

STAFF REPORT
CPA 19-01/ZC 19-01

DATE: March 15, 2019 for the March 26, 2019 Planning Commission Meeting

REQUEST: **CPA 19-01.** Comprehensive Plan Map Amendment to change the plan designation of the property from Single-Family Residential (R5) to Multi-family (R2.5) to allow for a future development of 30 multi-family units .

ZC 19-01. Zoning Map Amendment to change the zoning of the property from Single-Family Residential (R5) to Multi-family R2.5 to allow for a future development of 30 multi-family units.

APPLICANT: H&J Properties
P.O. Box 555
Banks, OR 97106
Ph: 503.324.5220

APPLICANT'S
REPRESENTATIVE: Greta Holmstrom
Ardor Consulting
Hillsboro, OR 97124
Ph: 360.721.5745
Email: gholmstrom@yahoo.com

PROPERTY: Tax Lot 00600, Tax Map 2N3W31BB. The Property is on NW Banks Road, approximately 400 feet east of the intersection of NW Banks Road and NW Main Street. The Property consists of approximately .98 acres.

ZONING: Single Family Residential R-5

APPLICABLE
CODE: Section 151.170-151.171 Application Procedures
Section 151.155-151.159 Comprehensive Plan Amendments and Zone Changes

1. EXECUTIVE SUMMARY

H&J Properties (“Applicant”) is requesting approval to amend the Banks Comprehensive Plan and zoning designation of the property from Single-Family Residential (R5) to Multi-family Residential (R2.5) to allow for future development of a 30 unit multi-family housing project. The Applicant’s narrative states that upon reclassification of the property, it anticipated that 30 multi-family residences will be developed and that this housing type is not readily available in Banks. Staff concurs.

This request for a plan amendment and zone change is tied to a future request to apply for Site Plan Review of a maximum 30 multi-family dwelling units on the subject site. Meaning, if this application is approved, the plan amendment and zone change **will be conditioned to allow for an application to be submitted for future development of a maximum of 30 multi-family dwelling units.** It should be noted (and the Applicant is aware) that land use permits (e.g., Site Plan Review) will be required prior to any development of the property for a maximum of 30 multi-family dwelling units. The 30 unit maximum correlates to the current Banks Development Moratorium as discussed in Section 5, below.

This application requests to only change the City’s Comprehensive Plan and Zoning maps; it is not an application to develop the property.

2. SITE DESCRIPTION

The property is on NW Banks Road, approximately 400 feet east of the intersection of NW Banks Road and NW Main Street. One single family residence exists on the lot, located near the NW Banks Road frontage.

The property is generally located in an area of mixed uses and shown on the map below. The site is surrounded by single family dwellings as well as a lumber mill. Directly west of the site is the historic downtown core of Banks, including retail, industrial, office and regional park uses.

The site is within the Banks Fire District, the Banks Public School District and the Washington County Sheriff's Department district. Clean Water Services is the sanitary sewer and storm conveyance provider for the area.

Figures 1 and 2: Site Location Maps, 42350 NW Banks Road





3. LAND USE REVIEW PROCESSES

The Banks Zoning Ordinance (“BZO”) 151.171 provides that the Planning Commission review and make a recommendation to the City Council on the proposed Plan Amendment and Zone Change. The Applicant shall apply for applicable land development permits if this map amendment is approved.

The Planning Commission’s review of the land use applications must focus on the relevant code criteria and outlined herein and follow the procedures for a quasi-judicial review under the City of Banks Development and Zoning Code Section 151.115 through 151.117. The Planning Commission may approve the application only if the proposal conforms to the approval criteria as outlined in this Staff Report or reasonable conditions of approval can be applied.

It is recommended that the Planning Commission recommend approval of File Nos. CPA 19-01 and ZC 19-01, with conditions, to the Banks City Council.

