	RP 4 - Villebois Greenway	RP 5 - Villebois Greenway	RP 6 - Villebois Greenway	RP 7 - Villebois Greenway	RP 8 - Villebois Greenway	OS 1 - Forested Wetland Preserve	OS 2 - Upland Forest Reserve	OS 3 - Forested Wetland Reserve (Future Study Area SROZ)	OS 4, 5, 6 - Coffee Lake Natural Area	TOTAL AMENITIES (dots represent presence, not quantities)	Units				
Park Area (acres)	1.53	1.00	1.80	2.90	1.00	1.60	0.52	0.51	0.51	0.43	0.32	0.68	0.42	2.70	0.26	0.69	5.10	3.00	0.59	2.33	4.01	6.14	2.24	5.93	3.01	9.20	5.07	10.60	23.05	62.59	159.73	Acres				
Amphitheater				•																												1				
Barbeque			•	•		•																•	•										5			
Child Play:																																				
structure			•	•		•			•	•	•	•	•	•	•			•		•		•	•		•		•						19			
creative	•	•				•	•								•	•				•	•	•			•	•		•					12			
Community Garden					•																												34	Plots		
Drinking Fountain			•	•	•	•	•									•	•		•		•	•				•							15			
Lawn Play, general	•	•	•	•	•	•		•	•	•	•	•	•	•	•				•	•	•	•			•	•							10.85	Acres		
Lawn Play, sport field:																																				
little league baseball & youth/adult softball																		•															1	Fields		
soccer																		•								•							3-5	Fields		
Lawn Play, dog park																								•									1			
Mailboxes **																																				
Neighborhood Commons			•			•																	•											3		
Overlook				•		•													•				•			•								12		
Seating: benches	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
Tables, seating	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
Tables, game													•																					2	Tables	
Parking: On-street	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
Private recreation:																																				
swimming pool (outdoor)																																		1		
weight room																																			1	
meeting room																																			2	
Restrooms			•	•		•																	•			•									5	
School Gym																		•																	1	
Shelter			•	•		•	•															•	•		•	•									12	
Sport Court:																																				
half court basketball						•																													4	Courts
full court basketball																																			0	Court
tennis courts																										•									2	Courts
volleyball court																																			1	Courts
bocce ball																																			1	Court
horseshoe pit					•																														2	Pits
multipurpose court*				•	•													•																	4	Courts
skate plaza																																			1	
putting green				•																																
Transit Stop			•		•	•																													4	
Water experiences:																																				
storm / rainwater elements	•		•	•		•	•	•	•					•	•				•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
minor water feature				•		•																														
major water feature			•			•																														

Legend:
 CP = Community Park,
 LG = Linear Green
 NP = Neighborhood Park
 OS = Open Space
 PP = Pocket Park
 RP = Regional Park

* Multipurpose court consists of wall ball, four square, tether ball, other similar facilities able to function within approx. 1,000 sf area.
 ** Location and grouping of mailboxes to be determined.
 *** Ammenities to be determined pending discussions with school district.

NP-5: Fir Park (1.00 acres)

This park is situated along two minor pathways, providing connections to the Eastside Neighborhood Park to the southeast, Hilltop Park to the southwest, and the Villebois Greenway / Coffee Lake Natural Area to the north. This park will include areas for both active and passive recreation. Preliminary design includes a 100'x100' community garden, a lawn area (240'x50'), benches, a picnic table, drinking fountains, a multi-purpose court, and a horseshoe pit. This park will preserve two existing trees, one of them a 44" diameter Douglas fir.

NP-6: East Neighborhood Park (1.60 acres)

This park space is centrally located in the Village's east neighborhood. The Villebois Loop Trail will pass around this park providing connections to the Coffee Lake Natural Area to the east and to the Villebois Greenway and the Graham Oaks Natural Area to the southwest. Additionally, minor pathways provide connections to Brown Road to the south, and the Village Center to the west and to Fir Park to the north and to the elementary school to the south. This park will be characterized by a neighborhood commons area and will include such things as a plaza, a transit stop, a generally level lawn area (110'x230') for informal play, a water feature, benches, picnic tables, a shelter, a barbeque, a drinking fountain, and may include a stormwater/rainwater feature. A play structure, a creative play feature, a basketball court, and a multipurpose sport court will be provided for active recreation opportunities.

NP-7: Village Center Plaza (0.52 acres)

The plaza will be the heart of Villebois. The plaza is intended to promote community activities, such as festivals, outdoor movies, music and dining, children playing and people watching, all things that bring a mix of age groups together in public, and thus contribute to a greater sense of community. The plaza design will provide such elements as benches, shelter-covered tables, a drinking fountain, a water feature, a creative play area, bocce ball court, a transit stop, restrooms, and may include a stormwater/rainwater feature. A prominent architectural feature such as a bell tower with an overlook located on the opposite side of Barber Street will be a visual focal point from the plaza. The plaza design will help support pedestrian-scaled forms of retail and restaurants, with tables and display carts spread into the square. The plans for the plaza allow for the streets surrounding the plaza to be closed off, allowing large festivals or events to spill over into the streets, making the adjacent streets become a part of the plaza area. During such events, the functional size of this plaza space will be greatly expanded.

Pocket Parks

Small open spaces, or pocket parks, will be interspersed throughout the Villebois community. These spaces will incorporate important existing trees and provide recreational opportunities for residents. These open spaces will provide areas for community use that are convenient while helping to serve as a buffer between adjoining uses.

PP-1 & 2 (0.51 & 0.40 acres)

Pocket Parks 1 and 2 serve as extensions of Oak Park (NP-1). These pocket parks provide several lawn areas (100'x40', 50'x60' and 140'x80') for active play as well as benches, and a picnic table. Each of the pocket parks may include a rainwater feature in their design.

PP-3: South Pocket Park (0.51 acres)

South Pocket Park provides a neighborhood focal point and gathering spot. This pocket park provides an open lawn area (100'x130'), paved paths, a picnic table, benches, a play structure(s), and may incorporate rainwater features.

PP-4, PP-5, PP-14, PP-15 (0.18, 0.18, 0.25 & 0.13 acres)

These four small pocket parks serve as green space in front of the homes and apartments that will surround them. Pocket Park 5 serves as a connection between West Park (NP-3) and the Village Center Promenade (LG-5A/B/C) and includes a lawn play area (100'x25'). These pocket parks provide trails, benches, landscaping, and may incorporate stormwater/rainwater features.

PP-6 (0.43 acres)

This triangular shaped park will provide two lawn areas (80'x45' and 50'x80') for active play as well as a swing set, a play structure, and benches.

PP-7 (0.41 acres)

Pocket Park 7 is located across from Oak Park and Cedar Park. This pocket park adds to the aesthetic appeal of the roundabout intersection including green space with lawn (230'x35') and large shade trees.

PP-8 (0.32 acres)

Pocket Park 8 is located in the far southeastern corner of Villebois. This space includes a picnic table, benches, a play structure, and an open lawn area (30'x130').

PP-9 (0.21 acres)

Pocket Park 9 serves as one of a series of stepping-stones between Fir Park and the Villebois Greenway with linear green spaces connecting these three parks. It also preserves a large existing oak tree. This small pocket park will provide creative play as well as benches and a pathway.

PP-10 & 11: Garden Parks (0.68 & 0.34 acres)

Garden Park South (PP-10) and Garden Park North (PP-11) are pocket parks located along pathways leading to and from East Neighborhood Park (NP-6). These parks will provide spaces for recreation and informal play. Garden Park South includes swings, a play structure, picnic tables, benches, lawn plan (70'x60'), and may incorporate a rainwater element. These small parks serve the adjacent neighborhood, providing a continuous linear green connecting East Neighborhood Park with Fir Park to the north and the Villebois Loop Trail to the south.

PP-12 (0.60 acres)

Pocket Park 12 is located east of Hilltop Park. This park space includes a swing set, a play structure, benches, and existing trees.

PP-13 (0.42 acres)

Pocket Park 13 provides space with both passive and active recreation opportunities. This park includes a play structure, an open lawn area (115'x70'), game tables, and benches.

PP-16 (0.26 acres)

Pocket Park 16 provides a neighborhood focal point and gathering spot, and connections to the adjacent nature trail system. This pocket park provides nature paths, a picnic table, benches, and a play structure.

Linear Greens

Linear Greens are small park areas that provide connectivity among parks and through blocks. Linear Greens include trails.

LG-5A/B/C: Village Center Promenade (0.69 acres)

This linear green will link the Village Center Plaza with West Neighborhood Park and the Villebois Greenway. This Promenade will provide benches along the walkway and may provide stormwater/rainwater elements. Homes will front onto the Promenade, continuing the "eyes on

the street” concept that occurs in the Village Center and other more urban areas. The Promenade will thus become an extension or ‘spur’ of the Tonquin Trail in the Villebois Greenway leading pedestrians into the Village Center.

Miscellaneous Linear Greens (LG-1 through LG-4 and LG-6 through LG-22) (Total 4.81 acres)

These linear green spaces provide important pedestrian connectivity through small appealing “back routes” strategically located around the community. They highlight the locations of important pathways like the Villebois Loop Trail and other trails that connect through the middle of blocks into surrounding neighborhoods and open spaces. Some linear green spaces include lawn areas, benches, drinking fountains, and may include rainwater elements. Some of these spaces will incorporate existing trees and rainwater features into their designs.

Miscellaneous Linear Greens (Future Study Area) (Total 0.29 acres)

These linear greens offer visual and physical linkages to open space areas and areas adjacent to existing landscaping. Some linear green spaces include lawn areas, benches, and existing trees where feasible.

Community Parks (PRMP Category)

The only Community Park within Villebois is associated with the elementary school and is expected to serve the greater community around Villebois. This park provides the most formal active recreation space within Villebois.

CP-1: Elementary School Community Park (Minimum 3.00 acres)

This Community Park facility will be a minimum of 3 acres and will be provided at the elementary school site in Specific Area Plan East. The elementary school and Community Park will be built out by the West Linn/Wilsonville School District, who is in review of the Master Plan. This facility will include space for soccer fields that could be arranged to include one adult sized field (U-12 to adult) and one youth field (U-10 to U-12) or alternately three youth fields (U-9) and one youth field (U-10 to U-12) or two youth fields (U-10) and one youth field (U-10 to U-12). There is also a youth softball/little league baseball field (200’x200’), benches, picnic tables, a drinking fountain, and appropriately landscaped areas. A play structure and a multipurpose sport court will be located with the school. Potential community use of the school gym and classrooms and restrooms is under discussion and pending a cooperative agreement with the school district.

Regional Park (PRMP Category) (Total 33.45 acres)

The only regional park within Villebois is the Villebois Greenway. This park is expected to draw people from outside of Villebois. Villebois Greenway is made up of a series of eight contiguous areas, including West Neighborhood Park (NP-3, described above). The Villebois Greenway Regional Park provides a continuous band of park space, providing a significant portion of the park space within Villebois. The Greenway will include many of the major community recreation areas as described in each of the individual parks below. The Greenway will also serve as an important community link between the Tonquin Geologic area, a regionally significant open space to the north, Coffee Lake Natural Area (OS-4/5/6) to the east, and Graham Oaks Natural Area to the southwest of Villebois by way of the regional trail.

RP-1 (0.59 acres)

Regional Park component 1 provides a direct connection to the Graham Oaks Natural Area in the southwest quadrant of Villebois. This facility includes picnic tables, benches, a large stormwater detention pond (Pond F – the area of which is not included in the acreage of the park), and an overlook into the natural area.

RP-2 (2.33 acres)

Regional Park component 2 includes two stormwater detention ponds that serve as active recreational area during dry weather. The northerly stormwater/recreation facility will have a lawn area (270'x90') during dry weather. The southerly stormwater/recreation facility will have a sport court with half-court basketball, badminton, four-square, hopscotch, tetherball a tike track and child creative play. This park also includes a segment of the Tonquin Trail, preservation of existing trees, benches, a drinking fountain and picnic tables. This park provides a connection to the neighborhood commons facilities located immediately north in West Neighborhood Park (NP-3).

RP-3 (4.01 acres)

Regional Park component 3 includes a private recreation facility (owned by the Homeowners Association) with an outdoor pool, at shelter, benches and tables, a weight room, and a meeting room. This facility will be approximately 5,000 square feet in size. This otherwise public park also provides a child play structure, a creative play area, a volleyball court, a large lawn area (200'x140'), benches, picnic tables, and may have stormwater / rainwater features. This park provides a connection to the neighborhood commons located immediately south in West Neighborhood Park (NP-3).

RP-4 (6.14 acres)

Regional Park component 4 is contiguous to the Upland Forest Preserve (OS-2). The Villebois Loop Trail traverses the park. This park includes a creative play area, a basketball court, a multipurpose sport court, a horseshoe pit, and a large lawn area (160'x300'). In addition, the park includes a shelter with a barbeque, benches, picnic tables, a drinking fountain, and may have stormwater / rainwater features.

RP-5 (2.24 acres)

Regional Park component 5 is located south of the approximately 10-acre City-owned parcel where a number of active recreation fields are located. Planning for the park includes a neighborhood commons area with a skate plaza, a transit stop, restrooms, picnic tables, benches, a barbeque, shelter, play structure, an overlook view to Mt. Hood, a drinking fountain, water feature, a lawn area (100'x500'), and may include a stormwater/ rainwater feature.

RP-6 (5.93 acres)

Regional Park component 6 preserves several large groves of trees while also providing active and passive recreation opportunities. The park includes a two tennis court facility, a child play structure, a dog park, picnic tables, benches, a minor water feature and may include stormwater/rainwater features.

RP-7 (3.01 acres)

Regional Park component 7 provides a connection to the Coffee Lake Natural Area. This area includes benches, a shelter, lawn area (100'x60'), picnic tables, and may include stormwater/ rainwater features.

RP-8 North/Middle/South (9.20 acres)

Regional Park component 8 provides a continuation of the Villebois Greenway and a transition area between the residential areas of Villebois, the Coffee Lake Natural Area, and the Tonquin Geologic Area to the north. The eastern side of the Villebois Loop Trail will run through the park and connect to the Tonquin Trail in the north end of the park. This park will provide opportunities for both passive and active recreation. A basketball court, play structures and creative play, an adult recreation soccer field (100yds. x 50yds.) and lawn play areas (130'x430') will be available for active play. An interpretive area will be located within this park with numerous overlooks (several of which are shelters), benches, tables, and drinking fountains providing opportunities for seating and informal gatherings. There will also be restrooms associated with the interpretive area and porta-potties associated with the soccer field for convenience. The design of this park will incorporate 2 wetlands with boardwalks as well as a series of stormwater/ rainwater features.

Open Spaces

The Villebois land use plan incorporates abundant natural features, identified as nature preserves, covering over 101 acres of the site, including wetlands, forests and grasslands. These natural

features are not considered “park” area, but will feature functional trails, bike paths and bridges, as permitted in Section 4.139.04 of the Wilsonville Code. These natural areas are integrated into Villebois and are recognized as significant assets to the community, providing opportunities for activities such as bird watching and nature walks.

The Villebois site’s natural systems have been carefully inventoried and several areas are placed under the protection of the City’s Significant Resource Overlay Zone (SROZ) regulations and incorporated into the plan to minimize impacts from development.

OS-1: Forested Wetland Preserve (5.07 acres)

This natural preserve contains intact and functioning wetlands within the forested portion of the area and farmed wetlands to the north (any work or impacts within the forested wetland preserve shall comply with the SROZ regulations). The Villebois plan includes restoration of the farmed wetlands. The wetlands in this area may be expanded to mitigate for other small wetlands throughout the site, which will be lost as drainage patterns are changed. Walking trails will be provided on the upland perimeter of the wetland area. This open space will also include child creative play, benches, picnic tables, and may include stormwater/rainwater features.

OS-2: Upland Forest Preserve (10.60 acres)

This site is dominated by a large grove of conifer with some deciduous trees mixed in. The Villebois plan advocates removal of invasive species within this area (any work or impacts within the upland forest area shall comply with SROZ regulations). The forest is contiguous with the Villebois Greenway and the Villebois Loop Trail’s Tonquin segment. Smaller soft-surface nature trails will meander through the forest and link neighborhoods on either side. This second-growth forest ecosystem will act as a habitat patch, valuable to small mammals, invertebrates and birds. Along the nature trails two benches for wildlife viewing and quiet contemplation will complement the undeveloped nature of this open space. Picnic tables, and a child play structure will provide recreation opportunities while complementing the existing site features.

OS-3: Forested Wetland Preserve (Future Study Area SROZ) (23.05 acres)

This site contains intact and functioning wetlands within forested areas. While the plan does not include restoration or expansion of the wetlands in this site, any work or impacts within the forested wetland preserve shall comply with SROZ regulations as applicable. Smaller soft-surface nature trails will meander through the forest and link neighborhoods on either side. This forest ecosystem will act as a habitat patch, valuable to small mammals, invertebrates and birds. Benches will be located along nature trails in forested areas, and will be distanced from residential areas and play areas. These areas will offer opportunity for wildlife viewing and quiet contemplation that complements the undeveloped nature of this open space. This open space will also include a creative child play area, benches, and picnic tables. Additionally, connections to trails in Graham Oaks Natural Area will be provided.

OS-4/5/6: Coffee Lake Natural Area (62.59 acres)

Implementation Directive 11 of the *Villebois Village Concept Plan* (City File 02PC06) calls for development of “a wetland naturalization and enhancement plan” for the Coffee Lake wetland complex. The *Villebois Village Master Plan* includes Policy 7 and Implementation Measure 12 of Chapter 3 to encourage development of a naturalization and enhancement plan for the Coffee Lake wetland complex. Within Villebois, the Coffee Lake Wetland Complex is owned by a patchwork of different owners that include private individuals and developers, Metro and the Trust for Public Lands. Portions of the Coffee Lake Wetland Complex are also subject to a conservation easement for the wetland conservancy. The Coffee Lake Natural Area will eventually be linked via the Tonquin Trail, to Metro’s Tonquin Geologic Area and the Tualatin River National Wildlife Refuge to the north, one of ten urban refuges in the National Wildlife Refuge System. Refuge habitats consist of emergent, shrub, and forested, wetlands; riparian forests; oak and pine grassland; meadows; and mixed deciduous/coniferous forests common to Western Oregon prior to settlement.

Parts of the Coffee Lake area west of the SROZ will provide for recreational opportunities such as hiking, bicycling, picnicking and wildlife viewing. These areas are categorized and described as Regional Park - 8 North/Middle/South that runs along the western edge of the Natural Area.

Trails and Pathways

Nature Trails

Nature Trails will be located within two of the large natural open spaces at Villebois. There are approximately 1.85 miles of nature trails within Villebois. The locations and specifications of these trails can be seen on Figure 7 – Street Plan and the section seen on Figure 9B – Street and Trail Sections.

Upland Forested Preserve (OS-2): The *Villebois Village Master Plan* includes 2,300 lineal feet of nature trails through the forested area connecting neighborhoods to the north and south as well as linking to the multi-use trail in the greenway.

Forested Wetland Preserve (OS-3, 4, 5 and 6): The *Villebois Village Master Plan* includes 5,998 lineal feet of nature trails around the edge of the forested wetland, connecting the Future Study Area with the West Neighborhood Park and Greenway via a short sidewalk.

Minor Pathways

Minor pathways serve as pedestrian and bike connections between neighborhoods, traversing parks and linear greens. There are approximately 1.2 miles of minor pathways throughout Villebois. These are important contributors to the walkability and connectivity of Villebois. Minor pathways between neighborhoods are often accompanied by pocket parks, which are described above. The locations and specifications of these trails can be seen on Figure 7 – Street Plan and the section seen on Figure 9B – Street and Trail Sections - B.

Major Pathways

Tonquin Trail / Villebois Loop Trail / Coffee Lake-Wood Trail

There are several major pathways planned for Villebois: the Tonquin Trail, the Villebois Loop Trail and the Coffee Lake-Wood Trail. There are approximately 2.9 miles of major pathways throughout Villebois. These trails will have a 12 foot paved surface, or alternately a 10 foot paved section with a 3-foot soft path adjacent. The Villebois Loop Trail provides connections between the Tonquin Trail and the Coffee Lake-Wood Trail. The locations of these trails can be seen on Figure 5B.

In addition to providing an important linkage between the regionally significant Tonquin Geologic Region to the north and the Graham Oaks Natural Area to the south, the combined trails create a loop that links the major parks and open spaces in Villebois. The Villebois Loop Trail, comprised of the Tonquin Trail, and the Coffee Lake-Wood Trail, passes through the heart of each of the neighborhoods linking them. The trail provides an important function for school children, providing future access to both Boones Ferry Primary and Wood Middle Schools (through the future trail in the Graham Oaks Natural Area), as well as to the proposed elementary school in Villebois.

Sidewalks and Bike Lanes

Sidewalks are provided on all streets throughout Villebois and bike lanes are provided where appropriate to street function. These elements constitute approximately 42.70 miles of travel way, allowing for safe connections between all points within Villebois.