4. PROPOSED COMPREHENSIVE PLAN AMENDMENT AND ZONE CHANGE

The Applicant states that re-designation of the Property from single-family residential uses to multi-family residential uses is appropriate for several reasons. First, the property’s location is suitable for multi-family uses because it is centrally located near the downtown core. It is also located near existing public facilities which minimizes up-front development costs and the public cost of long term infrastructure maintenance. The Applicant further states that providing for multi-family housing near the downtown core, where there are retail, civic and employment opportunities located, will continue to support the “hub” of downtown Banks and provide a much needed, housing opportunity that currently does not exist. Staff concurs.

The City of Banks has a documented need of multi-family housing. The 2011 Urban Growth Boundary Expansion Study concluded that the City at that time was in need of 153 multi-family housing units to meet the population projections in year 2029. Since 2011, no new multi-family units have been added to the housing supply. Therefore there is a documented, defined need for multi-family units.

A more recent study titled the Banks Economic Development Roadmap/Competitive Analysis (2018 Leland) concluded that “more focus and attention should be placed on smaller multi-family units that can serve employees in the timber and retail industries, as well as retirees wanting a smaller home with little maintenance.” The Banks population is projected to grow at a faster rate than the historical average between now and 2025, at 3.3 percent annually. The projected 2037 year population is 2,908; at the time of writing this report the population is 1,908. (Source: Portland State University Population and Demographics 2017)

The Applicant provided a Traffic Impact Analysis (“TIA”) which considered the impacts of the site under a scenario of 30 new apartment units. This 30 unit number is consistent with the language in the Banks Moratorium Resolution 2018-19. The findings indicate that the surrounding street system is capable of handling a future build of 30 multi-family dwelling units on the property.

The City’s Transportation System Development Charges (SDC’s) are directly related to the volume of traffic generated by specific types of use. The SDC’s collected from future development of the site can be used to pay for improvements to projects included in the City’s Transportation System Plan.

This Application is analyzed based on a maximum of 30 units that can be developed, consistent with the language found in the Banks Development Moratorium (Resolution 2018-19). If approved, any future development on the site must be for 30 multi-family units only. A condition of approval will be added stating as such.

The Applicant has provided a preliminary concept plan of the site showing how it could be developed in the future. The conceptual development plan is non-binding; it shows how development of the site could occur. There is no design application proposed as part of this application. Future development proposals will be required to apply for Planning approval (e.g., Site Plan Review) to ensure compliance with the Banks Zoning Code, Public Works Design Standards and Clean Water Services Design and Construction Standards.

5. CITY OF BANKS DEVELOPMENT MORATORIUM (Resolution No. 2018-19)

Resolution 2018-19 declares a moratorium on new development in the City of Banks due to a documented shortage of municipal water supply. The City Council, based on professional engineering studies, found that the City's supply of potable water is limited and the City is nearing the planned capacity of its water supply and utility. Without further measures to conserve and increase the current municipal water system capacity, peak water demand in the City will soon exceed the City's water supply and system capacity during the times of year when the supply is most limited.

The City has undertaken several measures and projects at the time of writing this report to prevent water system loss and to increase supply capacity, and is planning others, to increase its water system capacity to accommodate additional connections. These measures include a water line replacement project for the City's water mains running down Sellers Road and Cedar Canyon Road, a comprehensive leak detection and repair program and the adoption of water conservation and curtailment measures. The water main replacement projects will take at least one to two years to complete and it is unclear how many, if any, additional system connections these measures, collectively or individually will produce. Staff refers the reader to additional language in the attached resolution and includes it as part of the record as an exhibit.

The City Council also recognized the importance of certain development types as critical for the City's economy and for affordable housing. As such, the City Council included an exception to the moratorium that directly applies to this application as follows:

b. Development applications for multi-family housing, including apartments, condominiums and multi-family affordable housing projects, that propose a minimum of 25 dwelling units, a maximum of 40 dwelling units, and incorporate and employ the water conservation measures in Banks Code of Ordinances Chapter 5.24. No more than three such qualifying development applications for multi-family housing shall be accepted, processed and approved during the pendency of this Development Moratorium, including any extensions thereof. In support of this exemption, the Council relies upon the portions of the City's Housing Needs Analysis, attached hereto as Exhibit B, which document a need for more affordable housing in the City. (Resolution 2018-19, Page 4 of 16.)