3.2 PARKS & RECREATION MASTER PLAN COMPLIANCE ANALYSIS

The park areas in Villebois have been evolving since 1997, the time of DATELUP (Dammasch Area Transportation-Efficient Land Use Plan). At that time, the park area for the 520 acre study area included 12 acres of Neighborhood Parks, 100 acres in the Coffee Lake Greenway and 13 acres of a Wildlife Corridor. The park areas totaled approximately 25% of the gross project area. In 2003, the Villebois Village Concept Plan was approved. This plan furthered the parks planning effort started with DATELUP, further defining specific park spaces and increasing the overall acreage of park areas to approximately 32% of the gross project area. In August of 2003, the Villebois Village Master Plan was approved. This plan maintained approximately 32% of the gross Villebois planning area in parks and open spaces and expanded upon the park detail that had been provided in the Concept Plan

The Villebois Village Master Plan originally included an analysis of the parks and open space areas in comparison to the 1994 Wilsonville Parks and Recreation Master Plan. The City's Parks and Recreation Master Plan did not include the Villebois planning area, therefore the compliance analysis relied on standards of park acreage per population. This analysis determined that the Villebois Village Master Plan satisfied the recommended standards contained in the City's 1994 Parks and Recreation Master Plan for the categories of neighborhood parks, minor limited use/minor multi use recreation centers, nature trails, and minor and major pathways but did not fully satisfy the recommended standards for community parks, regional parks, major limited use and major multi use recreation centers. In 2005/2006, the City has been working on a Parks and Recreation Master Plan update that will address the categories that were not fully satisfied.

After adoption of the original Master Plan, an effort began to further detail and define the park and open space areas. This effort reflects the desire of all parties involved to have greater clarity regarding parks and amenity requirements. Through a collaborative process between the Master Planner, City, Developers and various consultants, the focus shifted away from categorizing and comparing the park areas to those in the City's existing Parks and Recreation Master Plan, as originally done, to an experiential approach to the unique Villebois parks system. The experiential approach focuses on the park user, in an effort to create park spaces that are engaging to all of their senses and provide a broad range of intensities of activity, through the provision of programming elements that allow for a myriad of different experiences. With this change in approach, it was no longer logical to continue to use the standards in the 1994 Parks and Recreation Master Plan as guidelines to determine the adequacy of the park spaces in Villebois, although the plan uses some of the City's 1994 Parks and Recreation Master Plan terminology and categories.

3.3 VILLEBOIS VILLAGE MASTER PLAN IMPLEMENTATION

Goal

The Parks system within Villebois Village shall create a range of experiences for its residents and visitors through an interconnected network of pathways, parks, trails, open space and other public spaces that protect and enhance the site's natural resources and connect Villebois to the larger regional park/open space system.

Policies

1. Parks and open space areas shall incorporate existing trees where feasible and large shade trees shall be planted in appropriate locations in parks and open spaces.
2. An interconnected trail system shall be created linking the park and open spaces and key destination points within Villebois and to the surrounding neighborhoods. The trails system shall also provide loops of varying length to accommodate various activities such as walking, running and rollerblading.
3. Parks shall encourage the juxtaposition of various age-oriented facilities and activities, while maintaining adequate areas of calm.
4. Park designs shall encourage opportunities for wildlife habitat, such as plantings for wildlife foraging and/or habitat, bird and/or bat boxes and other like elements.
5. Gathering spaces in parks shall generate social interaction by adding layers of activity (Power of Ten).
6. Build-out of the Villebois Village Master Plan shall comply with the City of Wilsonville SROZ regulations. Any encroachment into the SROZ will be reviewed for compliance or exemption as more detailed information is provided that will affect the SROZ areas. Adjustments in plan, street alignments, and intersections as well as rainwater facilities and pathways shall be made to comply with SROZ regulations.
7. Naturalization and enhancement of the Coffee Lake wetland complex is desirable to be achieved overtime. This land is currently under a combination of public and private ownership.
8. Coordination shall continue to occur among the West Linn/Wilsonville School District, the Master Planner, the City, and affected property owners throughout subsequent planning and development stages relating to the elementary school to ensure the establishment of 3 acres of community park that includes sports fields, within the 10-acre elementary school site and to discuss the possibility of a joint school/community facility at the school site.
9. Parks and recreation spaces shall provide for flexibility over time to allow for adaptation to the future community's park, recreation and open space needs.
10. Integrated pest management practices, and other similar measures, shall be specified for the operation and maintenance of sports fields and other park uses in and adjacent to the floodplain.

11. On-street parking will not be allowed along the frontages of parks and open spaces where views into and out of the park spaces should be protected. Parking will be allowed along parks and open spaces in circumstances where it is necessary for the function of the park and will not obstruct the views into and out of the park area.

Implementation Measures

1. Future and pending development applications within Villebois (Specific Area Plans, Preliminary Development Plans and Final Development Plans) shall comply with the park, trail, open space system proposed in Figure 5 – Parks and Open Space Plan, Figure 5A – Recreational Experiences Plan, and Table 1: Parks Programming. Refinements may be approved in accordance with Village Zone section 4.125(.18)(F).
2. The Master Planner shall submit the necessary application materials for a legislative plan amendment to Chapter 3 – Parks and Open Space of the Villebois Village Master Plan related to the detailed indoor and outdoor parks and recreation programming, and amenity package no later than January 1, 2006. Application materials shall include updated Villebois Village Master Plan findings, text, maps and figures as appropriate, and supporting technical data and analysis to address this issue as appropriate. Such amendments shall apply to pending and future Specific Area Plan (SAP) and Preliminary Development Plan (PDP) approvals.
3. Parks and open spaces shall be designed to incorporate native vegetation, landforms and hydrology to the fullest extent possible.
4. Each Specific Area Plan shall include a Community Elements Book that (1) meets the requirements of Master Plan Chapter 3; (2) specifies the value system and methodology for tree preservation, protection and tree planting; and (3) provides a proposed plant list. The Community Elements Book also includes specifications for site furnishings and play structures. Proposed parks shall closely comply with the specifications of the applicable Community Elements Book.
5. Artwork is encouraged to be incorporated into parks.
6. The interface with the Graham Oaks Natural Areas should contain enhancements such as trail connections, landscaping, gateway features, seating and overlook opportunities.
7. The ability to recreate year round shall be preserved through measures such as: the provision of some hard surfaces that function in the wet season; areas shaded from the sun; areas protected from the rain; safely lit areas and indoor recreation opportunities.
8. Indoor/outdoor recreation areas and facilities associated with apartments and condominiums will be specified with each Preliminary Development Plan that includes apartments and/or condominiums and shall comply with the requirements of the Village zone.
9. The design of Villebois shall retain the maximum number of existing trees practicable that are six inches or more DBH in the “Important” and “Good” tree rating categories, which are defined in the Community Elements Books. Trees rated “Moderate” shall be evaluated on an individual basis as regards retention. Native species of trees and trees with historical importance shall be given special consideration for retention.

10. Each Specific Area Plan, Preliminary Development Plan and Final Development Plan shall include tree preservation plans and planting plans to indicate proposed tree planting within parks and along streets and descriptions of the size of trees when planted and upon maturity.
11. Provide for review of cultural and historic resources on portions of Villebois that are to be annexed into the City of Wilsonville with the Specific Area Plan.
12. Through time, the Developers shall have a responsibility to participate in planning, implementing and securing funding sources for a wetland naturalization and enhancement plan for the Coffee Lake wetland complex. These wetlands are adjacent to Coffee Creek and within the boundary of Villebois. The wetland naturalization and enhancement plan shall be initiated and completed with the phased development of the Village.
13. The Villebois Master Plan shall comply with the Significant Resource Overlay Zone (SROZ) regulations. Proposed encroachments into the SROZ for exempt or non-exempt development shall be reviewed for compliance with the requirements of Section 4.139 of the Wilsonville Code.
14. A conceptual plan for the lighting of park spaces throughout Villebois is provided on the plan included in Appendix H. Future development applications shall comply with the lighting system proposed in Appendix H. Refinements may be approved in accordance with Village Zone Section 4.125(.18)(F).
15. Each child play area shall include uses suitable for a range of age groups.
16. Storage for seasonal activity equipment, as appropriate to the HOA, will be located with the Community Center, Homeowners Association buildings, or with restroom facilities in or near the Neighborhood Commons.
17. Coordination shall continue to occur among the West Linn/Wilsonville School District, the Master Planner, the City and the affected property owners throughout the subsequent planning and development stages relating to the elementary school. Recreational amenities associated with the school shall be addressed in the SAP East application. If these details are not available at the time of SAP East application, a SAP amendment may be filed to address these elements when the school is ready to develop.
18. The park spaces included within each phase of development will be completed prior to occupancy of 50% of the housing units in that particular phase unless weather or other special circumstances prohibit completion, in which case bonding for the improvements shall be permitted.
19. Include the Villebois Master Plan area in all future updates of the 1994 Parks Master Plan.
20. The adequacy, amount and location of the proposed parking (including ADA parking) necessary to serve the proposed park uses shall be evaluated in detail at the SAP and PDP level. Off-street parking may be required to serve the various park users.
21. In the Central SAP, the estimated cost of parks not within a PDP that are required to serve a PDP shall be bonded or otherwise secured on a pro rata, dwelling unit basis.

- 22.** The location of the Pocket Park in the general vicinity of Barber Street and Grahams Ferry Road in SAP North shall be further defined in the SAP North application. The park shall be located in the general vicinity of the child play icon on Figure 5A - Recreational Experiences Plan and be at least 0.50 acres in area.

- 23.** The half-court basketball facility located in Regional Park 2 will be subject to review one year after construction is complete on the facility. With this review, the Parks Board will assess, with input from the applicable Homeowners Association, the suitability of this facility within the neighborhood, taking into consideration use patterns, noise, and other issues as identified.

CHAPTER 4 – UTILITIES

4.1 SANITARY SEWER

4.1.1 INTRODUCTION / PROPOSAL

On Figure 4-1 of the “City of Wilsonville Wastewater Collection System Master Plan” (hereafter referred to as the City Wastewater System Master Plan), the Villebois Village project is comprised of the Dammasch State Hospital site, the area designated as “UPA-2” and a small portion of the area designated as “SD-6”. The ultimate build-out of the Future Study Area will add some additional flows to the system. The site currently generates 158 gpm through its pump station, and an analysis of potential new uses within the site, determined that the maximum flow should not exceed the 158 gpm already included in the City Wastewater Master Plan for this site. The private pump station will be replaced with a public sanitary sewer lift station at the time of development. City Wastewater Master Plan Table 4.3, Note 4, collectively refers to UPA-2 as including the Dammasch site, as well as the Future Study Area facility. Hereafter, UPA-2 is used to designate only this proposal.

Figure 6 – Conceptual Composite Utilities Plan conceptually depicts the proposed sanitary system for Villebois and shows its points of connection into the City’s United Disposal Interceptor system. The larger portion of the project site will discharge sanitary wastewater to the United Disposal Interceptor (UDI) at or near its intersection with Barber Street through a proposed trunk sewer line identified in the City Wastewater System Master Plan as CIP-UD2. A smaller portion will discharge to the existing line in Evergreen Drive, and thence to the UDI. The remaining very small portion of the site is physically too low in elevation to reach either of the two other locations and must be discharged through existing facilities in the Park at Merryfield, and thence to the Wood School Interceptor.

While not specifically identified in the City Wastewater Collection System Master Plan, the City of Wilsonville has indicated that certain properties located along the west side of Grahams Ferry Road, south of Tooze Road and adjacent to UPA-2, are to be included in sanitary service planning for this project.

The City has indicated that flow from this area, subsequent to a future expansion of the Urban Growth Boundary, should be discharged through existing facilities in the Park at Merryfield. This project proposes that future service to the this area, as well as the Future Study Area, be through the Barber Main on the Villebois site, in exchange for the small portion of Villebois which must be discharged through Park at Merryfield.

As a part of the development of Villebois, sanitary facilities will be extended along Tooze Road to serve the UPA-3 area north of Tooze Road.

4.1.2 WASTEWATER COLLECTION SYSTEM MASTER PLAN COMPLIANCE ANALYSIS

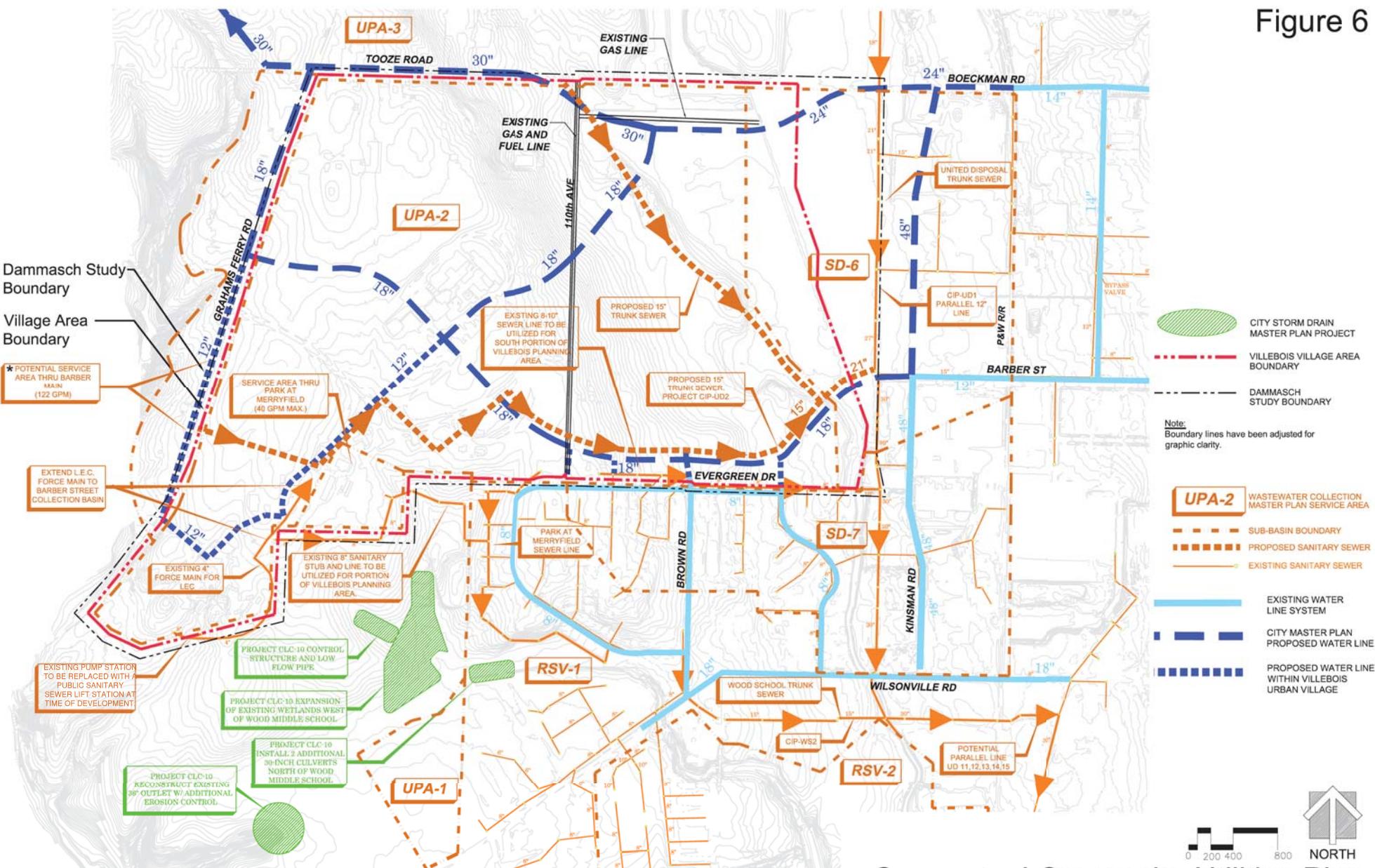
PURPOSE OF THE COMPLIANCE ANALYSIS

The City of Wilsonville updated its Wastewater Collection System Master Plan in January 2001. A Master Plan for the Villebois Village Project has been prepared which shows:

- The existing conveyance system in the immediate area.
- The proposed conveyance system.

This compliance analysis has been prepared to determine the state of compliance between the City Wastewater Collection System Master Plan and the Villebois Sanitary Sewer plan as proposed.

Figure 6



* City will not serve these areas until the UGB expands to cover these properties and they are annexed into the City.

RELEVANT DOCUMENTS

The referenced City Wastewater Collection System Master Plan is titled “City of Wilsonville Wastewater Collection System Master Plan – Ordinance No. 531, January 2001.” The Villebois Sanitary Sewer Master Plan is a portion of *Figure 6 – Conceptual Composite Utilities Plan*, which is a part of the submittal documents for the *Villebois Village Master Plan*.

METHODOLOGY

Relevant documents have been reviewed to determine compliance in terms of:

- (1) Wastewater flows
- (2) Points of Discharge
- (3) Flow Routing
- (4) Impacts
- (5) If the Villebois Sanitary Sewer Plan meets or exceeds the requirements of the City Wastewater System Master Plan.
- (6) What revisions to the City Wastewater Collection System Master Plan will be necessary to accommodate the Villebois Sanitary Sewer Plan.

COMPLIANCE ANALYSIS – METHODOLOGY ITEMS 1-4

Wastewater flows

When fully built-out, estimations shown in City Wastewater Collection System Master Plan Table 4-6 anticipate that UPA-2 will generate an average wastewater flow of 0.59 million gallons per day (mgd) and that UPA-3 will generate an average flow of 0.20 mgd. When combined, with peaking factor and Infiltration/Inflow (I/I) amounts added, the total flow from these areas is estimated to be 2.36 mgd, or about 1,641 gallons per minute (gpm).

Supplemental City Wastewater Collection System Master Plan information, provided by the City, indicates that 122 gpm is to be anticipated from future development of the area west of Grahams Ferry Road, that 99 gpm is currently discharged into Evergreen Road and 81 gpm from Park at Merryfield. In addition, the City has requested capacity in the Barber main be provided for the 158 gpm from the Future Study Area (formerly LEC). Therefore, the total flow anticipated in the Study Area is 2002 gpm.

Points of Discharge

The following points of discharge have been identified for the above flows:

1. A new line in the extension of Barber Road (CIP-UD2).
2. The existing system in Evergreen Drive.
3. The existing system in the Park at Merryfield.

Flow Routing

Supplemental City Wastewater Collection System Master Plan information, provided by the City, indicates anticipated flow routing as follows:

Barber Street:	1,294 gpm (from UPA-2 & 3)
Evergreen Road:	347 gpm (from UPA-2)
Park at Merryfield:	<u>361 gpm</u> (158 from Future Study Area + 122 from west 2,002 gpm of Grahams Ferry + 81 from Park at Merryfield)

Proposed routing:

Barber Street:	1,829 gpm (minimum from UPA-2 & 3 + 158 from Future Study Area + 122 from Grahams Ferry area)
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Evergreen Road: 114gpm (maximum = 99 existing flows + 15from UPA-2)
Park at Merryfield: 129 gpm (81 from Park at Merryfield + 48 from UPA-2)
2,072gpm

Impacts

UDI system:

All discharge points, described above, ultimately connect into the UDI, in which the City Wastewater Collection System Master Plan has identified deficiencies under build-out conditions at UD_5,9,11,12,14,15,18 and 28. Because build-out will occur over an unknown length of time, most of the required remedial improvements can be deferred, and completed on an as needed basis. Some of these improvements are already funded or under construction. The Finance Plan will reflect planned project phasing and address the timing and sequence of specific improvements.

Barber Street:

This system will connect directly to the UDI, and is addressed by the UDI discussion above.

Evergreen Road:

The existing system has a limiting capacity of 537 gpm, in one reach, which is downstream of the planned connection point at about Brown Road. The system has an existing flow of 99 gpm at this location; thus, the addition of the 15 gpm identified above will not exceed existing capacity.

Park at Merryfield:

The supplemental City Wastewater Collection System Master Plan information, previously described, identifies 3 downstream reaches where existing capacity would be exceeded by the 45 gpm additional discharge anticipated at total build-out of the tributary properties. Directing flows from the Future Study Area and the area west of Grahams Ferry Road to the Barber Street sewer extensions of the UDI will eliminate the anticipated surcharging of the system.

COMPLIANCE ANALYSIS CONCLUSION

The Villebois Village Sanitary Sewer Plan meets or exceeds the requirements of the City of Wilsonville Wastewater Collection System Master Plan.

4.1.3 WASTEWATER COLLECTION SYSTEM MASTER PLAN POLICY ANALYSIS

The City's stated goal is: *"To provide a functioning wastewater conveyance system at a reasonable cost."*

Policy 1: "The City of Wilsonville shall prevent sanitary sewer overflows (SSO) in accordance with Oregon Administrative Rules (OAR) 340-041-120 which prohibits SSOs during the winter season (November 1 through May 21) except during a storm event greater than the five-year, 24-hour duration storm."

Implementation Measure 1.1: "The City will undertake an assessment of its current wastewater collection system as an update to the Master Plan. This assessment will include the use of engineering tools, maintenance logs, and flow monitoring. The assessment will result in identifying capacity restrictions within the conveyance system. Improvements to alleviate the identified capacity restrictions will be recommended in order of priority. These improvements will become part of the Capital Improvements Program (CIP) in order to allocate funds for these projects or addressed through the City's Maintenance Program."

Response: No system capacity deficiency has been identified which would result in this occurrence. Participation in the City wide build-out capacity needs will be addressed in the Finance Plan.

Implementation Measure 1.2: “Sewers within natural or environmentally sensitive areas shall be inspected on a regular basis to determine pipe condition with a goal of minimizing inflow/infiltration and identifying structural defects that may lead to SSOs.”

Response: All sanitary sewers in the project will be public lines and included in the City’s inspection program.

City Policy 2: “The City of Wilsonville shall maximize the use of the existing wastewater collection system to minimize the need for improvements and extend the life of the existing system.”

Implementation Measure 2.1: “The City will allow limited surcharge to increase pipe capacities. These levels of surcharge will provide a sufficient factor of safety to prevent sewer backups in basements and surface overflows for the conditions stated in OAR 340-041-120.”

Response: All proposed systems will operate within acceptable performance standards as defined in the City Wastewater Collection System Master Plan.

Implementation Measure 2.2: “The City will divert wastewater flow to interceptors with excess capacity from interceptors with capacity limitations through the use of diversion manholes. This will reduce or eliminate the need to improve capacity in the capacity-limited interceptors.”