6. COMMENTS TO THE RECORD

a. DKS and Associates (City Traffic Engineer). DKS and Associates provided comments to the record in a letter dated March 20, 2019. Please refer to the comments attached to review the letter. Key findings were confirmed as outlined in the memo demonstrating that the proposed land use of 30 multi-family dwelling units can be adequately served by NW Banks Road without significantly impacting traffic safety or operations.

b. Kennedy/Jenks (City Engineer). Kennedy/Jenks provided comments to the record in a memorandum dated November 9, 2018 and are attached.

c. Washington County Transportation Department. Transportation planning staff responded that they do not comment on plan changes and will look forward to receiving a transmittal for a future development application.

d. Public Comments. Staff provided required public notice consistent with the BZO. One comment from the public was received (attached) and is addressed as follows:

1. Letter from Kendall Schoolmeester via email, received on March 18, 2019. This letter asks how the zone change to allow for 30 units will impact the Banks School District. Kendall states that “the classrooms are packed, most classes having at least 30 kids in them in the elementary school.” She also states that classes are larger in the High School. Kendall is expressing her concern about overcrowded classrooms.

Staff Response: Kendall S. asks a good question. Staff provides a copy of the land use submittals to the school district for review. No comments were received on this application. The school district has indicated in prior land use matters that they have sufficient capacity. Banks Elementary School has about 70 kids per grade, with a student ratio of 1 teacher for every 20 students. This ratio is considered low and allows for attendance rates to fluctuate while still maintaining a student’s quality of education.

Banks Middle School has an underutilized building, with empty classrooms. As a result, Banks Middle School is well positioned to cater to an increase in attendance that may result from an increase in Banks population.

Banks High School has experienced a decline in their overall student population with a decrease from roughly 420 students to a current student population of 375. As a result, Banks High School has a low student to teacher ratio and can cater to higher attendance levels.

Staff will reach out to the district and provide written evidence to the record for the March 26, 2019 meeting. In addition, when the UGB expansion work was completed in 2011, it was done in coordination with the Banks School District to ensure sufficient capacity.

Lastly, and probably most importantly for the Planning Commission to consider, State law (ORS 197.505 to 197.540) explicitly prohibits local government's ability to restrict development based on school capacity.

6. COMPLAINT WITH APPLICABLE CODE

The following City of Banks Development and Zoning Code criteria are applicable to the request and are shown in *italics* and **bold**. Staff findings follow each code provision in regular typeface. The findings, which are based on information submitted by the applicant, are preliminary. The final decision notice will contain any additional findings resulting from the Planning Commission deliberation, which may include responses to the public testimony and/or additional agency comments received by the close of the hearing.

The Applicant may amend his proposal through the public hearing process, and Staff may supplement this Staff Report. The findings and recommendations contained in this report may be modified based on factual information entered into the public hearing record.

Members of the public who have questions about the proposal or who would like to submit oral or written testimony must appear at the public hearing or provide written testimony before the close of the hearing. Testimony should respond directly to the applicable criteria.

7. PLAN AMENDMENT AND ZONE CHANGE

151.157 Comprehensive Plan and Zoning Amendment Criteria

(A) Quasi-judicial comprehensive plan and/or zoning amendment applications shall be approved if the following criteria have been met.

(B) The proposed change is consistent with and supportive of the Comprehensive Plan goals, objectives, and policies.

Finding: The Applicant states that Comprehensive Plan goals implicated by a plan and zone map amendment include Goal 2 - Land Use, Goal 10 - Housing, Goal 11 - Public Facilities and Services, and Goal 12 - Transportation. Other goals are not applicable because the City's compliance with those goals is not affected by a re-designation of the property from single-family to multi-family residential. Only goals and objectives that apply to the proposed plan amendment/zone change are addressed below. Staff concurs with the Applicant statement and finds this section met. In addition, Staff provides additional findings where needed to supplement the record.

Goal 1 – Citizen Involvement.

Finding: The City's acknowledged Comprehensive Plan and Municipal Code includes citizen involvement procedures with which the review of this application will comply. This process allows for citizens to communicate their input into the application review conducted by the City at public hearings or by submitting written comments. The City of Banks Planning Commission will review and comment on the proposed application on March 26, 2019 to make a recommendation to the City Council. The City Council will hold a hearing in April 2019. The City posted site notices consistent with code requirements. This process complies with the Goal.