Response: No such opportunities have been identified.

Implementation Measure 2.3: “The City will use appropriate engineering tools to analyze the wastewater collection system, such as spreadsheet models, fully dynamic models, flow monitoring devices, maintenance logs, etc.”

Response: This proposal uses the modeling techniques described in the City Wastewater Collection System Master Plan.

Policy 3: “The City of Wilsonville shall provide adequate wastewater collection system capacity for future growth at build-out development conditions.”

Implementation Measure 3.1: “The City will use appropriate land use projections to determine future growth. These projections will be based on best available information provided by the Planning Department. In order to maximize the planning efforts for the wastewater conveyance system, the future growth scenario will be that which is expected at ultimate build-out.”

Response: This proposal assumes ultimate build-out conditions for the study area.

Implementation Measure 3.2: “The City will include Urban Planning Areas (UPA). Rather than use a completely separate and independent conveyance system, wastewater flows from the UPAs will flow through interceptors which currently convey flows from within the existing service area.”

Response: This proposal will serve UPA-2 and UPA-3 from existing interceptors within the existing service area.

Policy 4: “The City of Wilsonville shall use appropriate unit flow factors to account for actual and anticipated conditions in order to assure an adequately sized wastewater conveyance system.”

Implementation Measure 4.1: “The City will assess current system conditions according to current water usage in order to provide an accurate picture of current average dry weather flows. The current conditions unit flow factors will be determined by water usage according to

broad categories, i.e. residential, commercial, and industrial. These unit flow factors will be verified based on flow monitoring results.”

Response: This criteria has been met and documented in the City Wastewater Collection System Master Plan, June 2001.

Implementation Measure 4.2: “As part of the analysis under future build-out development, the City will increase the build-out unit flow factors. This will allow proper planning for future water-intensive industrial and commercial enterprises that may locate to Wilsonville when water usage restrictions are no longer in place.”

Response: No such uses are anticipated within the Villebois Village.

Implementation Measure 4.3: “The City will continue flow monitoring during wet and dry weather conditions to verify unit sanitary flow rates and infiltration/inflow (I/I) rates.”

Response: This requirement continues to be met by the City Public Works Department.

Policy 5: “The City of Wilsonville shall fund the capital improvements with monies collected in accordance with existing laws, rules, and regulations.”

Implementation Measure 5.1: “The City will fund projects related to current capacity limitations with system development charges (SDC) within the existing service area. New development is prohibited by State Law from funding projects to alleviate current system problems.”

Response: This project will participate in the SDC program, and overall funding will be addressed in the Finance Plan.

Implementation Measure 5.2: “The City will fund projects related to growth with SDCs, both within the current service area and in urban planning areas as development occurs in areas needing improvements.”

Response: This project will participate in the SDC program, and overall funding will be addressed in the Finance Plan.

Policy 6: “The City of Wilsonville shall coordinate conveyance system improvements with other CIP projects, such as roads, water, storm sewer, to save construction costs and minimize public impacts during construction.”

Response: All projects will be coordinated with City staff to insure coordination with other CIP projects to save construction cost and minimize public impacts during construction.

Policy 7: “The City of Wilsonville shall allow for wastewater collection system basin boundary revisions and out-of-basin flow transfers.”

“General. Wastewater flows developed in the master planning process is based on the land use contained within the sub-basin boundaries. Flow from each sub-basin is then conveyed by a specific interceptor sewer. There are five major interceptors in the City’s collection system. Similarly, there are five major basins with 24 sub-basins contributing wastewater flow to the interceptors. However, wastewater flow can be transferred between major basins by flow diversions or pump stations. These out-of-basin transfers impact the planning assumptions used to evaluate the capacity of the interceptors by essentially revising the sub-basin or basin boundaries. At a minimum, the following items need to be addressed when evaluating the viability of an out-of-basin transfer:

Implementation Measure 7.1: Flow Generation

- *Land Use in the affected areas.*
- *Unit flow factors for the various land use categories and I/I contributions.*

- *Peak Flow and peaking factor.*

Response: No out-of basin transfers have been proposed.

Implementation Measure 7.2: Hydraulic Evaluation

- *Identify the effect of peak flow on the existing collection system using the current condition spreadsheet model.*
- *Identify the percent capacity and HGL status of the affected pipes.*
- *Identify the effect of peak flow on the existing collection system with revised build-out flows using the build-out condition spreadsheet model.*
- *Identify the percent capacity and HGL status of the affected pipes.*

Response: No out-of basin transfers have been proposed.

Implementation Measure 7.3: Evaluate Recommended System Improvements

- *Determine if the recommended system improvements noted in the Master Plan are developed to convey the increased (transferred) flows.*
- *Determine if the flow removed from the original basin removes the need for any of the system improvements recommended in the 2001 Master Plan.*

Response: No out-of basin transfers have been proposed.

Implementation Measure 7.4: Identify Needed System Improvements

- *Based on the Hydraulic Evaluation and the impact on the Recommended System Improvements noted in this Master Plan, develop system improvement recommendations to convey the transferred flows. System improvement recommendations will also identify Master Plan improvements that can be removed as a result of the basin transfer.*

Response: No out-of basin transfers have been proposed.

Implementation Measure 7.5: Prepare Addendum to the Master Plan

- *Summarize the flow generation, hydraulic analysis and system improvement recommendations to convey the out-of-basin flow transfer.*
- *Digitally revise the sub-basin and basin boundaries.*
- *Update the Build-out Condition and Recommended System Improvement spreadsheet models.*

Response: No out-of basin transfers have been proposed.

Implementation Measure 7.6: Planning Commission Approval

- *The Addendum must be approved by the Planning Commission as an Amendment to the Master Plan and as a component of the Comprehensive Plan.*

Response: No out-of basin transfers have been proposed.

Implementation Measure 7.7: City Council Approval

- *Upon Planning Commission approval, City staff will take the addendum before the City Council for its approval.*

Response: No out-of basin transfers have been proposed.

4.1.4 VILLEBOIS VILLAGE MASTER PLAN IMPLEMENTATION

Goal

The Villebois Village shall include adequate sanitary sewer service.

Policy

1. The sanitary sewer system for Villebois Village shall meet the necessary requirements for the City of Wilsonville Wastewater Master Plan.

Implementation Measures

1. Implement the following list of policies and projects of the City of Wilsonville Wastewater Master Plan:
 - Policies: 1-7; and
 - Projects: CIP-UD2.
2. Incorporate the construction of CIP-UD2 into the Finance Plan.
3. Insure the 537 gpm capacity of the Evergreen Road sewer line is not exceeded with Specific Area Plan – South application.
4. Insure the 340 gpm capacity of the Park at Merryfield sewer line is not exceeded with Specific Area Plan – South application.
5. At the time of development of the Future Study Area, replace private pump station with Public Sanitary Sewer Lift Station build consistent with Technical Appendix I.

4.2 WATER

4.2.1 INTRODUCTION / PROPOSAL

The Villebois Village project is comprised of the Dammasch State Hospital site and that portion of Urban Planning Area 41 south of Tooze Road as shown on Figure 2-2 in the City of Wilsonville Water System Master Plan (hereafter referred to as the City Water System Master Plan).

Figure 6 – Conceptual Composite Utilities Plan conceptually depicts the proposed water system for Villebois and shows its points of connection to the City’s existing system. It consists of a network of 12-inch to 48-inch transmission mains, which will deliver water for domestic and fire protection purposes for the Villebois Village and adjacent areas.

4.2.2 WATER SYSTEM MASTER PLAN COMPLIANCE ANALYSIS

PURPOSE OF THE COMPLIANCE ANALYSIS

The City of Wilsonville updated its Water System Master Plan (City Water System Master Plan) on January 24, 2002. A Villebois Village Water Plan has been prepared which shows:

- The existing transmission water line system in the immediate area
- The proposed water transmission lines.

This Compliance analysis has been prepared to determine the state of compliance between the City Water System Master Plan and the Villebois Village Water Plan as proposed.

RELEVANT DOCUMENTS

The referenced City Water System Master Plan is titled “Water System Master Plan – Ordinance No. 531, adopted January 24, 2002” including Sections 1 through 10, and the Executive Summary. The Villebois Water Plan is a portion of *Figure 6 – Conceptual Composite Utilities Plan*, which is a part of the submittal documents for the Villebois Village Water Master Plan.

METHODOLOGY

Relevant documents have been reviewed to determine compliance in terms of:

- (1) Alignment
- (2) Capacity (main size)
- (3) Points of connection
- (4) Water quality
- (5) Fire flow adequacy
- (6) Materials of construction
- (7) Right-of-Way acquisition needs
- (8) Construction Methods, including traffic control, construction safety (including trench safety (OSHA)), noise control (time of construction), dust abatement, and general aesthetic considerations (tree removal and replacement, etc.)
- (9) Future maintenance requirements for the City
- (10) Water storage capacities, pumping capacities, system design (pressure zone arrangement).
- (11) Water production capacity
- (12) If the Villebois Village Water Plan meets or exceeds the requirements of the City Water System Master Plan.
- (13) What revisions to the City Water System Master Plan will be necessary to accommodate the Villebois Village Water Plan.

COMPLIANCE ANALYSIS - METHODOLOGY ITEMS 1 & 2 CAPITAL IMPROVEMENT PROJECTS

The City Water System Master Plan is a very broad brushed master plan dealing with city wide, and semi-regional water issues and supply options. This master plan does not deal with distribution water mains, except in very general terms. The master plan deals with transmission water mains in terms of Capital Improvement Programs (CIP) at five-year intervals from 2005 to 2020. These CIP projects are tabled and delineated on Table ES-4 and Figure ES-3 in the Executive Summary in the City's Water System Master Plan. These are duplicates of Table 9-1 and Figure 9-1 in section 9 of the City's Water System Master Plan, "Summary of the Capital Improvement Program." These plans and tables deal only with transmission line alignment and capacity in terms of pipe diameter. This comparison will deal only with those issues, on a CIP by CIP basis.

2005 CIP

Capital improvement projects in the City Water System Master Plan includes:

- 18-inch main in Evergreen from Kinsman Road to Brown Road
- 48-inch main from WTP in Kinsman Road from Barber Street to Boeckman Road / 95th Avenue.

The main within Kinsman Road has already been constructed as a 48-inch main from Wilsonville Road to Barber Street.

The Villebois proposed water plan includes:

- 18-inch main in Barber St. from Kinsman Road to Brown Road
- 48-inch main from WTP in Kinsman Road from Barber Street to Boeckman Road

The transmission mains shown above for Villebois will meet the requirements of the City Water System Master Plan for the 2005 Capital Improvement Program based on alignment and pipe size. Water demand has been addressed by City staff as being adequate.

2010 CIP

Capital improvement projects in the City Water System Master Plan includes:

- 24-inch main in Boeckman Road from Kinsman Road to 110th Avenue
- 18-inch main in 110th Avenue from Boeckman Road to Evergreen Avenue
- 18-inch main from 110th Avenue to Grahams Ferry Road
- 18-inch main in Grahams Ferry Road

The Villebois proposed water plan:

- 24-inch main in Boeckman Road from Kinsman Avenue to Villebois Drive
- 18-inch main in Villebois Drive from Boeckman Road to Barber Street
- 18-inch main in Barber Street from Brown Road to Grahams Ferry Road
- 18-inch main in Grahams Ferry Road from Barber Street to Tooze Road
- 12-inch main in extension of Villebois Drive from Barber Street to the Future Study Area
- 12-inch main in Grahams Ferry from the Future Study Area to Barber Street
- 12-inch main connections from Barber Street to Evergreen Road

The transmission mains shown above for Villebois will meet the requirements of the City Water System Master Plan for the 2010 Capital Improvement Program based on alignment and pipe size. Water demand has been addressed by City staff as being adequate.

2015 CIP

Capital improvement projects in the City Water System Master Plan includes:

- 30-inch main in Tooze Road from 110th Avenue to Grahams Ferry Road

The Villebois proposed water plan:

- 30-inch main in Tooze Road from Villebois Drive to Grahams Ferry Road

The transmission mains shown above for Villebois will meet the requirements of the City Water System Master Plan for the 2015 Capital Improvement Program based on alignment and pipe size. Water demand has been addressed by City staff as being adequate.

2020 CIP

There are no mains in the 2020 Capital Improvement Program that are within project boundaries. Therefore, nothing is required of this project to bring it into compliance with the City Water System Master Plan for the 2020 Capital Improvement Program.

SUMMARY - CAPITAL IMPROVEMENT PROJECTS

The proposed Water Plan for Villebois Village will meet or exceed all requirements of the City Water System Master Plan, in terms of water transmission main size and location, for all four Capital Improvement Project years listed in the City Water System Master Plan. This completes our analysis of points 1 and 2 under “Methodology” above.

COMPLIANCE ANALYSIS - METHODOLOGY ITEMS 3 THROUGH 10

Concerning “Methodology” Item 3, adequate water supply points of connection are available to accommodate our project based on system modeling done with the City Water System Master Plan. Connection points proposed by our project meet the requirements of the City Water System Master Plan based on location and pipe size.

For the current elementary school site (City property) in SAP-North (proposed to be converted into residential) and for the proposed elementary school site in SAP-East, “Methodology” Items 6, 8, and 9, “materials of construction, construction methods, and future maintenance requirements for the City,” these items are not addressed directly by the City Water System Master Plan. However, these items will be addressed and accommodated by the construction plans and specifications, which will be prepared to the satisfaction of the City and in accordance with the City’s Public Work Standards. Therefore, by virtue of the City’s plan check and permitting procedures being in compliance with the City Water System Master Plan, the project will meet or exceed all requirements of the City Water System Master Plan.

Concerning “Methodology” Items 4, 5, 7, and 10, “Water quality, Fire flow adequacy, right-of-way acquisition, and Water storage capacities, pumping capacities, system design (pressure zone arrangement),” the City of Wilsonville Water System Master Plan anticipated land uses for the project area which match the demand resulting from the proposed project. Therefore; water quality, fire flow adequacy, right-of-way acquisition, water storage capacities, pumping capacities, system design (pressure zone arrangement), have not been affected. Consequently, the project will meet or exceed all requirements of the City Water System Master Plan.

The current elementary school site in SAP-North and for the proposed elementary school site in SAP-East, concerning “Methodology” Item 11, there will be no change in overall City production capacity requirements. The planned expansion of the Water Treatment Plant is anticipated in 2012, and the City will analyze that during evaluation of the infrastructure required with each phase of Villebois development.

COMPLIANCE ANALYSIS CONCLUSION

The *Villebois Village Master Plan* meets or exceeds the requirements of the City of Wilsonville Water System Master Plan.

4.2.3 WATER SYSTEM MASTER PLAN POLICY ANALYSIS

Implementation measures are specified in the City of Wilsonville Water System Master Plan on pages ES-11 through ES-14 in the Executive Summary. Pages 10-2 through 10-4 in Section 10 - "Conclusions and Recommendations" are exact duplicates of ES-11 through ES-14, with one very minor inconsequential exception. This report will address implementation measures on a policy-by-policy basis.

Policy 1: "The City of Wilsonville shall continue a comprehensive water conservation program to make effective use of the water infrastructure, source water supply and treatment processes."

Response: The City Water System Master Plan, which incorporates existing City codes, establishes criteria for water conservation, water infrastructure and source supply that were used as the basis for those provisions in this project.

Policy 2: "The City of Wilsonville shall make effective use of the existing water system facilities to reduce the need for improvements and extend the life of the existing system."

Response: The City Water System Master Plan, specifically Figure ES-3 and Figure 9-1, titled "Capital Improvement Program Pipelines" specify a pipe layout of proposed transmission water mains, and existing transmission and distribution water mains, which comprise an integrated plan of existing and proposed water pipeline systems. The *Villebois Village Master Plan* for this project complies with the requirements of the City Water System Master Plan. Therefore, this project meets the requirements of Policy 2.

Policy 3: "The City of Wilsonville shall provide adequate treated water supply and distribution system capacity for future growth to build-out development conditions."

Response: The City of Wilsonville Water System Master Plan includes proposed transmission water mains transmitting treated water, connected to existing water mains outside this project, through this project, and extending out the far side of our project to serve the farthest reaches of the service area, with provisions to serve areas outside the present service area that may possibly be annexed into the service area in the future. The City's Water System Master Plan has been used as the basis of the project Water Plan, and, therefore, this project meets the requirements of Policy 3.

Policy 4: "The City of Wilsonville shall maintain an accurate user demand profile to account for actual and anticipated demand conditions in order to assure an adequately sized water system."

Response: The City Water System Master Plan has generated appropriate demand patterns based on historical data, which have been used as the basis for the projected demands of this project.

Policy 5: "The City of Wilsonville shall fund the capital improvements with monies collected in accordance with existing laws, rules, and regulations."

Response: This project will participate in the SDC program, and overall funding will be addressed in the Finance Plan.

Policy 6, “The City of Wilsonville shall coordinate distribution system improvements with other CIP projects, such as roads, wastewater, storm sewer, to save construction costs and minimize public impacts during construction.”

Response: All projects will be coordinated with City staff to insure coordination with other CIP projects to save construction cost and minimize public impacts during construction.

Policy 7, “The City shall have a master plan that can be adjusted for changes in water requirements.”

Response: The Water System Master Plan proposed for Villebois Village has not proposed changes in planning areas, service areas or main sizes.

4.2.4 VILLEBOIS VILLAGE MASTER PLAN IMPLEMENTATION

Goal

The Villebois Village shall include adequate water service.

Policy

The water system for Villebois Village shall meet the necessary requirements of the City of Wilsonville Water System Master Plan.

Implementation Measures

1. Implement the following list of Water System Master Plan policies and projects with development of Villebois Village:
 - Policies: 1-7
 - Projects:
 - 1) 18-inch main in Barber Street from Kinsman Road to Brown Road
 - 2) 48-inch main in Kinsman Road from Barber Street to Boeckman Road
 - 3) 24-inch main in Boeckman Road from Kinsman Road to Villebois Drive
 - 4) 18-inch main in Villebois Drive from Boeckman Road to Barber Street
 - 5) 18-inch main in Barber Street from Brown Road to Grahams Ferry Road
 - 6) 18-inch main in Grahams Ferry Road from Barber Street to Tooze Road.
 - 7) 12-inch main in Grahams Ferry Road from the Future Study Area to Barber Street
 - 8) 30-inch main in Tooze Road from Villebois Drive to Grahams Ferry Road
 - 9) 12-inch main in extension of Villebois Drive from Barber Street to the Future Study Area
 - 10) 12-inch main connections from Barber Street to Evergreen Road
2. Incorporate the construction of the above referenced projects into the Finance Plan.

4.3 STORM DRAINAGE

4.3.1 INTRODUCTION / PROPOSAL

The *Villebois Village Master Plan* is designed to minimize impacts from this development on the three watersheds into which the site historically drains. The following four components, incorporated into the design of Villebois, are derived from and are in conformance with the City of Wilsonville Stormwater Master Plan:

- 1) Onsite water quality and onsite stormwater detention facilities to provide treatment and maintain predevelopment runoff levels up to the 25 year storm for the Arrowhead Creek and Mill Creek basins;
- 2) Onsite water quality facilities to provide treatment for stormwater for the Coffee Lake Creek basin;
- 3) Stormwater release without detention for the Coffee Lake Creek basin, and
- 4) Construction of Project CLC-10 within the Graham Oaks Natural Area.

The onsite water quality and onsite detention facilities required will perform at or above all performance standards of the City of Wilsonville Stormwater Master Plan, and will not require offsite facilities to meet this standard requirement. Per the MT2 application to update mapping for the upper portion of Coffee Lake Creek, Seely Ditch and Basalt Creek prepared by HDR for the City on October 25, 2005, the memorandum from HDR dated November 13, 2005, and the Technical Memorandum from inter-fluve, inc., dated November 3, 2005, onsite detention facilities for Villebois are not required for the Coffee Lake Creek basin. These documents conclude that releasing stormwater from Villebois without detention will have no significant impact on water levels in Coffee Lake Creek or downstream facilities and may actually have a negative impact on the wetlands due to lower magnitude, longer duration flows.