Goal 2 - Land Use.

Objectives:

a. Land uses should be located to take advantage of existing public facility systems and physical features, and to minimize development costs.

Finding: Future multi-family units can rely on the existing streets, water, sewer, and utility connections that are already available in NW Banks Road. Increased density on the subject site encourages more efficient investment in infrastructure because it will allow for growth in an area of infrastructure already in place. Increased density in this location creates a walkable community, reducing the reliance on the automobile as a means of transportation because of the proximity to the downtown core. This in turn

improves air quality and reduces greenhouse gas emissions, as well as reduced street maintenance cost, due to potential reduced trip generation and driving reductions.

The Applicant is aware of the need to provide services to the site and that the provision of services will be the financial responsibility of the developer. The Applicant submitted a preliminary utility analysis and Staff has no objections with the preliminary findings. This section is met.

Regarding water supply, Staff provides a discussion in Section 5 of this Staff Report.

This section is met.

b. Land uses should be situated so as to achieve compatibility and to avoid conflicts between adjoining uses.

Finding: The subject site is located in an area with a variety of uses including retail, service, office, industrial, residential, and regional park facilities. The site is also located adjacent to the railroad and just north of a lumber mill. There is not one set of land uses to compare to achieve “compatibility” of the proposed use. The mix of uses is compatible with the Vision 2037 plan which calls for a vibrant downtown core in this part of Banks. Site development requirements in the BZO including setbacks, screening, and landscaping will further ensure that any future development on the site will be designed to mitigate any potential impacts to surrounding properties. This section is met.

d. Opportunities for a variety of land uses should be provided commensurate with population growth and demonstrated need.

Finding: The Applicant states that as the City of Banks has an unmet need of 153 multi-family units to meet the housing projections as identified in the 2011 UGB Study. Since that time, there have been no multi-family units constructed in Banks. There is unmet, demonstrated need still in existence. Staff concurs and finds this section is met.

Goal 10 - Housing.

Goal: To increase and improve the supply of housing commensurate with the community's needs.

Finding: The Applicant states that the proposed plan amendment/zone change will also be consistent with projected housing need. Staff concurs. The proposal would allow for more intense development than currently permitted under the existing R5 zoning.

As demonstrated by the table, taken from the City’s 2005 Housing and Residential Land Needs analysis, (Ord. 110.30) there is a need for 880 new dwelling units within the 2000-2024 planning period:

Template 2
Projected Future Housing Status
as of 2024

FA Future Population	FB Future Persons in Group Quarters	FC Future Persons per Household	FD Future Occupied Dwelling Units*	FE Current Total Dwelling Units	FF Dwelling Units Removed	FG New Dwelling Units Needed**
Estimated	Estimated	Estimated	(FA-FB)/FC	CF	Estimated	FD-FE+FF
3,739	0	2.75	1,360	490	10	880

* Number of non-Group Quarter Occupied Dwelling Units
 ** Excludes Group Quarter Dwelling Units

By increasing the number of dwelling units permitted on this site, the proposed amendment and zone change furthers the City’s goal of providing more housing. For this reason, the proposed plan amendment and zone change is consistent with Goal 10.

Objectives:

a. The City should evaluate proposals for new housing in terms of the impact of additional numbers of people on the natural environment, community services, utility support systems, and projected housing need.

Finding: This objective explains how the City is required to evaluate proposals of additional housing. Staff has evaluated the proposal for new housing consistent with this objective, throughout this report. Allowing the plan amendment and zone change on the subject site will meet the housing needs of Banks as well as encouraging housing in a location that has existing infrastructure, reducing the need to expand infrastructure to other locations. No impacts to the natural environment are anticipated from the proposed

map amendments; future development applications will review site specific environmental impacts. This section is met.

b. Housing should be developed in areas that reinforce and facilitate orderly and compatible community development.