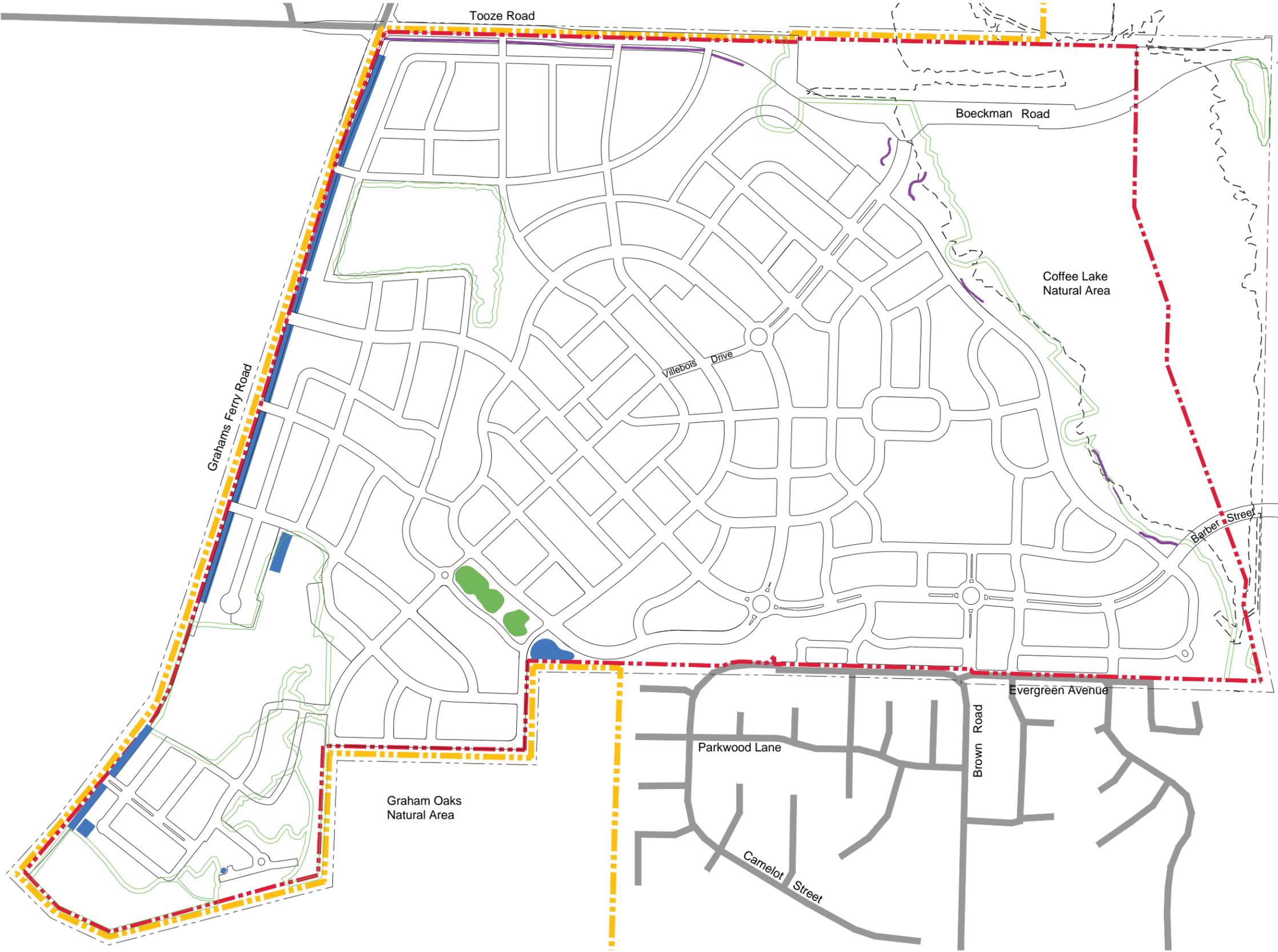
Implementation Measure 9.5.2.2 from the City of Wilsonville Stormwater Master Plan states that “exemptions to the on-site detention requirements could be considered for situations in which properties discharge directly to the Willamette River, properties discharge directly to open water bodies that have no capacity limitations, areas where detention in downstream reaches could increase peak stormwater flow rates, and other areas or unique circumstances as identified by the City Engineer.” The reports specified above support removal of detention in Coffee Lake Creek under the second exemption listed in this implementation measure, “properties which discharge directly to open water bodies that have no capacity limitations”.

Project CLC-10 was included in the City of Wilsonville Stormwater Master Plan, and is included in the design of Villebois, solely to reduce flows currently being discharged by the existing 36-inch outfall pipe down to periodic overflows only occurring in large storm events. This is a partial correction of the basin area diversion caused by the Dammasch State Hospital construction many years ago.

A third component incorporated into the design seeks to further reduce impacts from this development for smaller storms not addressed in the City of Wilsonville Stormwater Master Plan. Rainfall data indicates that 90% of all storms in this area have a 24-hour rainfall total of less than 0.50 inches. These storms are easily conveyed by standard storm drainage facilities designed for much larger storm events, but the incremental increase in runoff is detrimental to natural drainage courses. Evidence suggests that the increased runoff during these frequent small rains has a detrimental effect on streambed health and aquatic habitat. A Rainwater Management Program has been incorporated into the project to minimize this impact, and the facilities and programs will be constructed onsite.

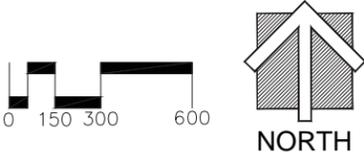
Villebois Village is that area identified on Figure 2-1 in the City of Wilsonville Stormwater Master Plan as the Dammasch Basin and the area directly east including Seely Ditch (hereafter referred to as Coffee Lake Creek). *Figure 6 – Conceptual Composite Utilities Plan* shows the improvements to the headwaters of Arrowhead Creek and the outfall reconstruction and partial flow redirection for the drainage from the former Dammasch State Hospital. This work is identified as Capital Improvement Project CLC-10 and is the only improvement directly related to Villebois Village addressed in the City Stormwater Master Plan. *Figure 6A – Onsite Stormwater Facilities* shows the location of the onsite water quality and stormwater facilities.

Figure 6A



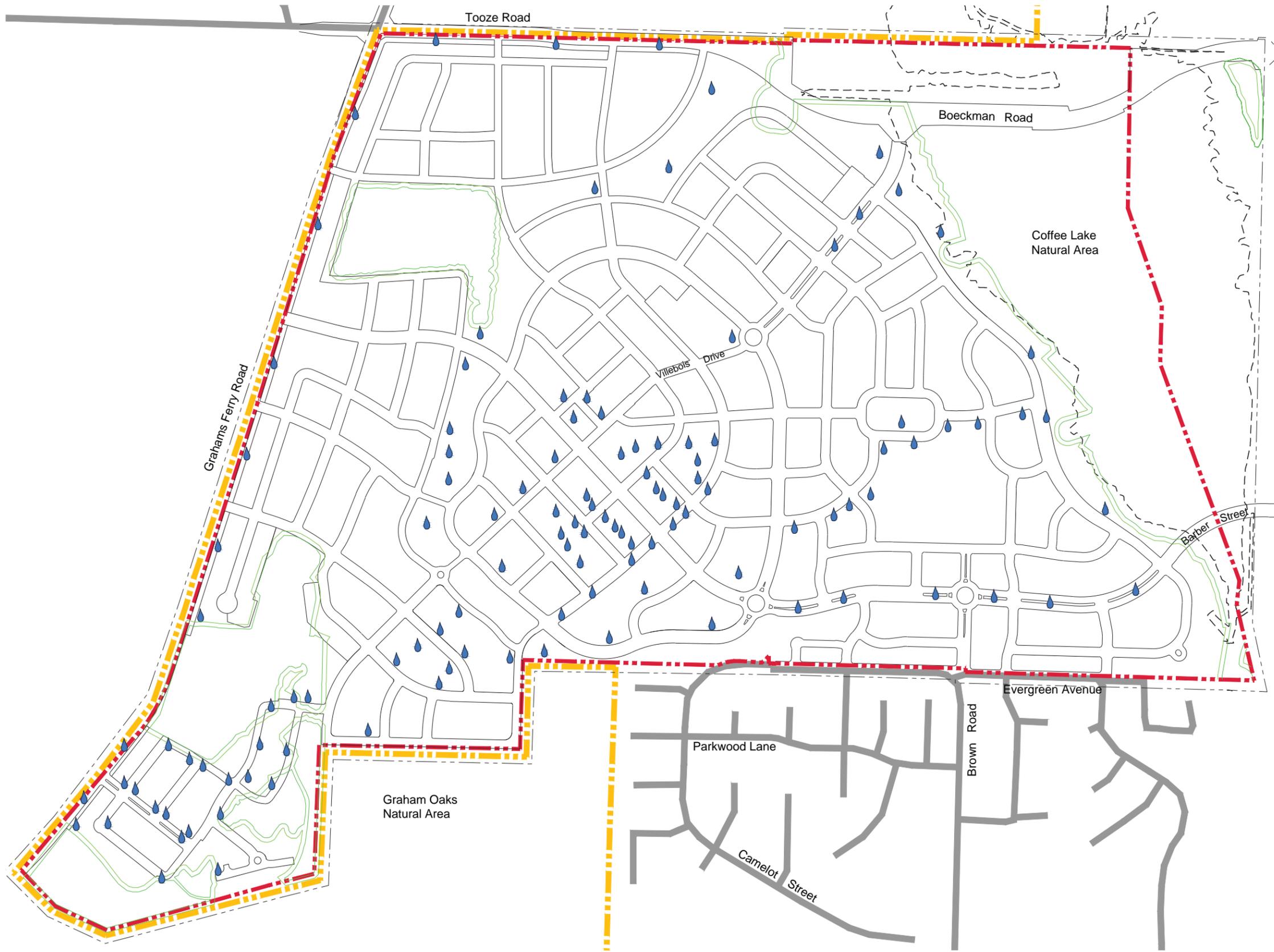
- Onsite Water Quality
- Onsite Stormwater/ Recreation Facilities
- Onsite Stormwater/ Water Quality Facilities/ Rainwater
- Urban Growth Boundary
- Village Area Boundary
- Dammasch Study Boundary
- SROZ and Buffer Boundary
- Tentative 100 Year Flood Line (pending approval of MT2 application to update mapping for the upper portion of Coffee Lake Creek, Seely Ditch, and Basalt Creek prepared by HDR on October 25, 2005)

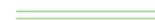
NOTES:
 The Villbois Village Master Plan shall comply with the City Of Wilsonville SROZ regulations. encroachments within the SROZ and flood plain are shown for illustrative purposes only, and will be reviewed for compliance or exemptions as more detailed information is provided that will affect the SROZ areas. Adjustments in plan, street alignments, and intersections as well as rainwater facilities and pathways will be made to comply with SROZ regulations.

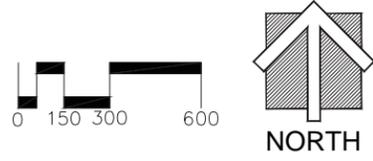


Onsite Stormwater Facilities
 JULY 26, 2013

Figure 6B



-  Opportunities for Rainwater Management Components
-  Urban Growth Boundary
-  Village Area Boundary
-  Dammasch Study Boundary
-  SROZ and Buffer Boundary
-  Tentative 100 Year Flood Line (pending approval of MT2 application to update mapping for the upper portion of Coffee Lake Creek, Seely Ditch, and Basalt Creek prepared by HDR on October 25, 2005)



NOTES:
 The Villbois Village Master Plan shall comply with the City Of Wilsonville SROZ regulations. encroachments within the SROZ and flood plain are shown for illustrative purposes only, and will be reviewed for compliance or exemptions as more detailed information is provided that will affect the SROZ areas. Adjustments in plan, street alignments, and intersections as well as rainwater facilities and pathways will be made to comply with SROZ regulations.

Onsite Rainwater Management
 JULY 26, 2013

Figure 6B – Onsite Rainwater Management shows the area included in the Villebois Village Rainwater Management Program.

4.3.2 STORMWATER MASTER PLAN COMPLIANCE ANALYSIS

The City of Wilsonville Stormwater Master Plan analyzes the City’s existing watersheds and storm system to identify Capital Improvement Projects (CIP’s) and prescribe stormwater management policies. The *Villebois Village Master Plan* will show compliance with site related CIP’s and recommended policies.

RELEVANT DOCUMENTS

The *Villebois Village Master Plan* references the “City of Wilsonville Stormwater Master Plan, June 2001”, including the Executive Summary and Sections 2-10. Section 1 addresses authorization and scope for the preparation of the City Stormwater Master Plan and is not related to the *Villebois Village Master Plan*. *Figure 6 – Conceptual Composite Utilities Plan*, is a part of the submittal documents for the *Villebois Village Master Plan* and depicts the location of CLC-10 in relation to the Villebois site. *Figure 6A – Onsite Stormwater Facilities* shows the location of the onsite water quality and stormwater facilities. *Figure 6B – Onsite Rainwater Management* shows the area included in the Villebois Village Rainwater Management Program.

METHODOLOGY

Relevant documents have been reviewed to determine compliance with relation to:

- (1) Study Area;
- (2) Study Methods;
- (3) Existing Stormwater System;
- (4) Basin Analysis;
- (5) Improvement Options;
- (6) Recommended System Improvements;
- (7) Capital Improvement Program;
- (8) If the Villebois Village Master Plan meets or exceeds the requirements of the City Stormwater Master Plan; and
- (9) What revisions to the City Stormwater Master Plan are necessary to bring it into compliance with the Villebois Village Master Plan.

COMPLIANCE ANALYSIS – METHODOLOGY ITEM 1 THROUGH 5

Concerning “Methodology” Item 1, the study area for the City Stormwater Master Plan was determined using existing topography and boundaries. The Villebois site encompasses an area within the City limits and a designated Urban Growth Area for the City and was therefore included in the study area for the City’s Stormwater Master Plan. This study identified drainage basins, wetlands and riparian corridors, geological hazards, soils and land uses. The existing natural conditions of the Villebois site remain the same today as at the time of the study. Land use designations for the site have evolved to the uses proposed with the *Villebois Village Master Plan*, but maintain the essential mix discussed in the City’s Stormwater Master Plan. Therefore, the *Villebois Village Master Plan* is in compliance with this Methodology.

Concerning “Methodology” Item 2, the methods for hydrologic analysis, runoff modeling, conveyance system modeling and water quality analysis used by the City in developing the City Stormwater Master Plan remain standard in the industry. Thus, where the *Villebois Village Master Plan* draws conclusions based on these methods those conclusions are valid and inherently in compliance with the City’s Stormwater Master Plan.

Concerning “Methodology” Item 3, the stormwater system around the Villebois site has not seen an appreciable change from the condition in which it was analyzed at the time the City Stormwater Master Plan was prepared. The drainage conveyance facilities, water quality facilities and problem areas affecting the Villebois site as presented in the City Master Plan will be complied with in the *Villebois Village Master Plan*.

Concerning “Methodology” Item 4, the proposed Villebois land uses are comparable to those used in the hydraulic analysis of the Coffee Lake Creek and Arrowhead Creek basins in the City’s Stormwater Master Plan. Therefore, the impacts of Villebois Village on the hydraulics analysis in these basins are consistent with those used in the calculations. The City of Wilsonville has commissioned a detailed study of Coffee Lake Creek as part of the Boeckman Road extension project. This study is referenced as the MT2 application to update mapping for the upper portion of Coffee Lake Creek, Seely Ditch and Basalt Creek prepared by HDR on October 25, 2004 and will be used in the design of stormwater facilities required as part of that road extension and with the detention and water quality design for areas draining into Coffee Lake Creek. A study of Arrowhead Creek capacity will be utilized in the evaluation of detention and water quality facilities for the Arrowhead and Mill Creek basins. The Arrowhead Creek capacity study will also be used in the evaluation of potential changes to CLC-10, which are further discussed in the Compliance Analysis for Methodology Items 5-7.

SUMMARY – METHODOLOGY ITEMS 1 THROUGH 4

The Villebois Village Stormwater Master Plan will meet or exceed the standards associated with this portion of the City Stormwater Master Plan.

COMPLIANCE ANALYSIS – METHODOLOGY ITEMS 5 THROUGH 7

The City Stormwater Master Plan evaluated numerous improvement options to alleviate problems identified with the analysis of Sections 1-4. These improvement options were broken down into two categories: Conveyance Improvement Options and Water Quality Improvement Options. There are no Water Quality Improvement Options with relevance to the Villebois site included in the City Master Plan. The Dammasch Basin/Arrowhead Creek Improvement Option is further addressed in Chapter 7, “Recommended System Improvements” as CLC-10.

Capital Improvement Project CLC-10 as discussed in the City Stormwater Master Plan consists of four elements:

- 1) Installation of a diversion structure on the 36” Dammasch outfall;
- 2) Expansion of the wetlands on the Metro Wilsonville Tract;
- 3) Installation of two-30” culverts at the bike path crossing; and
- 4) Repairs to Mill Creek Outfall.

Many decades ago, construction of the Dammasch State Hospital created a drainage basin transfer from Arrowhead Creek and Coffee Lake Creek to Mill Creek. CLC-10 partially corrects this transfer with the installation of a diversion structure on the existing 36” storm drain. This structure would return a portion of the runoff to its historic Arrowhead Creek drainage basin. This diversion would have the benefit of recharging the wetlands and reducing erosion in the Mill Creek basin.

At a minimum, the *Villebois Village Master Plan* will comply with CLC-10 as presented in the City Stormwater Master Plan. However, there are options that have the potential to improve upon the intent of CLC-10. The *Villebois Village Master Plan* proposes the following options to modify CLC-10 in Arrowhead Creek for further evaluation and consideration:

Option A would correct the basin transfer in full by redirecting the entire historic flow to Arrowhead Creek and Coffee Lake Creek drainage basins.

Option B, a blend of CLC-10 and Option A, seeks to restore as much of the historic flows as possible. Potential elements of this option include detention on the Graham Oaks Natural Area, additional detention within Villebois, and continued discharge at reduced rates to Mill Creek.

Prior to the consideration of Option A or B, supplemental analysis would be performed to further study impacts of restoring historic flows above those anticipated by CLC-10. This analysis would include areas identified in the initial study, including the pedestrian path crossing at Wood Middle School, the Wilsonville Road crossing and the Jobsey Lane crossing of Arrowhead Creek. Improvement projects and other implications resulting from this study will be coordinated with the City of Wilsonville and affected property owners. Neither option would move required onsite water quality and stormwater detention facilities onto offsite property, unless agreed to by the City, property owners and other applicable parties. Table 2 lists components of the options and Table 3 lists advantages and disadvantages of the options.

Table 2: Components of Basin Transfer			
	CLC-10 (minimum standard)	CLC-10 modified by Option A	CLC-10 modified by Option B
Location	Graham Oaks Natural Area	Graham Oaks Natural Area	Graham Oaks Natural Area,
Receiving Drainage Basin	Arrowhead Creek and Mill Creek	Arrowhead Creek and Coffee Lake Creek	Arrowhead Creek, Coffee Lake Creek and Mill Creek
Stormwater Improvements	Diversion structure for low flows to Arrowhead Creek; install two 30" culverts	Diversion structure not necessary due to redirection of full historic flows; install appropriate sized culverts downstream	Analyze need for diversion structure; detention basins on Graham Oaks Natural Area and/or Villebois; install appropriate sized culverts downstream
Expanded Wetlands	Expand wetlands with CLC-10 restoration project	Expand wetlands per CLC-10 restoration project	Expand wetlands per CLC-10 restoration project
Mill Creek Outfall	Restore surrounding area but do not remove outfall	Remove outfall and restore surrounding area	Analyze ability to remove outfall and restore surrounding area

Table 3: Analysis of Basin Transfer

	Advantages	Disadvantages
CLC-10 (minimum standard)	<ul style="list-style-type: none"> <input type="checkbox"/> Project identified and analyzed in City’s Stormwater Master Plan <input type="checkbox"/> Removes low flows from Mill Creek outfall, and includes repairs of outfall and minimizing erosion in Mill Creek <input type="checkbox"/> Project appears to be consistent with the wetland restoration goals for the proposed Graham Oaks Natural Area <input type="checkbox"/> Minimizes impacts to downstream properties on Arrowhead Creek 	<ul style="list-style-type: none"> <input type="checkbox"/> Out-of-basin transfer is not fully corrected with this project <input type="checkbox"/> Maintains peak flows to Mill Creek, which will require modifications of outfall to minimize future added degradation <input type="checkbox"/> No existing stormwater easement outside existing 30-foot easement
CLC-10 modified by Option A	<ul style="list-style-type: none"> <input type="checkbox"/> Out-of-basin transfer corrected with this project <input type="checkbox"/> Removes flows (low and peak) and outfall structure from Mill Creek, which will allow for full restoration of creek and outfall area <input type="checkbox"/> Expansion of wetlands may be consistent with the wetland restoration goals for the Graham Oaks Natural Area 	<ul style="list-style-type: none"> <input type="checkbox"/> Project not identified or analyzed in City’s Stormwater Master Plan <input type="checkbox"/> Potentially significant impacts to downstream properties on Arrowhead Creek will require downstream improvements to mitigate <input type="checkbox"/> Potential impacts (i.e. increased water level) to existing wetlands from returning full historic flows <input type="checkbox"/> No existing stormwater easement outside existing 30-foot easement
CLC-10 modified by Option B	<ul style="list-style-type: none"> <input type="checkbox"/> Removes low flows and some peak flows from Mill Creek outfall, and includes repairs of outfall minimizing erosion in Mill Creek <input type="checkbox"/> Reduces flows to Mill Creek outfall <input type="checkbox"/> Expansion of wetlands may be consistent with the wetland restoration goals for the Graham Oaks Natural Area 	<ul style="list-style-type: none"> <input type="checkbox"/> Project not identified or analyzed in City’s Stormwater Master Plan <input type="checkbox"/> Out-of-basin transfer is not fully corrected with this project <input type="checkbox"/> Potential impacts to downstream properties on Arrowhead Creek will require downstream improvements to mitigate <input type="checkbox"/> Potential impacts (i.e. increased water level) to existing wetlands from locating detention basin (discharge) on Graham Oaks Natural Area <input type="checkbox"/> No existing stormwater easement outside existing 30-foot easement

The *Villebois Village Master Plan* proposes to further analyze these options and determine their potential. The final determination will be coordinated with the City of Wilsonville/Villebois and Metro, will be made in accordance with the terms specified in the memorandum of understanding between the City/Villebois and Metro (Metro contract #926225).

Concerning “Methodology” Item 7, the City Stormwater Master Plan rates the items recommended in Section 6 and estimates costs for these improvements. Project CLC-10 is established as a low priority and “Dammach Stormwater Improvements” are not included in the City’s funding program. The *Villebois Village Master Plan* will comply with the City Stormwater Master Plan by implementing CLC-10 or one of the options outlined above.

SUMMARY – METHODOLOGY ITEMS 5 THROUGH 7

At a minimum, the *Villebois Village Master Plan* will implement CIP project CLC-10 as identified in the City Stormwater Master Plan, thereby complying with the City Stormwater Master Plan. A more complete restoration of historic drainage basins might be achieved through one of the proposed options. These options will be further evaluated in cooperation with the City and property owners and if selected, will be incorporated into the City Stormwater Master Plan during the City’s next scheduled update.

COMPLIANCE ANALYSIS CONCLUSION

The *Villebois Village Master Plan* meets or exceeds the requirements of the City of Wilsonville Stormwater Master Plan.

4.3.3 STORMWATER MASTER PLAN POLICY ANALYSIS

Implementation measures for the City's Stormwater Master Plan are specified in Section 9 of the City's Master Plan. This report addresses these policies on a policy-by-policy basis.

9.1 Current Regional Standards

9.1.1 Metro Title 3: On June 18, 1998, the Metro Regional Council adopted the Stream and Floodplain Protection Plan (Ordinance 98-730). This plan is also known as Title 3 of Metro's Urban Growth Management Functional Plan (UGMFP). Title 3 addresses and sets standards for regional water quality in the Metro area. These standards include protection of floodplains, buffering of rivers, streams and wetlands with vegetation, erosion control and hazardous material storage. The City of Wilsonville has prepared a Natural Resources Plan which provides specific requirements for wetlands and riparian areas, meeting requirements of Statewide Planning Goal 5, Title 3 of the UGMFP, and the Endangered Species Act. Many of these are currently contained in Wilsonville's Public Works Standards.

Response: The *Villebois Village Master Plan* will follow all setback and buffer requirements, erosion control, vegetation of streams and wetlands and hazardous material storage standards as defined by the City's Significant Resource Overlay Zone (SROZ) and Public Works Standards in compliance with Title 3 and the Goal 5 program.

9.1.2 Federal Clean Water Act: The National Pollutant Discharge Elimination System (NPDES) was established in 1972 by the Clean Water Act. This program controls "point source" pollution and requires a permit from the Oregon Department of Environmental Quality (DEQ). The Clean Water Act was re-authorized in 1987 to address "nonpoint source" pollution, which subsequently required municipalities to obtain an NPDES permit. The City of Wilsonville currently has an active permit with several other jurisdictions issued in December 1995 and is awaiting approval on their renewal application submitted in 2000.

Response: The *Villebois Village Master Plan* will follow City guidelines and standards developed for compliance with the Clean Water Act and the NPDES permit and, therefore, is in compliance with this policy.

9.2 General Stormwater Management Policies

Policy 9.2.1: "The City of Wilsonville shall manage stormwater on or as close as is practical to the development site in order to mitigate water quantity and water quality discharge impacts near the source."

Response: Proposed stormwater facilities for water quality and detention for Arrowhead Creek and Mill Creek basins to achieve pre-developed levels will be within the *Villebois* project boundaries, except for Project CLC-10. The City of Wilsonville anticipated this project, therefore, the *Villebois Village Master Plan* complies with this policy.

Policy 9.2.2: "The City of Wilsonville shall assure that stormwater management has, to the maximum extent practicable, no negative impact on nearby streams, wetlands, groundwater or other water bodies."

Response: Stormwater management for this project will follow the City guidelines and standards set by the City of Wilsonville. In addition, Villebois will be undertaking a new development standard referred to as “Rainwater Management.” The Rainwater Management Program will prescribe guidelines and goals for reducing the increase in runoff from the 90th percentile rain event, 0.50” in a 24-hr period. By addressing the 90th percentile storm event, Villebois Village will succeed in minimizing the development “footprint” on the hydrological cycle. The Villebois Rainwater Management Program will be defined and implemented as part of the Specific Area Plan. With these goals, the *Villebois Village Master Plan* meets and exceeds the requirements of this policy.

Policy 9.2.3: “The City of Wilsonville shall preserve existing open surface water facilities and encourage the expansion of surface facilities where practical.”

Response: Surface water facilities, defined as stormwater conveyance facilities, onsite will be maintained and protected to the maximum extent practical. The only identified open surface water facility on Villebois Village is Coffee Lake Creek, which will remain a wetland.

Policy 9.2.4: “The City of Wilsonville shall require that the maintenance of water quality control facilities be the responsibility of the private or public owner.”

Response: Water quality control facilities will be maintained by private owners, a homeowners association, or as arranged with the Finance Plan. The *Villebois Village Master Plan* is in compliance with this measure.

Policy 9.2.5: “The City of Wilsonville shall assure that all stormwater facilities receive adequate maintenance.”

Response: The City of Wilsonville Stormwater Master Plan identifies several maintenance standards and performance measures for ensuring adequate maintenance of stormwater facilities. Since the stormwater facilities in Villebois Village will either be publicly maintained or held to public standards if a private system, the *Villebois Village Master Plan* is in compliance with this policy.

Fish Passage Culverts:

Policy 9.2.6: “The City of Wilsonville shall require the use of culvert designs that meet Oregon Department of Fish and Wildlife Guidelines and Criteria for Stream-Road Crossings.”

Response: All culvert designs shall be reviewed by the City Engineer to determine their overall effectiveness in meeting the fish passage requirements specified by the State or Federal agencies.

Development Review:

Policy 9.2.7: “Based on the need to demonstrate protection of habitat and water quality and quantity for endangered species listed as threatened under section 4(d) of the ESA, design and construction of stormwater facilities shall be reviewed by the Planning Division through a Class II administrative review process, as may be amended. However, such administrative process shall be expedited when time is of the essence in planning and constructing necessary facilities. Review of a facility may also be accomplished as part of an application for development review by the Development Review Board (DRB) or City Council.”

Response: Review of proposed stormwater quality facilities in Villebois Village will follow the planning guidelines developed in this policy, thereby complying with this policy.

Erosion Control Policies:

Erosion control is important in terms of both water quantity and quality. The City's Erosion Control Ordinance (Ordinance No. 482) was adopted in April 1997. Its requirements are based on the February 1994 Erosion Prevention and Sediment Control Plans – Technical Guidance Handbook, prepared by the City of Portland and the Unified Sewerage Agency.

Policy 9.2.8: “The City of Wilsonville shall take steps to minimize erosion resulting from land use and development activities.”

Response: Construction on Villebois Village will conform to the City of Wilsonville Public Works Standards for erosion control and applicable DEQ 1200C permit, meeting the requirements of this policy.

9.3 Stormwater Quality Policies:

Policy 9.3.1: “The City of Wilsonville shall, as much as is practical, assure that the quality of stormwater leaving the site after development will be equal to or better than the quality of stormwater leaving the site before development.”

Design Standards:

Wilsonville's current standards for stormwater facility construction are contained in the City's Public Works Standards. These standards provide construction details and design criteria for water quality facilities.

Response: Stormwater facilities in the Villebois Village are being given extra attention in the design process to create a facility that emulates a natural system both in function and appearance. The design of these facilities will meet or exceed the design criteria contained in the City's Public Works Standards and these facilities will comply with monitoring and enforcement policies developed by the City. Therefore, the *Villebois Village Master Plan* meets the requirements of this policy.

Onsite Water Quality Facilities:

Studies have shown that development increases the concentration in runoff of suspended sediment, oil and grease, and nutrients. Because existing development includes few or no water quality facilities, proposed regional facilities are targeted downstream of existing development where suitable to protect existing wetland and riparian areas.

Policy 9.3.2: “The City of Wilsonville shall use a combination of regional and onsite facilities to achieve the recommended pollution reduction outlined in this Stormwater Master Plan.”

Response: The Villebois storm system will utilize a variety of onsite water quality facilities for treatment. Large greenway corridors are being master planned into the site for the purpose of providing treatment, detention and open space. In addition to these, smaller facilities will be dispersed throughout the site to provide more localized treatment. Facilities utilized by Villebois Village will range from elaborate “stream and pond” systems to more traditional swales and ponds to planter boxes and other new technologies. In addition, master planning for water quality treatment has been based on historic flow regimes for the site and will support restoration of historic flows to pre-development basins. This variety of treatment measures meets and exceeds the requirements of this policy.

Source Controls for Development

Policy 9.3.3: “The City of Wilsonville shall continue to require onsite facilities to serve new or expanding developments, subject to prescribed standards.”

Response: Villebois Village will be providing onsite facilities to achieve water quality treatment. These facilities shall meet construction and maintenance standards developed by the City of Wilsonville, and shall comply with additional measures as required for discharge directly into wetlands or other sensitive areas. The *Villebois Village Master Plan* complies with this policy.

Shading of Water Bodies

Policy 9.3.4: “The City of Wilsonville shall require shading of surface facilities in order to reduce water temperatures in existing and new surface water facilities.”

Response: Surface water quality facilities within Villebois Village will provide shading to meet City standards and, therefore, the *Villebois Village Master Plan* meets the requirements of this policy.

9.4 Landscaping Policies:

Policy 9.4.1: “The City of Wilsonville shall require landscaping in conjunction with stormwater facilities.”

Response: The City Stormwater Master Plan identifies several implementation measures regarding landscaping. Stormwater systems for Villebois Village are master planned to be a prominent, attractive and unique asset to the site. Each system will be carefully designed to address these issues. Landscaping will provide the density and height necessary to shade shallow water quality facilities and provide treatment. Materials utilized in landscaping of these facilities will be native when possible and shall be maintained in compliance with this policy. Storm facilities will be designed to provide accessible slopes of 3:1 or greater, and where not possible, fencing will be considered only as necessary for safety. Access to the facilities will also be addressed on an individual basis while retaining the ability to create a unique facility. Adequate irrigation to assure survival will be provided. The *Villebois Village Master Plan* therefore meets the requirements of this policy.

9.5 Stormwater Quantity Policies

Design Standards:

The City of Wilsonville’s Public Works Standards provide standards for hydrology and hydraulic design, as well as construction details and design criteria for pipes and channels. The City’s standards also address the conveyance design storm event and guidelines for determining upstream and downstream impacts.

Policy 9.5.1: “The City of Wilsonville shall continue to utilize Public Works Standards that provide a comprehensive set of requirements for surface water management facilities.”

Response: Utilization of the “Santa Barbara Urban Hydrograph method” has become an accepted industry standard practice for hydrologic analysis. This method will be used on the Villebois site with the approval of the City Engineer. Stormwater quantity facilities in Villebois Village will utilize, as a minimum, the City of Wilsonville *Public Works Standards* for design and construction specifications. In addition, requirements for onsite detention will follow the guidelines established with this policy. The preliminary drainage report as prepared for the *Villebois Village Master Plan* will be in compliance with the design standards of the City’s

Stormwater Master Plan and Public Works Standards. Therefore, the *Villebois Village Master Plan* is in compliance with this policy.

Onsite Stormwater Detention:

The proposed regional stormwater facilities were limited by geographical and financial constraints and will not by themselves be able to maintain future-condition flows at existing levels. As stream bank erosion is affected by both the frequency and magnitude of increased flows, runoff from both small and large storms must be controlled, managed on or as close as is practical to the development site in order to mitigate water quantity and water quality discharge impacts near the source. Consequently, onsite detention facilities for new development City-wide are recommended but financial participation in regional facilities will be considered as well as other creative alternatives to onsite detention facilities.

Policy 9.5.2: “The City of Wilsonville shall continue to require onsite detention facilities to serve new or expanding developments, subject to prescribed standards.”

Response: Policy 9.5.2 includes two Implementation Measures regarding detention. Implementation Measure 9.5.2.1 specifies design standards for onsite detention facilities. The Arrowhead Creek and Mill Creek basins will provide onsite detention and will follow the design requirements identified in this policy. Implementation Measure 9.5.2.2 allows for exemptions to onsite detention for situations where properties discharge directly to open water bodies that have no capacity limitations, areas where detention in downstream reaches could increase peak stormwater flow rates, and other areas or unique circumstances as identified by the City Engineer. Per the MT2 application to update mapping for the upper portion of Coffee Lake Creek, Seely Ditch and Basalt Creek prepared by HDR on October 25, 2004, the Memo from HDR dated November 13, 2005 and the Technical Memorandum from inter-fluve, inc. dated November 3, 2005, onsite detention facilities for Villebois are not required for the Coffee Lake Creek basin. These documents conclude that releasing stormwater from Villebois without detention will have no significant impact on water levels in Coffee Lake Creek or downstream facilities and may actually have a negative impact on the wetlands due to lower magnitude, longer duration flows. These conclusions meet the criteria identified in 9.5.2.2 to remove the requirement for onsite detention in the Coffee Lake Creek basin.

In addition to stormwater detention, the Rainwater Management Program will strive to reduce the increased runoff from the 90th percentile of rainfall. Villebois Villager will develop design guidelines for achieving this goal as part of each Specific Area Plan, thereby meeting and exceeding the requirements of this policy.

9.6 Property Acquisition Policies

Policy 9.6.1: “The City of Wilsonville shall continue to acquire property in fee or easement for stormwater facilities.”

Response: Public stormwater facilities constructed within Villebois Village will be granted to the City of Wilsonville either in fee or easement. The developer shall obtain the necessary easements for the construction of any off-site facilities proposed. The *Villebois Village Master Plan* is therefore in compliance with this policy.

REVIEW OF IMPLEMENTATION PLAN CONCLUSION

The *Villebois Village Master Plan* addresses and complies with the policies and implementation measures of the City Stormwater Master Plan.

4.3.4 VILLEBOIS VILLAGE MASTER PLAN IMPLEMENTATION

Goal

The Villebois Village shall include adequate storm water systems to prevent unacceptable levels of flooding, protect receiving streams and water bodies from pollution and increased runoff rates due to development, and create a connection between people and the environment.

Policy

1. The onsite storm water system for Villebois shall meet the necessary requirements of the City of Wilsonville Stormwater Master Plan and Public Works Standards.
2. Villebois Village shall strive to minimize the development “footprint” on the hydrological cycle through the combination of stormwater management and rainwater management.
3. Villebois Village shall integrate rainwater management systems into parks and open space areas.

Implementation Measures

1. The Master Planner shall submit the necessary application materials for a legislative plan amendment to Chapter 4 – Utilities of the Villebois Village Master Plan related to stormwater management and rainwater on the site no later than January 1, 2006. Application materials shall include updated Villebois Village Master Plan findings, text, maps and figures as appropriate, and supporting technical data and analyses to address this issue as appropriate. Such amendments shall apply to pending and future SAP and PDP approvals.
2. Application for a revised SAP South rainwater management plan and program shall be submitted by March 1, 2006. The final plat for PDP 4 – South shall not be approved until said plan and program are approved by the City.
3. Implement the following list of City Stormwater Master Plan policies and facilities:
 - Policies: 9.1-9.6
 - Projects: CLC-10

At a minimum CIP Project CLC-10 shall be complied with. Alternatives to CLC-10 shall be explored to additional restoration of historic flows. These alternatives, Options A and B, seek to restore historic flows to Arrowhead Creek thereby correcting the out of basin transfer that occurred with the construction of the Dammasch State Hospital. Analysis of these alternatives will be coordinated with the City, METRO, and affected property owners.

4. Develop a Rainwater Management Program with the first Specific Area Plan that will provide opportunities for integrating water quality and detention into the site’s natural features and the proposed urban form, thus developing a green, natural, aesthetically pleasing rainwater management system. This program will provide the specific goal of reducing the increase in runoff from the 90th percentile of all rain events, mimicking pre-development hydrology and keeping Villebois Village true to its development goal of minimal negative impacts to the existing system. In addition to this standard, the program will provide guidelines and standards for the design of all stormwater systems challenging them to be creative and unique while meeting necessary requirements.
5. Construct CLC-10 as defined or implement Option A or B as proposed. Construction of CLC-10, or selection of an option to modify CLC-10, is to occur in accordance with the

- terms specified in the memorandum of understanding between the City/Villebois and Metro (Metro contract #926225).
6. Incorporate the construction of CLC-10 or as modified by Option A or B into the Finance Plan.
 7. Insure that on-going costs to maintain rainwater systems in public rights-of-way are included in Finance Plan.
 8. The City shall prepare a study of Coffee Lake Creek drainage basin in conjunction with the Barber Street and Boeckman Road extension projects.
 9. The City shall prepare design for fish passage culverts in the Barber Street and Boeckman Road extension projects.
 10. Historic flows will be redirected to the Coffee Lake Creek basin without detention. This is supported by conclusions drawn in the MT2 application to update mapping for the upper portion of Coffee Lake Creek, Seely Ditch and Basalt Creek prepared by HDR on October 25, 2004, the Memo from HDR dated November 13, 2005 and the Technical Memorandum from inter-fluve, inc. dated November 3, 2005. This requirement shall be addressed with the next SAP or PDP application that includes the Coffee Lake Creek basin.
 11. Pursuant to the City's Stormwater Master Plan Policies 9.2.4 and 9.2.5, maintenance of stormwater conveyance facilities, including detention/retention facilities, will be planned as part of the Specific Area Plans for the Villebois Village.
 12. Complete the study of Options A and B with regard to CIP Project CLC-10 in accordance with the terms specified in the memorandum of understanding between the City/Villebois and Metro (Metro contract #926225). The study shall consider at least the following actions, which are required to obtain approval of the City Engineer:
 - Coordinate design of culvert at Arrowhead Creek/ Wilsonville Road crossing with the Wilsonville Road Capital Improvement Project and the City of Wilsonville.
 - Prepare additional study of culvert at Jobsey Lane crossing of Arrowhead Creek and identify construction recommendations to mitigate capacity and erosion problems.
 - Design plan for removal, reconstruction or abandonment of Dammasch 36-inch outfall at Mill Creek.
 - Coordinate with and obtain approval of Metro and the City of Wilsonville for integration of a potential detention facility into the design of the Graham Oaks Natural Area. Obtain appropriate easements as required for said facility.
 - Prepare additional study of Arrowhead Creek to locate where Arrowhead Creek flows into Seely Ditch.
 - Prepare additional detailed study of impact of added flows on functioning of wetlands and prevention of overflow onto Wood Middle School and forested wetlands.
 - Obtain overall approval of drainage report.
 13. The City shall include the *Villebois Village Master Plan*, including the finalized concept of CLC-10, in future updates of the City of Wilsonville Stormwater Master Plan.

CHAPTER 5 – CIRCULATION

5.1 INTRODUCTION / PROPOSAL

The circulation system proposed in the Villebois Village is designed to reflect the principles of smart growth encouraging alternatives to the automobile while accommodating all travel modes, including passenger cars, trucks, buses, bicycles and pedestrians. Accordingly, there is a system of public and private streets and trails that will connect users of the various modes to the major activities inside and outside the community. All public streets are connected without dead-ends or cul-de-sacs, except in those rare cases where required by topography or natural features. The circulation plan will also meet all ADA requirements. *Figure 7 - Street Plan* shows the planned transportation system. *Figure 8 – Proposed Arterial & Collector System* shows the planned Arterial and Collector street system, and *Figures 9A & 9B – Street & Trail Sections* show the planned cross-sections for the streets and trails.

5.2 TRANSPORTATION SYSTEMS PLAN COMPLIANCE ANALYSIS

PURPOSE OF THE COMPLIANCE ANALYSIS

The City of Wilsonville recently adopted its Transportation Systems Plan (TSP). A Master Plan for Villebois has been prepared for evaluation under the TSP, which shows:

- The proposed street plan;
- The proposed Arterial/Collector system; and
- The proposed street sections.

RELEVANT DOCUMENTS

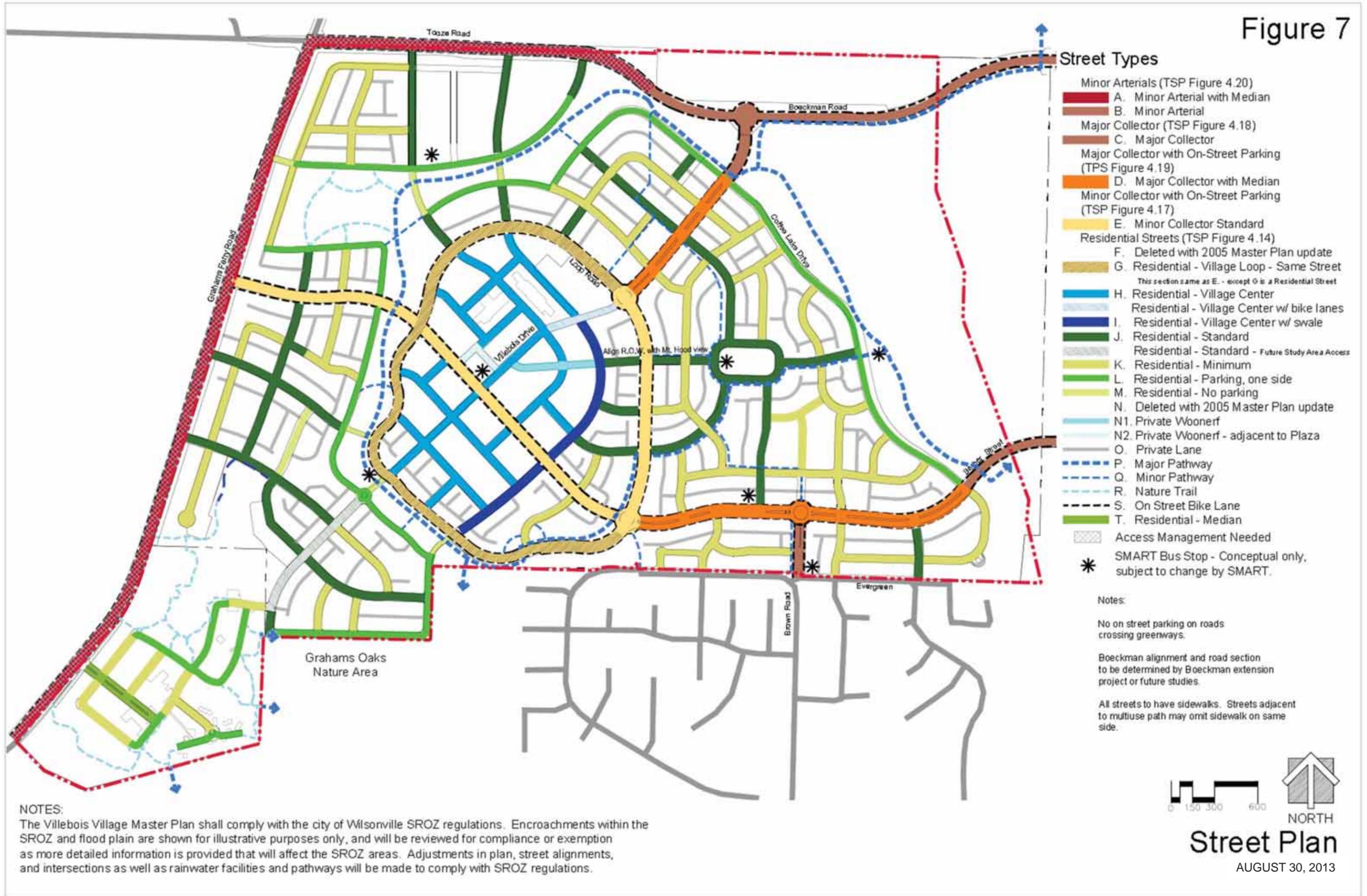
The referenced City transportation plan is titled “City of Wilsonville Transportation Systems Plan, June 2, 2003.” The *Villebois Village Master Plan* consists of *Figure 7 – Street Plan*, *Figure 8 – Proposed Arterial & Collector System*, and *Figures 9A & 9B – Street & Trail Sections*.

METHODOLOGY

Figure 7 - Street Plan of the *Villebois Village Master Plan* shows a system of Residential, Collector and Arterial streets that interconnect between modes and activities within and outside Villebois Village. The *Villebois Village Master Plan* is generally consistent with the Wilsonville TSP in that it:

- Retains the north-south Collector through the site in a modified alignment of Brown Road-110th Avenue;
- Retains the east-west Arterial connection on the northern boundary of the site by providing a through connection from Kinsman Road to Grahams Ferry Road;
- Maintains a hierarchy of streets within and adjacent to Villebois, while providing the TSP required spacing of Arterial, Collector, and Residential streets;
- Provides acceptable levels of service at all street intersections;
- Adheres to the City’s access spacing policy on all streets, with minor exceptions as discussed below; and
- Provides safe movements for all travel modes, by complying with City policies and standards including AASHTO standards.
- Provide adequate north/south connectivity for local traffic with Villebois Drive and the Loop Road.

Figure 7



- ### Street Types
- Minor Arterials (TSP Figure 4.20)
 - A. Minor Arterial with Median
 - B. Minor Arterial
 - Major Collector (TSP Figure 4.18)
 - C. Major Collector
 - D. Major Collector with Median
 - Major Collector with On-Street Parking (TSP Figure 4.19)
 - E. Minor Collector Standard
 - Minor Collector with On-Street Parking (TSP Figure 4.17)
 - F. Deleted with 2005 Master Plan update
 - G. Residential - Village Loop - Same Street
This section same as E. - except G is a Residential Street
 - H. Residential - Village Center
 - I. Residential - Village Center w/ bike lanes
 - J. Residential - Village Center w/ swale
 - K. Residential - Standard
 - L. Residential - Standard - Future Study Area Access
 - M. Residential - Minimum
 - N. Residential - Parking, one side
 - O. Residential - No parking
 - Residential Streets (TSP Figure 4.14)
 - N1. Deleted with 2005 Master Plan update
 - N2. Private Woonerf
 - O. Private Lane
 - P. Major Pathway
 - Q. Minor Pathway
 - R. Nature Trail
 - S. On Street Bike Lane
 - T. Residential - Median
 - Access Management Needed
 - SMART Bus Stop - Conceptual only, subject to change by SMART.

Notes:

- No on street parking on roads crossing greenways.
- Boeckman alignment and road section to be determined by Boeckman extension project or future studies.
- All streets to have sidewalks. Streets adjacent to multiuse path may omit sidewalk on same side.

NOTES:
 The Villebois Village Master Plan shall comply with the city of Wilsonville SROZ regulations. Encroachments within the SROZ and flood plain are shown for illustrative purposes only, and will be reviewed for compliance or exemption as more detailed information is provided that will affect the SROZ areas. Adjustments in plan, street alignments, and intersections as well as rainwater facilities and pathways will be made to comply with SROZ regulations.

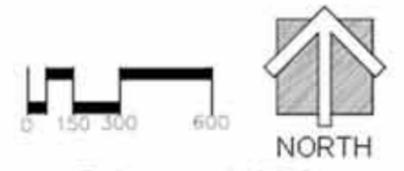
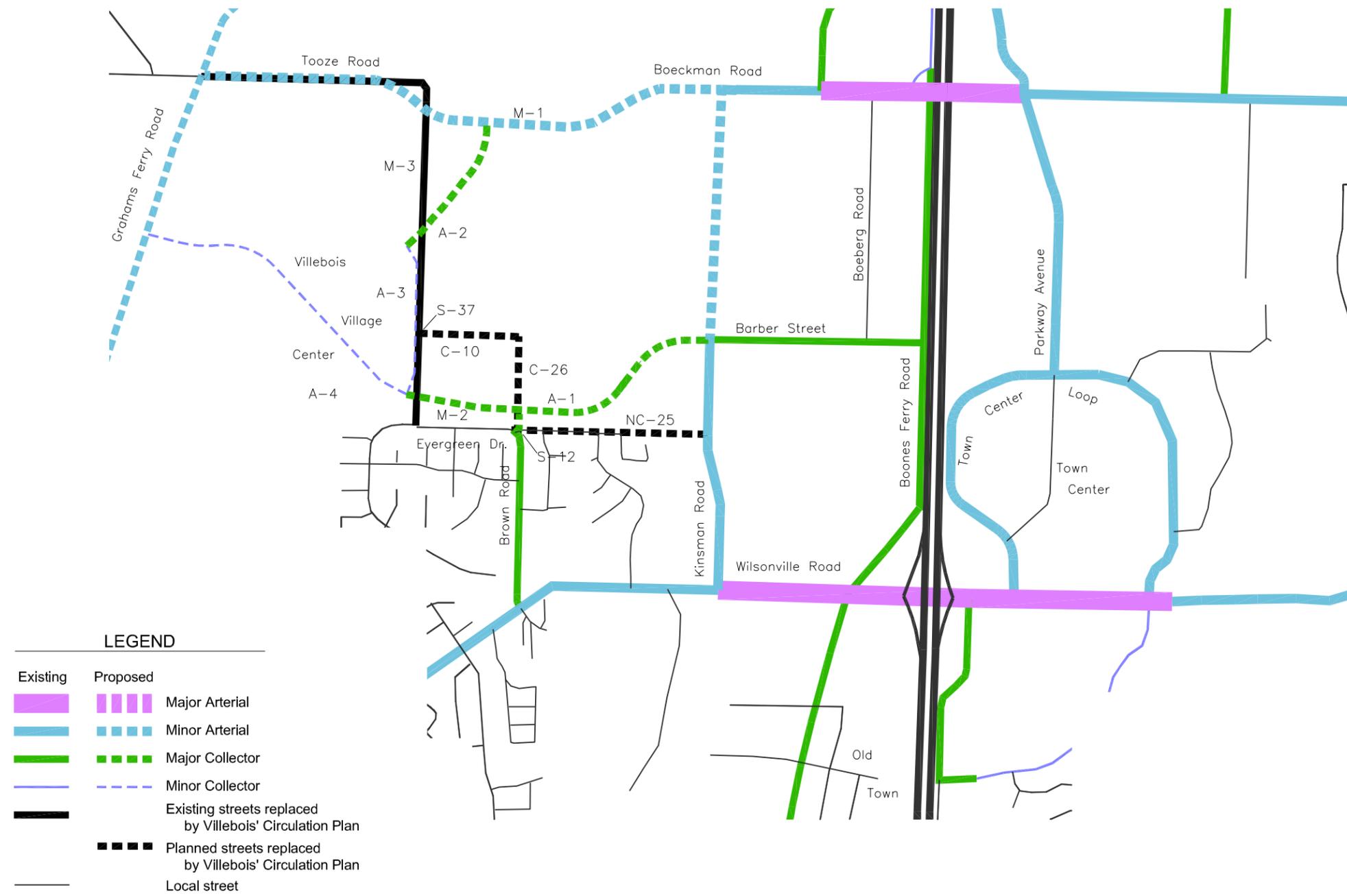


Figure 8

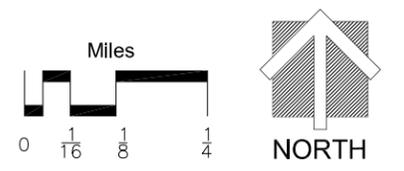


LEGEND

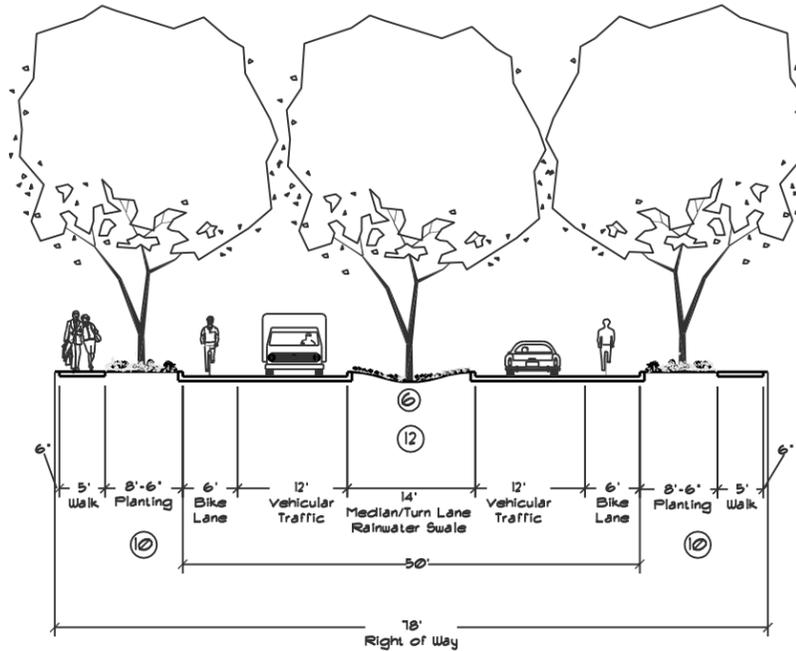
Existing	Proposed	
		Major Arterial
		Minor Arterial
		Major Collector
		Minor Collector
		Existing streets replaced by Villebois' Circulation Plan
		Planned streets replaced by Villebois' Circulation Plan
		Local street

Note:
See Villebois Street Sections for specific Collector / Arterial configurations

(Source: 2003 TSP and Villebois Village Plan)

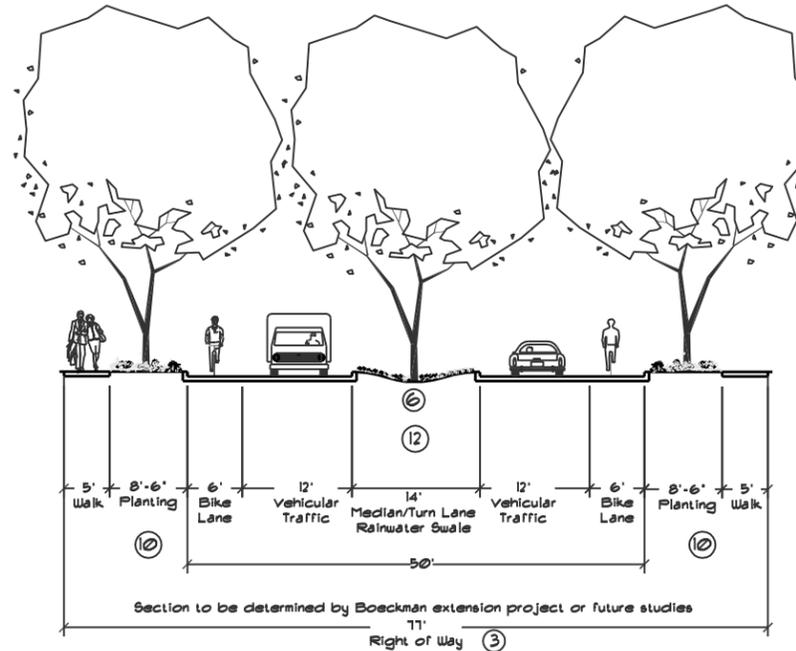


Proposed Arterial/Collectors Street System
FEBRUARY 23, 2005



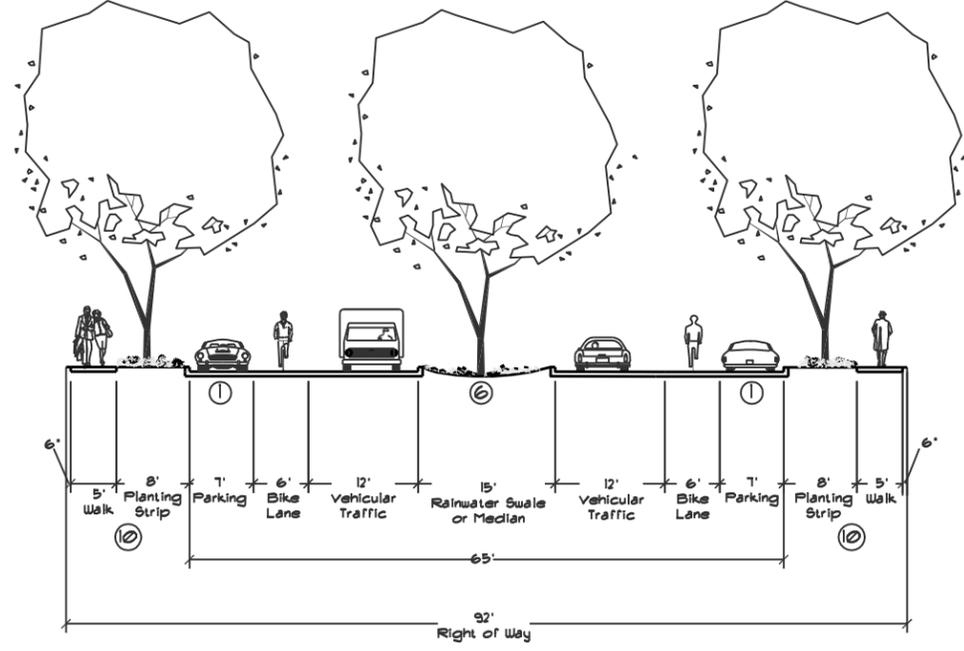
A. Minor Arterial with Median

Scale: 1" = 20'
(TSP Figure 4.20)



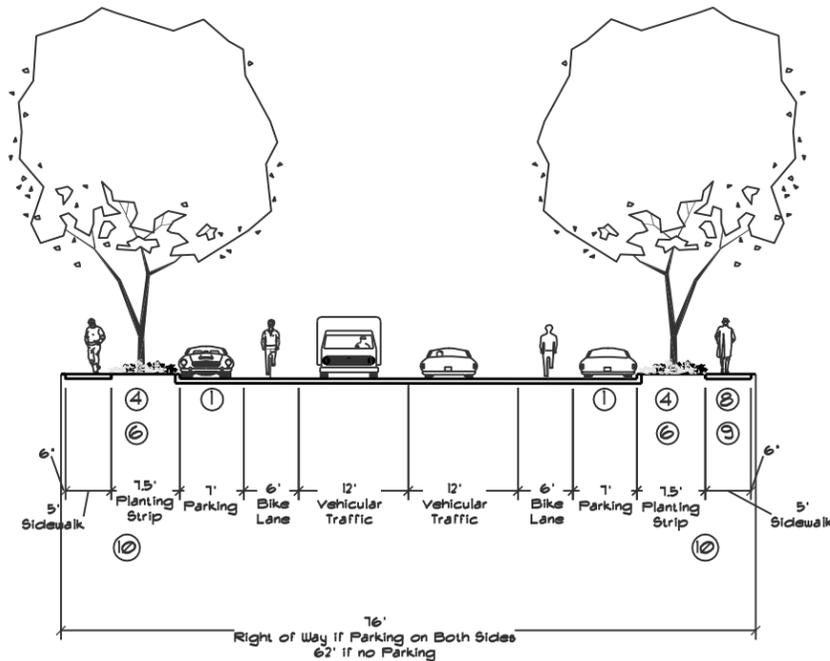
B. & C. Minor Arterial / Major Collector

Scale: 1" = 20'
(TSP Figure 4.20 / 4.18)
Minor Arterial at Boeckman Road
Major Collector at Barber Street



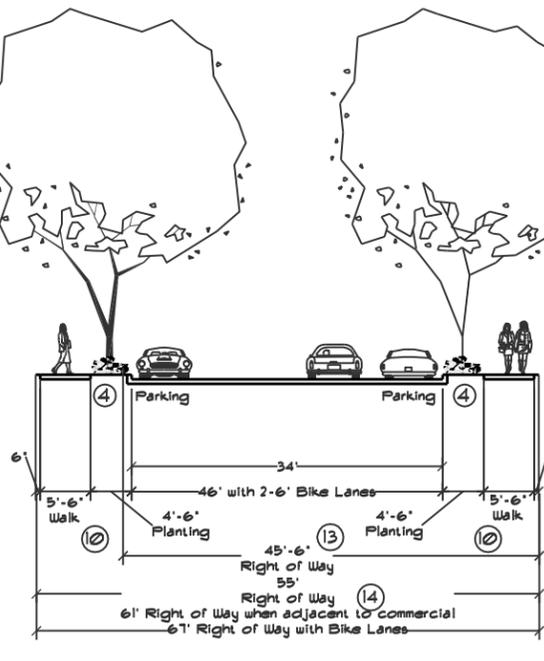
D. Major Collector with Median

Scale: 1" = 20'
(TSP Figure 4.19)



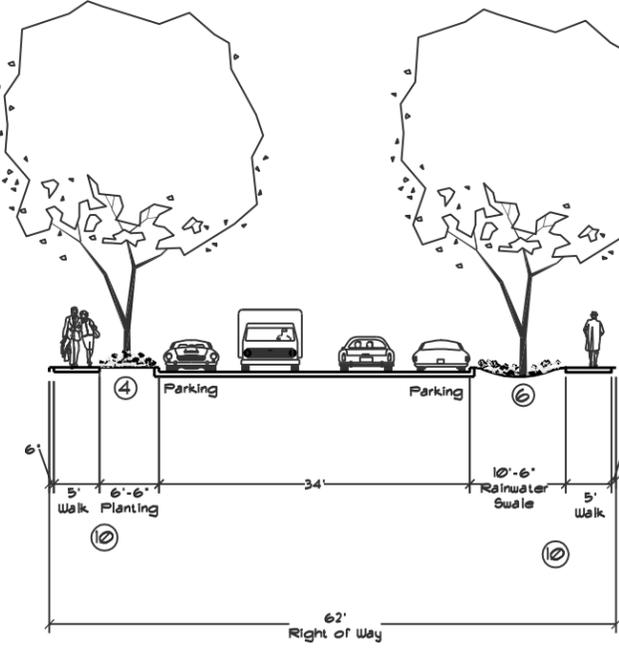
E. & G. Minor Collector Standard / Residential - Village Loop

Scale: 1" = 20'
(TSP Figure 4.17)
(TSP Figure 4.14)
Residential Village Loop - same street section as
Minor Collector - Standard but is a Residential Street



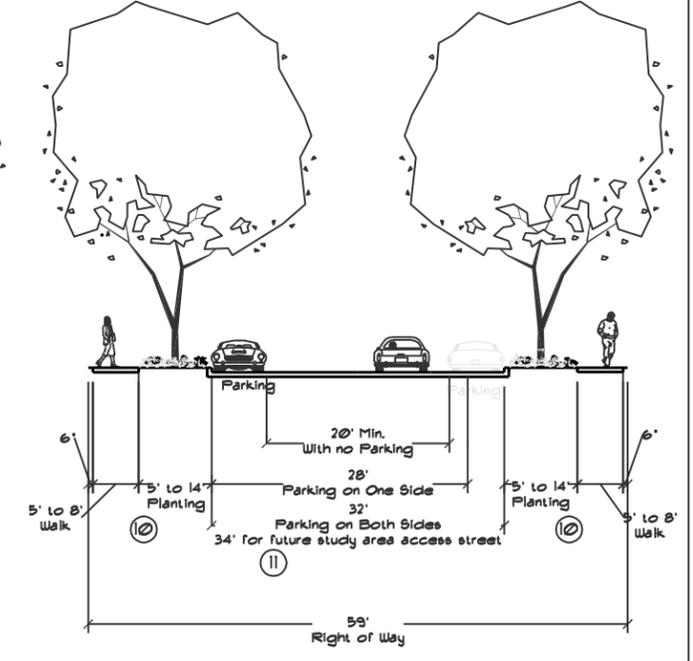
H. Residential - Village Center

Scale: 1" = 20'
(TSP Figure 4.14)



I. Residential - Village Center w/ swale

Scale: 1" = 20'
(TSP Figure 4.14)

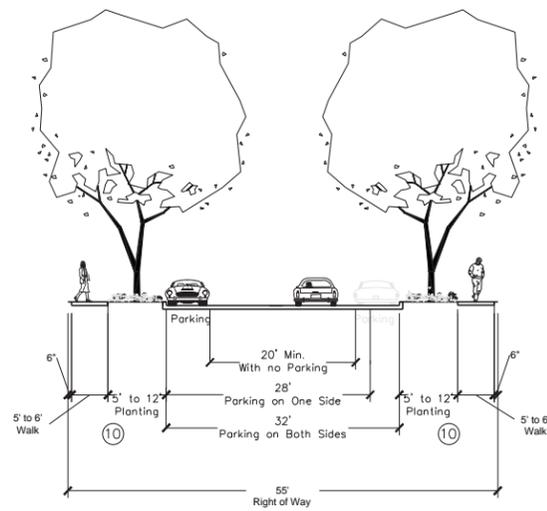


J. Residential - Standard - FSA Access

Scale: 1" = 20'
(TSP Figure 4.14)

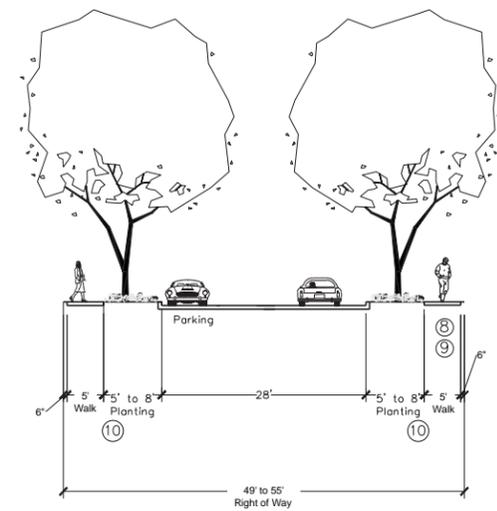
NOTES:

1. No parking where turn lanes are required at intersections or at Graham's Ferry Road.
2. Rainwater swales are not required for streets with grades in excess of 8%.
3. Section to be determined by Boeckman extension project or future studies.
4. In the village center the sidewalk may be widened to include the planting area when adjacent to retail/commercial uses.
5. Blocks over 330' will have a mid-block Pedestrian crossing. This same area will provide 20 feet clear for vehicle passing on Queuing streets.
6. See 06A Submission for swale locations.
7. No planting strip at Greenway crossings. Provide minimum 5' clear sidewalk from back of curb.
8. Walkway and planting strip optional when adjacent to multi-use trail.
9. The Right of Way shall be reduced to 12' behind face of curb where adjacent to open spaces.
10. Dry Utilities in sidewalk and planter area where necessary. Individual unit service to be in private lane where available.
11. 34' width for LEC access road may be revised with the SAP Plans to a 32' access road.
12. Continuous turn lane at Graham's Ferry Road.
13. 46' width when adjacent to Linear Green.
14. Sidewalk becomes 13.5'; planting strip is removed and Right of Way becomes 61' when adjacent to Commercial.
15. Section F deleted with 2005 Master Plan update.
16. Section N deleted and replaced with Sections NI & N2.



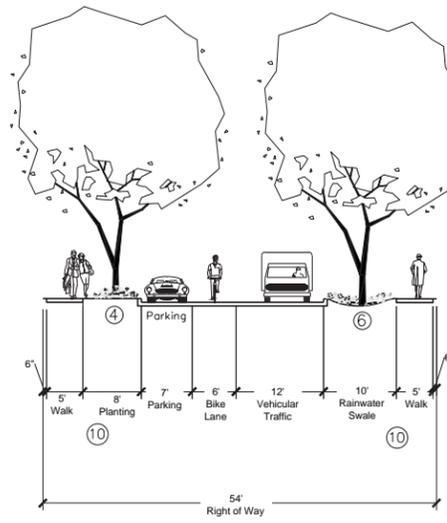
K. Residential - Minimum

Not To Scale
(TSP Figure 4.14)



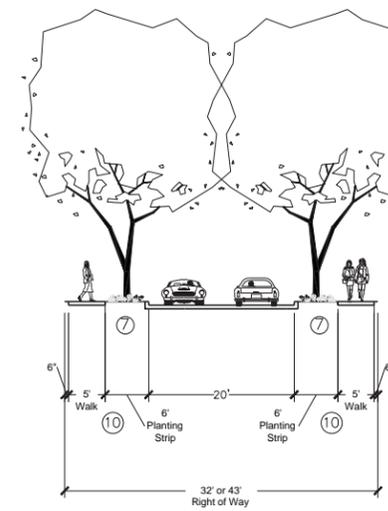
L. Residential - Parking One Side

Not To Scale
(TSP Figure 4.14)



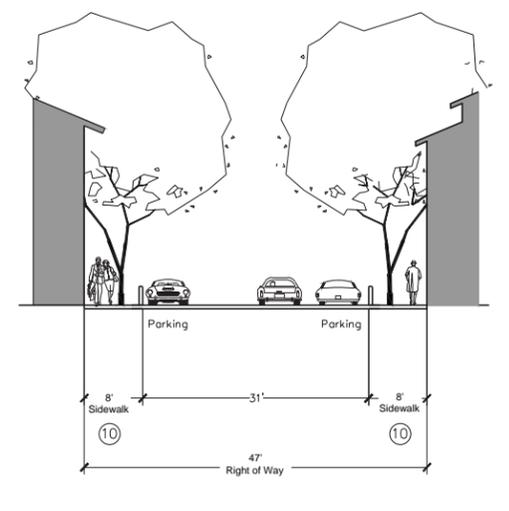
L. Residential - Parking One Side, One-way Traffic

Not To Scale
(TSP Figure 4.14)



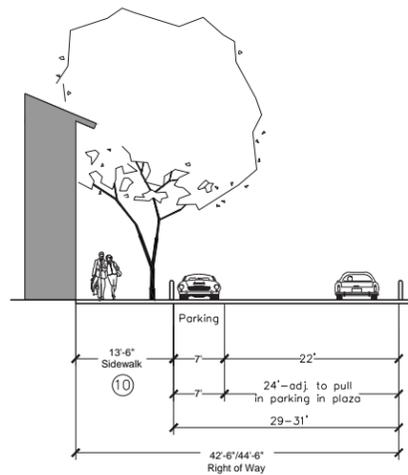
M. Residential - No Parking

Not To Scale
(TSP Figure 4.14)



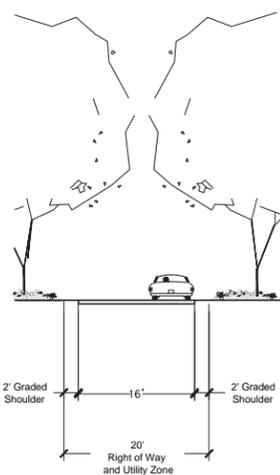
N1. Private Woonerf

Not To Scale



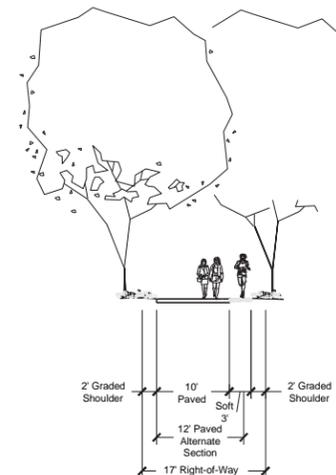
N2. Private Woonerf - adjacent to Plaza

Not To Scale



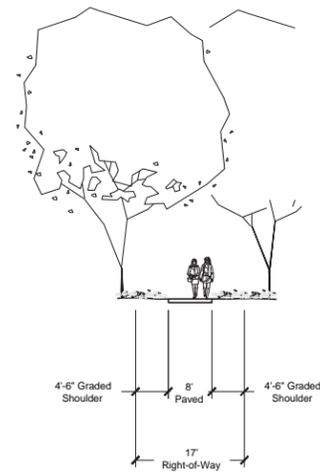
O. Private Lane

Not To Scale



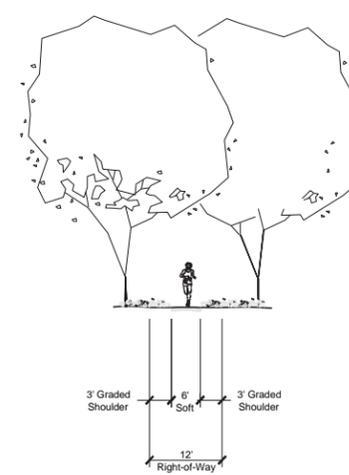
P. Major Pathway

Not To Scale



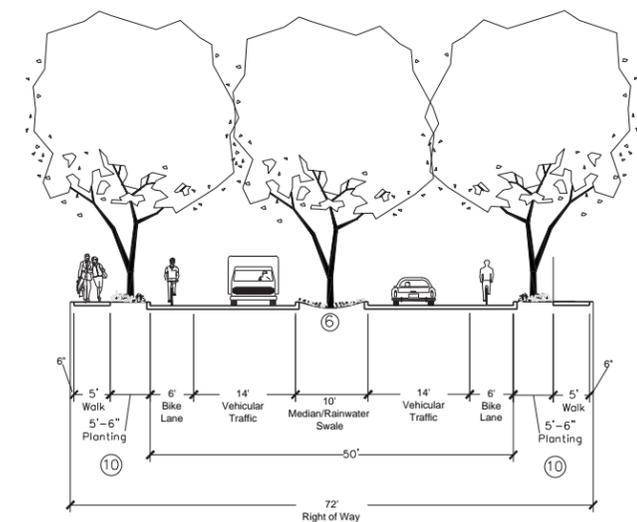
Q. Minor Pathway

Not To Scale



R. Nature Trail

Not To Scale



T. Residential - Median

Not To Scale

NOTES:

- No parking where turn lanes are required at intersections or at Graham's Ferry Road.
- Rainwater swales are not required for streets with grades in excess of 8%.
- Section to be determined by Boeckman extension project or future studies.
- In the village center the sidewalk may be widened to include the planting area when adjacent to retail/commercial uses.
- Blocks over 330' will have a mid-block Pedestrian crossing. This same area will provide 20 feet clear for vehicle passing on Queuing streets.
- See 06A Submission for swale locations.
- No planting strip at Greenway crossings. Provide minimum 5' clear sidewalk from back of curb.
- Walkway and planting strip optional when adjacent to multi-use trail.
- The Right of Way shall be reduced to 12' behind face of curb where adjacent to open spaces.
- Dry Utilities in sidewalk and planter area where necessary. Individual unit service to be in private lane where available.
- 34' width for LEC access road may be revised with the SAP Plans to a 32' access road.
- Continuous turn lane at Graham's Ferry Road.
- 46' width when adjacent to Linear Green.
- Sidewalk becomes 13.5', planting strip is removed and Right of Way becomes 61' when adjacent to Commercial.
- Section F deleted with 2005 Master Plan update.
- Section N deleted and replaced with Sections N1 & N2.

The following areas identified below are discussed in greater detail within this Section 5.2:

- Street designations;
- Roundabouts;
- Parking on Collectors;
- Access control on Minor Arterials;
- Continuity of streets and trails; and
- Curb Extensions.

COMPLIANCE ANALYSIS

Street Designations

The roadway classifications included in the *Villebois Village Master Plan* are generally consistent, with some variations from those in the Wilsonville TSP. As in the Wilsonville TSP, the *Villebois Village Master Plan* has streets classified as Arterials, Collectors and Residential streets. The *Villebois Village Master Plan* includes alternative cross-sections for the Collector and Residential street classifications, as defined in Table 5 in Section 5.3, below.

Implementation

The street designations and standards prepared for the Villebois Village generally meet the standards specified in the Wilsonville TSP. Alternative street sections allow use of a Residential street section with no parking, and widths to be exceeded for medians, planter strips and sidewalks on street sections as identified in Table 5 of Section 5.3, below.

Roundabouts

Roundabouts will be used at locations identified on *Figure 7 – Street Plan* and will be designed to effectively manage traffic at acceptable levels of service without the need for traffic control signals, as defined in the Wilsonville TSP. Accordingly, roundabout-controlled intersections would operate at LOS “D” or better during peak hours.

Implementation

Roundabouts will be used in the locations shown on *Figure 7 – Street Plan* of the *Villebois Village Master Plan*.

Parking on Collectors

On-street parking will be provided on all internal streets, with a few exceptions where adjacent land uses do not create the need for parking. Villebois Village will be developed with front doors facing the street. On-street parking is an important community characteristic for both visitors and residents when driveways are located at the back of the house since it encourages activity on the street and provides convenient access to homes. The presence of parking along Collector streets will encourage moderate travel speeds. These street sections have been designed to enable safe parking and unparking maneuvers so as not to adversely affect the safety of pedestrians and bicyclists or affect the function of a Collector street.

The TSP references a book whose basic principles should be a guide for Wilsonville. The referenced book, entitled *Creating Livable Streets: Street Design Guidelines for 2040* (Metro, June 2002), states that:

On-street parking is permitted and provided on many of the best streets. Proportionately, parking is provided on more good streets than not. At today’s car ownership levels on-street parking cannot by itself meet all of the demand created by adjacent land use. Nevertheless, on-street parking:

1. *supports local economic activity of merchants, by providing access to local uses, as well as visitor needs in residential areas*
2. *increases pedestrian safety by providing a buffer for pedestrians from automobile traffic*
3. *increases pedestrian activity, in general, on the street. Since people rarely find parking in front of their destination, they walk, providing more exposure to ground floor retail and increasing opportunities for social interactions*
4. *increases local economic activity by increasing the visibility of storefronts and signs to motorists parking on street*
5. *supports local land use by reducing development costs for small business by reducing needs for onsite parking*
6. *provides space for on-street loading, increasing the economic activity of the street and supporting commercial uses*

The Villebois Village plan strives to meet these goals through its provision of on-street parking for Residential and Collector streets.

Implementation

Collector streets that allow on-street parking shall be designed in consideration of the safety of pedestrians and bicyclists and shall be reviewed by the City Engineer.

Access Control on Minor Arterials

Implementation

Requests for major alternatives to allow less than 600 foot access spacing on Grahams Ferry Road will follow the process outlined in Wilsonville TSP Implementation Measure 4.1.1.b(3). *(Note: This issue has been resolved. The approved SAP South street system reflects the appropriate access spacing on Grahams Ferry Road).*

Continuity of Streets and Trails

With the exception of situations where physical constraints prohibit, streets and trails are connected. The *Villebois Village Master Plan* provides vehicular connection to all existing streets that currently stub to the property (including Montebello Drive, Serenity Way, Brown Road and Yosemite Street) to assure neighborhood circulation and connectivity consistent with City and Metro requirements. As described in the Wilsonville TSP, all streets should connect except in situations where physical constraints do not permit.

Provide local/residential street connections within Villebois every 300' to 500' to improve access between neighborhoods to encourage use of all modes of travel.

Provide nature trail connections between the Future Study Area property and SW San Remo Court, SW Grenoble Street, and Normandy Lane. Also provide east and south trail connections from the Future Study Area property to the Coyote Way Trail within Grahams Oak Nature Park.

Implementation

The *Villebois Village Master Plan* conforms to the connectivity and circulation standards prescribed in the Wilsonville TSP.

Curb Extensions

The Villebois Village circulation plan includes curb extensions in locations of high pedestrian activity. Curb extensions serve to minimize speeds and the length of exposure for pedestrians crossing streets, and also provide protection for on-street parked cars. It is recognized that curb

extensions may restrict the ability for larger vehicles to turn at street corners. The following basic principles shall be used for the placement and design of curb extensions:

- A minimum of 20-foot face-of-curb to face-of-curb street width shall be provided at all Residential street intersections, even where curb extensions are located. In the Village Center (inside the Village Loop), the minimum curb-to-curb street width for public streets should be 22 feet, in order to accommodate delivery and garbage truck movements.
- Fire trucks, buses, and single-unit trucks (i.e., garbage trucks) shall be able to negotiate from Collector/Arterial streets without crossing the Collector/Arterial street centerline. Fire trucks shall be able to negotiate through Residential streets, although it is acceptable for them to cross the street centerline on Residential streets.
- Passenger car turning movements shall be able to stay within the street centerline on all streets.
- Bike lanes shall not be forced into vehicle travel lanes.

Implementation

By following these basic design standards, streets within the Villebois Village will be able to meet or exceed safety and capacity standards as prescribed in the Wilsonville TSP and AASHTO standards. Placement of curb extensions shall be reviewed through the City's minor alteration process with Specific Area Plans.

North/South Neighborhood Connectivity

Villebois Drive is a key roadway that provides neighborhood connectivity between southwest and northeast Villebois. This roadway should be operated and maintained in a manner to encourage north/south neighborhood travel. Any design modifications that would discourage north/south neighborhood connectivity should not be considered.

Enhanced Pedestrian and Bicycle Crossings

Provide enhanced pedestrian and bicycle crossings for high use pedestrian crossings (i.e. trails and pathway). Enhanced crossings can include but are not limited to medians, curb extensions, raised pedestrian crossings, signing and markings.

Implementation

Placement of enhanced pedestrian crossings shall be reviewed and approved by City staff through the Specific Area Plan (SAP) and Preliminary Development Plan (PDP) approval process. Enhanced crossing locations should follow ODOT and FHWA guidelines to maintain consistency with state and national and practices.

5.3 TRANSPORTATION SYSTEMS PLAN POLICY ANALYSIS

The Villebois circulation plan is generally consistent with the policies and implementation measures of the Wilsonville TSP and AASHTO standards. The following section describes many of the policies and implementation measures that the Villebois plan either supports or proposes to alter.

TSP Goal 4.1: To provide an interconnected motor vehicle system that will safely and efficiently provide for vehicle circulation and enhanced mobility.

Response: The *Villebois Village Master Plan* provides enhanced mobility and connectivity for all travel modes. For motor vehicle circulation, all public streets are connected without dead-ends or

cul-de-sac's except in those rare cases where required by topography or natural features. The *Villebois Village Master Plan* includes a hierarchical system of Arterial, Collector and Residential streets within and through the site that meets the intent and long-term needs of the Wilsonville TSP. The streets and intersections in Villebois will provide acceptable levels of service as defined in the Wilsonville TSP (LOS "D" or better).

TSP Section 4.4.6: Access Management and Table 4.0: Access Management Guidelines.

Response: The minimum access spacing for each functional classification and whether the *Villebois Village Master Plan* is in compliance is shown in the table below:

Table 4: Functional Classification Comparison

Functional Classification (Wilsonville TSP-April 2003 Public Draft)	Functional Classification (Figure 7 – Street Plan of the VVMP)	Minimum Access Spacing (Wilsonville TSP-April 2003 Public Draft)	VVMP Compliance (Yes or No)
<i>Major Arterial</i>	None	<i>1,000 ft.</i>	N/A
<i>Minor Arterial</i>	Minor Arterial	<i>600 ft.</i>	Yes*
<i>Major Collector</i>	Major Collector	<i>100 ft.</i>	Yes
<i>Minor Collector</i>	Minor Collector	<i>50 ft.</i>	Yes
<i>Residential Street</i>	Residential	<i>Access to each lot permitted</i>	Yes

* See Section 5.4 (Villebois Village Master Plan Implementation) Implementation Measure 4.

TSP Section 4.7 Implementation Measures

Implementation Measure 4.1.1.b Use the Roadway Design Standards (Section 4.4.1 and Figures 4.12 through 4.22) as the standard for designing all street improvements in the city.

The TSP provides (subsection 4.1.1.b.3):

For publicly constructed streets, these standards may be waived for major alternatives by the City Council and for minor alternatives by the City Engineer. A major alternative is one that involves a significant change from the standards impacting capacity and speed, that changes pedestrian safety and convenience, or that alters large areas of required landscaping. Examples include but are not limited to changing the number of lanes, moving a sidewalk from the property-line to the curb-line, using alternatives to standard curb, gutter, and median systems for managing stormwater, or eliminating the landscaped strip. A minor alternative is one that involves a small change from the standards that does not affect capacity or speed and does not diminish safety or aesthetics for the project as a whole. Examples include but are not limited to narrowing of lanes to moving a sidewalk to go around landscape features, or a small narrowing of lanes to fit tight right-of-way.

TSP Figures 4.12 through 4.22: Street Classification, Widths and Names.

Response: The *Villebois Village Master Plan* street classifications and widths are shown in Table 5 below, together with the appropriate TSP section. Proposed alternatives to the standards are described in detail following Table 5.

Table 5 provides a comparison of each relevant TSP figure with the correlating street sections proposed in the *Villebois Village Master Plan*. The TSP figures are noted by italics in the unshaded areas of Table 5. The *Villebois Village Master Plan* (VVMP) street sections are shown by standard text within the shaded areas of Table 5. The *Villebois Village Master Plan* street sections are depicted on *Figures 9A and 9B – Street & Trail Sections*. The locations where these street sections are planned to be used are illustrated on *Figure 7 – Street Plan*.

Table 5: Street Cross-Section Standards Comparison

Street Classification	Right-of-way	Face-of-Curb to Face-of-Curb Section	Sidewalk Width (ft)	Planter Strip Width (ft)	Parking Width (ft)	Bike lane Width (ft)	Travel Lane Width (ft)	Center Median/Turn Lane Width (ft)
Minor Arterial (TSP Figure 4.20)	71-77	50	5	8 ½	-	6	12	14
Minor Arterial w/ Median (VVMP Section A)	78	50	5	8 ½	-	6	12	14 (continuous turn lane on Grahams Ferry Road)
Minor Arterial (VVMP Section B)	77	50	5	8 ½	-	6	12	14
<hr/>								
Major Collector (TSP Figure 4.18)	71-77	50	5	8 ½	-	6	12	14
Major Collector (VVMP Section C)	77	50	5	8 ½	-	6	12	14
<hr/>								
Major Collector w/ On-Street Parking (TSP Figure 4.19)	85-87	64	5	6 ½	8	5	12	14
Major Collector w/ Median (VVMP Section D)	92	65	5	8	7	6	12	15
<hr/>								
Minor Collector w/ On-Street Parking (TSP Figure 4.17)	69-73	50	5	6 ½	8	5	12	None
Minor Collector Standard (VVMP Section E)	76 ¹	50 ³	5 ^{3,7}	7 ½ ³	7	6	12	None
<hr/>								
Residential Street (TSP Figure 4.14)	47-51	28-32	5	4 ½	Not striped	Shared w/ cars	Not striped	None
Residential Village Loop (VVMP Section G)	76 ¹	50 ²	5 ³	7 ½ ³	7	6	12	None
Residential Village Center (VVMP Section H)	55-67	34	5 ½-13 ½	4 ½ ^{3,7}	Not striped	Shared w/ cars ⁸	Not striped	None
Residential Village Center w/ Swale (VVMP Section I)	62	34	5	6 ½-10 ½	Not striped	Shared w/ cars	Not striped	None
Residential Standard (VVMP Section J)	59	20-34	5-8	5-14	Not striped	Shared w/ cars	Not striped ⁶	None
Residential Minimum (VVMP Section K)	55	20-32	5-6	5-12	Not striped	Shared w/ cars	Not striped ⁶	None
Residential Parking One Side (VVMP Section L)	49-55 ¹	28 ²	5 ³	5-8 ³	Not striped	Shared w/ cars	Not striped	None
Residential No Parking (VVMP Section M)	32-43 ¹	20 ²	5 ³	6 ³	Not striped	Shared w/ cars	Not striped ⁶	None

- Notes:
- The right-of-way shall be reduced to 12' behind face of curb where adjacent to open spaces.
 - When adjacent to open space, parking on that side is optional.
 - When adjacent to open space, planting strip and sidewalk are optional.
 - The Villebois Village Master Plan depicts a proposed alternative to have a 13' wide median in lieu of planter strips. The Master Planner is evaluating this alternative. If this alternative is not utilized, another approved street section for Villebois will be used.
 - When the 20' wide curb-to-curb section is used, no parking will be allowed.
 - Villebois has a number of local street designations (refer to *Figure 7 – Street Plan* and *Figures 9A & 9B – Street & Trail Sections*). In all cases, each of these designations has a cross-section with a minimum of 32-ft. curb-to-curb section where parking is allowed on both sides; each section is a minimum of 28 feet where parking is allowed on one side, and those sections allowing no parking on either side are a minimum of 20 feet. A 20-ft. section is the minimum allowed for fire access purposes. All sections have a minimum 5-ft. sidewalk, minimum 5-ft. planter (except where adjacent to open space or park). Only the local streets - Village Loop and Village Center - with Median designations have striped bike lanes; in all other cases bike lanes are shared with motor vehicles and not explicitly striped for either travel lanes or bike lanes.
 - In the Village Center, the sidewalk may be widened to include the plating area when adjacent to retail/commercial uses.
 - 6' bike lanes on Villebois Drive from Costa Circle to Ravenna Loop.

Implementation

Pursuant to TSP Implementation Measure 4.1.1.b(3), the following major alterations are included in the *Villebois Village Master Plan*. A brief description of the major alteration is also provided below.

- On-street parking on Major Collector (VVMP Street Section D) and Minor Collector (VVMP Street Section E).

On-street parking will be provided on Barber Street (Major Collector & Minor Collector), the portion of the Loop Road (Minor Collector) between Barber Street and Villebois Drive, and the portion of Villebois Drive (Major Collector) between the Loop Road and Boeckman Road. Villebois Village will be developed with front doors facing the street. On-street parking is an important community characteristic for both visitors and residents when driveways are located at the back of the house, since it encourages activity on the street and provides convenient access to homes. These street sections have been designed to enable safe parking and unparking maneuvers so as not to adversely affect the function of a Collector street.

- Increase planter to 8' and median to 15' on Major Collector (VVMP Street Section D), which increase right-of-way to 92' and curb-to-curb to 65'.

Planter strip and median widths are increased on the portion of Barber Street between 110th Avenue and Coffee Lake Creek Drive and on Villebois Drive between the Loop Road and Coffee Lake Creek Drive. The wider planter strips and medians will allow larger canopied trees to be planted throughout the Village. Larger canopied trees will contribute to reductions in "heat island effect." Wider planter areas also will allow for greater variety in street trees by increasing size options. Thus, wider planter strips will contribute to the sustainability and diversity of the community.

- Increase planter to 7 ½' and stripe parking and bike lane on Residential Street (VVMP Street Section G), which increases curb-to-curb and right-of-way widths.

The wider planter strip will allow larger canopied trees to be planted (see above discussion). Parking and bike lanes will be striped due to the high level of activity expected along this street.

- Increase sidewalk widths on Residential Streets (VVMP Street Sections H, I, J and K) and increase planter strip widths on Residential Streets (VVMP Street Sections I, J, K and L).

Sidewalk widths on these streets will be increased due to the higher levels of pedestrian activity anticipated on these streets. The wider planter strips will allow larger canopied trees to be planted (see above discussion).

- Reduce curb-to-curb widths to 20' and not allow parking on Residential Streets (VVMP Street Sections J, K and M).

This street section will be used where abutting land uses do not require on-street parking. The reduced street widths will minimize impervious areas, increase park areas and protect trees.

- In order to protect visibility of open spaces, on-street parking should not be allowed on the side of public streets that are directly adjacent to SROZ areas. For example, parking would not be allowed on the south side of SW Normandy Lane since it is directly adjacent to Graham Oaks Nature Park

TSP Figure 4.8 through 4.12: Major Street System Improvements.

Response: *Figure 8 – Proposed Arterial/Collector Street System* shows the proposed street system in Villebois. This street system provides the east-west and north-south Arterials and Collectors as is prescribed in the TSP Figure 4.8, with the following additions. The alignment of Barber Street (Major Collector) between Brown Road and 110th Avenue is slightly altered with the *Villebois Village Master Plan* and the link between 110th Avenue and Grahams Ferry Road (Minor Collector) is shown. The alignment of Villebois Drive (Major Collector) between 110th Avenue and Boeckman/Tooze Road is slightly altered with the *Villebois Village Master Plan*.

Proposed lanes on all Villebois Streets and intersections will provide acceptable traffic operations and safety as required in the Wilsonville TSP. Therefore, the planned capacity and connectivity of the Wilsonville TSP is retained in the proposed *Villebois Village Master Plan*.

The Wilsonville TSP mentions many of the street treatments that are included in the Villebois Village, and are the fundamental premise upon which the Villebois Village circulation plan is based. Particular discussion about these street types is quoted directly below from the City's TSP:

“Green Street”, “Livable Street”, “Skinny Street” or similar concepts are viable alternatives to the roadway standards that follow. Green streets specifically address stormwater runoff issues. Though narrow in scope, the concept has an overall effect on transportation planning and road design by focusing attention on the protection, enhancement, and restoration of the environment. Livable streets are those that promote community livability by considering all modes of transportation, the surrounding land uses, and economic growth when designing transportation facilities. Skinny streets are those that seek to reduce the overall width of the street section in order to decrease the amount of impervious surface and enhance the livability of the urban environment.”

Implementation

Future amendments to the TSP will include the new alignments for Barber Street, west of Brown Road and Villebois Drive, between 110th Avenue and Boeckman/Tooze Road as shown on *Figure 8 – Proposed Arterial/Collector System* of the *Villebois Village Master Plan*.

TSP Figure 5.3a 2002 Bicycle Map & Proposed Bicycle/Pedestrian Projects

Response: *Figure 5 – Parks & Open Space Plan* shows the proposed pathway system in Villebois. *Figures 9A and 9B* illustrate the proposed cross-sections for pathways and streets with bike lanes. This bicycle and pedestrian system provides alignments that are slightly altered from those shown in the TSP and add alignments to those shown in the TSP. The proposed system provides connectivity for pedestrians and bicyclists among the neighborhoods of Villebois and the surrounding area.

Implementation

Future amendments to the TSP will include the new Bicycle/Pedestrian pathways as shown of *Figure 5 – Parks & Open Space Plan* and *Figures 9A and 9B – Street and Trail Sections* of the *Villebois Village Master Plan*.

5.4 VILLEBOIS VILLAGE MASTER PLAN IMPLEMENTATION

Goal

The Villebois Village shall provide for a circulation system that is designed to reflect the principles of smart growth.

Policy

1. The Villebois Village shall encourage alternatives to the automobile, while accommodating all travel modes, including passenger cars, trucks, buses, bicycles and pedestrians.

Implementing Measures

1. Include the *Villebois Village Master Plan* Arterial and Collector street system (*Figure 8*) and bicycle/pedestrian system (*Figure 5*) in future updates of the 2003 TSP.
2. The *Villebois Village Master Plan* includes the following alternative street sections. Any proposed alternative street sections not included in the list below shall follow the review procedure established in the 2003 TSP.
 - On-street parking on Major Collector (VVMP street section D) and Minor Collector (VVMP street section E).
 - Increase planter to 8' and median to 15' on Major Collector (VVMP street section D), which increase right-of-way to 65' and curb-to-curb to 92'.
 - Increase planter to 7 ½' and stripe parking and bike lane on Residential Street (VVMP street section G), which increases curb-to-curb and right-of-way widths.
 - Increase sidewalk widths on Residential Streets (VVMP street sections H, I, J and K) and increase planter strip widths on Residential Streets (VVMP street sections I, J, K and L).
 - Reduce curb-to-curb widths to 20' and not allow parking on Residential Streets (VVMP street sections J, K and M).
3. Roundabout options at intersections not already identified on *Figure 7 – Street Plan* of the *Villebois Village Master Plan* shall be reviewed through the major alternative process.
4. Requests for major alternatives for access spacing less than 600 feet on Grahams Ferry Road will follow the process outlined in Wilsonville TSP Implementation Measure 4.1.1.b(3). If this major alternative request is approved, access standards shall be resolved. For publicly constructed streets, these standards may be waived for major alternatives by the City Council and for minor alternatives by the City Engineer. A major alternative is one that involves a significant change from the standards impacting capacity and speed, that changes pedestrian safety and convenience, or that alters large areas of required landscaping. Examples include, but are not limited to, changing the number of lanes, moving a sidewalk from the property line to the curb line, using alternatives to standard curb, gutter, and median systems for managing stormwater, or eliminating the landscaped strip. A minor alternative is one that involves a small change from the standards that does not affect capacity or speed and does not diminish safety or aesthetics for the project as a whole. Examples include, but are not limited to, moving a sidewalk to go around landscape features, or a small narrowing of lanes to fit tight right-of-way.

(Note: This issue has been resolved. The approved SAP South street system reflects the appropriate access spacing on Grahams Ferry Road).

5. Curb extensions may be utilized within the Villebois Village area under the following basic principles for their placement and design:
 - A minimum of 20-foot face-of-curb to face-of-curb street width shall be provided at all Residential street intersections, even where curb extensions are located. In the Village Center (inside the Village Loop), the minimum curb-to-curb public street width should be 22 feet, in order to accommodate delivery and garbage truck movements.
 - Fire trucks, buses, and single-unit trucks (i.e., garbage trucks) shall be able to negotiate from Collector/Arterial streets without crossing the Collector/Arterial street centerline. Fire trucks shall be able to negotiate through Residential streets, although it is acceptable for them to cross the street centerline on Residential streets.
 - Passenger car turning movements shall be able to stay within the street centerline on all streets.
 - Bike lanes shall not be forced into vehicle travel lanes.

Placement of curb extensions shall be reviewed through the City's minor alteration process with Specific Area Plans.

6. Street and pathway alignments shall be demonstrated to be in compliance with Significant Resource Overlay Zone (SROZ) regulations with Specific Area Plans.
7. Pedestrian and bicycle connectivity shall be provided between public and private street termination points and adjacent trails/pathways at the discretion of the City Engineer.
8. Along Villebois Drive between Ravenna Loop and Barber Street is where the "bicycle boulevard" street section will be located:
 - 1) The on-street bicycle striping is omitted with proper signage at the beginning and ending of the removed section as required.
 - 2) The smooth asphalt street surface is replaced with a modified street texture providing the following:
 - a. 20-year minimum design life;
 - b. Adequate bicycle "ride" without resulting in an unsafe operating condition.

GLOSSARY

Glossary

Circulation Framework:

The system for pedestrian and vehicular movement including streets, alleys, lanes, walks and multi-use trails.

Community Elements Book:

A planning document prepared by the Master Planner in conjunction with a Specific Area Plan (SAP) that is used to establish the type and location of community elements within the SAP. Community elements include the following: lighting, street trees, site furnishings and tree protection standards.

Community Housing:

Property and related equipment that are used or could be used to house chronically mentally ill persons as defined and required by ORS 426.508.

Connectivity:

Physical connections between neighbors, within the village itself, and into other parts of the region and the world, that foster social interaction and facilitate ease of travel through a variety of transportation methods.

DATELUP:

The Dammasch Area Transportation-Efficient Land Use Plan dated January 31, 1997 is a conceptual master plan for the 520-acre site that is now the subject of the *Villebois Village Concept Plan*.

Design:

The conceptualization of the built environment in response to specific sets of human needs and desires.

Design Principles:

The fundamental concepts that support the objectives of the *Villebois Village Master Plan* and determine the intrinsic qualities of the built environment within the Village Zone. Design Principles are enacted through conformance with the Design Standards of the Village Zone.

Design Standards:

Criterion established for use in the initial design or construction of buildings to guide the selection and arrangement of common building elements to achieve a minimum level of quality and consistency in the finished product. Design Standards are applied through the Village Zone.

Development Standards:

Criterion established for initial planning of any change to improved or unimproved real estate that determines the relative size and arrangement of common building elements in order to achieve a certain level of quality and consistency in the built environment. Development Standards are applied through the Village Zone.

Diversity:

A vibrant choice of housing styles, types and levels of affordability, a healthy mixture of employment opportunities and offices, and a variety of available goods and services.

Environmental Sustainability:

Using, developing, and protecting natural resources at a rate and in a manner that enables people to meet their current needs while providing that future generations can meet their own needs.

Estate:

This land use accommodates large detached houses with private yards. Garages will be front-loaded or by alley, as per location.

Flex-Space:

Ground floor units of a multi-family or mixed-use building that can be converted to office/retail or residential uses.

Future Study Area:

The area of the former Living Enrichment Center. Future Study Area label replaced by land use plan and additional plan information provided with 2013 Master Plan Amendment.

Governor's Quality Development Objectives:

Signed into executive order December 1997 and amended August 2000, *Use of State Resources to Encourage the Development of Quality Communities*, articulates seven "quality development objectives" (QDOs) that serve to guide and coordinate state agency actions and investments in community development for increased livability and for efficient use of public resources.

Integrated Pest Management:

An ecologically based pest-control strategy that relies on natural mortality factors, such as natural enemies, weather, cultural control methods, and carefully applied doses of pesticides.

Large:

This land use accommodates large detached houses with large private yards. Located at the periphery of Villebois, these homes will often have front-loaded garages.

Little League Baseball/Youth Softball field:

This facility is designed with a 200-foot foul line length. This dimension will accommodate Little League Baseball as well as youth Softball (U12 through U18 league classifications). (Source: Eric Graves, Program Coordinator with Tualatin Hills Park and Recreation District)

Master Planner:

Villebois LLC; selected by the City of Wilsonville and the State of Oregon in accordance with ORS 426.508 to master plan the area prescribed in DATELUP.

Major Water Feature:

A water feature in the form of a fountain and/or basin (naturalistic or urban). Major water features differ from minor water features by their larger scale and have water present year-round. Examples include re-circulating pools, entry fountain features, swimming pools, and large scale play fountains.

Medium Detached:

This land use accommodates modestly sized detached houses with small private yards and alley parking access.

Minor Water Feature:

A water feature in the form of a small fountain or sculpted element functioning in an aesthetic and/or interactive form of water play. Minor water features may range from a continuous trickling of water to an intermittent/user generated flow evoking play. Examples may include: water generated from a hand pump or water cycling in a fountain feature.

Mixed-use Development:

Development characterized by buildings that combine more than one use; for example, commercial and residential.

Multi-Modal Transportation:

A circulation system that accommodates a wide range of user groups including bicycles, vehicles, pedestrians and buses.

Neighborhood Apartments:

This land use designation is intended to provide for-rent multi-family units in a neighborhood setting. Buildings will be mostly two or three stories and of a character compatible with detached homes. In designated locations, this land use provides for neighborhood commercial uses at ground level.

Neighborhood Center:

An area of commercial uses at or near the center of a neighborhood, not exceeding 3,500 SF to provide nearby residents with convenient access to goods and services. Neighborhood Centers may only be located within a Neighborhood Commons.

Neighborhood Commons:

A site at or near the center of a neighborhood for use by the local residents which includes a Neighborhood Center, a transit shelter and a tract of open public land. Meant to provide a social gathering place and a safe waiting place for transit riders.

Open Space:

Land that is not covered by buildings, paving, or other hard surfaces, unless such hard surfaces are part of an approved landscape plan.

ORS 426.508:

Oregon Revised Statute authorized the sale of F. H. Dammasch State Hospital including its fair market value, the redevelopment of the property and the reservation of property for community housing. Passed in 1999 by the Oregon legislature, the statute requires redevelopment of the property to be consistent with the DATELUP adopted concept plan.

Pattern Book:

An illustrative document that depicts the architectural character of a proposed development, submitted as proof of compliance with the Design Principles and Design Standards. A Pattern Book is prepared by the Master Planner in conjunction with a Specific Area Plan (SAP).

Plaza:

As located and described in the *Villebois Village Master Plan*, the plaza is a public space at the intersection of important streets set aside for civic purposes and commercial activity.

Power of Ten:

A concept originated by the Project For Public Spaces. This is a place-making concept that encourages the provision of at least ten different uses and activities within or near gathering places with the goal of promoting sociability and an active and thriving space.

Rainwater Management Systems:

Infrastructure and procedures for the collection, filtration, and conveyance of rainwater within the Villebois Village Master Plan area.

Residential-Village (R-V) Comprehensive Plan Designation:

The area within which the *Villebois Village Master Plan* applies.

Row House:

A form of Single Family Dwelling where fee-simple, for-sale multi-story units are arranged in an unbroken row with no side yards and with or without an accessory dwelling unit or building.

Significant Resource Overlay Zone (SROZ):

An overlay zone within the City of Wilsonville that is intended to implement the goals and policies of the City's Comprehensive Plan relating to natural resources, open space, environment, flood hazard and the Willamette River Greenway (see Section 4.139 of the City's Planning and Land Development Ordinance).

Specific Area Plan (SAP):

A series of detailed plans covering distinct portions of the *Villebois Village Master Plan* (VVMP) area. These plans provide a higher level of analysis and detail than the *Villebois Village Master Plan* within a specified area of the *Villebois Village Master Plan*.

Small Detached:

This land use accommodates small, detached houses with alley parking access. In some instances, houses may be arranged around a central yard or parking court.

Standard Detached:

This land use accommodates detached houses with private yards and alley parking access.

Stormwater/Water Quality/Rainwater Element (Features, Ponds and Swales):

A basin or swale that serves a functional purpose of conveying, detaining, and/or treating onsite stormwater and/or rainwater. Water quality/rainwater features typically function in conjunction with plant material. These are typically naturalistic water features that blend into the designed landscape and may function as an educational element on water quality. Stormwater features can function with or without a plant material component.

Sustainability:

Developing and protecting resources at a rate and in a manner that enables people to meet their current needs and also provides that future generations can meet their own needs. Sustainability requires simultaneously meeting environmental, economic and community needs.

Village Center:

An area located on the *Villebois Village Concept Plan* and *Villebois Village Master Plan*, characterized by the relative increased density of both residential and commercial uses. The Village Center occurs at the intersection of three neighborhoods and is the focal point of civic and commercial activity in Villebois.

Village (V) Zone:

The zoning district that is applied to areas designated Residential Village on the Wilsonville Comprehensive Plan map. The Village zone implements the Residential-Village designation and the *Villebois Village Master Plan*.

Villebois Village Concept Plan (VVCP):

A plan that depicts the general character of proposed land uses, transportation, natural resources, public facilities, and infrastructure strategies for Villebois. This plan, while not completely engineered, includes detail sufficient to illustrate the inherent features of the site and the probable development pattern for a community that will develop in successive stages or subdivisions. This plan replaced DATELUP as the conceptual plan for the plan area.

Villebois Village Master Plan (VVMP):

The document depicting the general organizational structure and concepts of the Residential-Village Comprehensive Plan designation, including but not limited to the form and location of public open spaces, types and alignment of the various thoroughfares, and land use types and locations. The Master Plan will serve as a basis for Village zone development standards.

LIST OF REFERENCE DOCUMENTS

City of Wilsonville Final Draft Wastewater Collection System Master Plan, June 2001.

City of Wilsonville Final Draft Wastewater Collection System Appendix, June 2001.

City of Wilsonville Parks & Recreation Master Plan, Final Report, December 1994.

City of Wilsonville Stormwater Master Plan, June 2001.

City of Wilsonville Transportation Systems Plan (TSP), April 17, 2003 Public Draft.

City of Wilsonville Water System Master Plan – Ordinance No. 531, Adopted January 24, 2001.

Creating Livable Streets: Street Design Guidelines for 2040, Metro, and June 2002.

Memorandum to Eldon Johansen, City of Wilsonville from Ransford S. McCourt, P.E., DKS Associates, April 6, 2004.

Villebois Village Master Plan Technical Appendix,

Appendix A: Capital Improvement List and Cost Estimate

Appendix B: DKS Memorandums dated:

February 28, 2003

January 6, 2003

April 6, 2004

June 15, 2005

August 7, 2013

Appendix C: Memorandum of Understanding between Villebois/City of Wilsonville and Metro, Metro Contract #926225

Appendix D: Bus Stop Exhibit

Appendix E: Memorandums regarding 100-year Flood Plan and Stormwater from HDR and inter-fluve

Appendix F: Parks Capacity Analysis Drawings

Appendix G: Parks PowerPoint Print-out

Appendix H: Parks Lighting Concept

Appendix I: Sanitary Lift Station for Future Study Area Requirements