Finding: The subject site has an existing residential designation. The change to a higher density designation will allow for housing in an area to take advantage of the existing street system and available utilities. This benefits the City because it reduces the need to extend City services elsewhere in the community. Providing for multi-family housing near the downtown core, where there are existing retail, civic and employment opportunities facilitates orderly development of an area with a mix of uses. Staff finds the location compatible for multi-family development for the reasons presented here. This section is met.

Policies:

4. Amendments to the comprehensive plan map and zoning map will be consistent with the City's housing needs projections.

Finding: As explained above, the City's adopted Housing and Residential Land Needs Analysis calls for 880 new dwelling units by 2024. Since the 2011 analysis, only 41 new residential lots have been developed. Staff finds this section met.

6. The City will ensure that adequate, buildable and serviceable land is zoned for all needed housing types.

Finding: The proposed plan amendment/zone change will help address an identified deficiency of multi-family zoned land. Staff concurs and finds this section is met.

Goal 11 - Public Facilities and Services.

Goal: To coordinate and arrange for the provision of public facilities and services in an efficient, orderly and timely manner.

Objectives:

b. New development should occur in areas where public utilities are available before reaching out into areas that are not served.

Finding: Public utilities are available along NW Banks Road. A statement is provided from the City Engineer regarding water service for this site. Staff finds this section is met.

e. Development of the City should occur in such a way as to facilitate the provision of police, fire protection, and other services.

Finding: Police, fire protection, and other city services are already available to serve the Property. As the property is located within the City Limits, the proposed plan amendment/zone change will not require an extension of such services outside of their current service areas. This section is met.

Goal 12: Transportation

Goal: *To develop and encourage a safe, convenient, and economic transportation system.*

Objectives:

b. Development should occur in such a manner as to encourage and facilitate pedestrian movements.

Finding: At the time of future development the sidewalk system and sidewalks will be provided along the NW Banks Road as required by the City's Transportation System Plan and Public Works Design Standards. This will provide for complete and safe pedestrian access from the site to the surrounding area.

Staff finds this section is met.

Policies:

1. The City will promote a balanced, safe, and efficient transportation system. In evaluating parts of the system, the City will support proposals which:

Protect the quality of neighborhoods and the community; and

Finding: The site is located on NW Banks Road, approximately 210' east of the intersection with NW Sellers Road. A traffic impact analysis (TIA) was completed by Global Transportation Engineering on December 5, 2018. This analysis demonstrates that the transportation system has adequate capacity to serve the anticipated development.

Therefore it is not anticipated to negatively impact the quality of the neighborhood or the community. Findings confirmed by the City's Traffic Engineer found that the proposed land use (specifically for the 30 multi-family units) can be adequately served by NW Banks Road without significantly impacting traffic safety or operations. Staff finds this section met.

Provide for adequate street capacity optimum efficiency and effectiveness.

Finding: As demonstrated by the enclosed TIA, that system is adequate to serve the proposed number of units. This section is met.

(C) The proposed change is compatible with the surrounding existing and planned land use pattern.

Finding: The Applicant states that the site is located within a few hundred feet of the downtown core. Providing a much-needed opportunity for multi-family housing near this existing hub that will continue to grow is compatible with the existing and planned land uses. This land use pattern includes a mix of commercial, industrial, single family and public facility uses. Staff concurs and finds this section is met.

(D) Public facilities (i.e. transportation system, water supply, sewer service, storm water disposal, and police and fire protection) are capable of supporting the uses permitted in the proposed zone.

Finding: The Applicant states that public facilities are available to serve the site as follows:

Streets. The TIA demonstrates that the transportation system has adequate capacity to serve the anticipated development. Pedestrian and cyclists will have access to downtown Banks and the regional trail system. NW Banks Road is a County facility. No objections were received from Washington County regarding the TIA.

Water Service. Water service to the site is described in the Kennedy Jenks Memo dated November 9, 2018, which outlines the 3% increase in water demand as a result of this application if approved. Staff incorporates the memo as findings in this report.

Sanitary Sewers. Sanitary sewer service is available in NW Banks road and future development will need to demonstrate compliance with Clean Water Services.

Stormwater Drainage. Stormwater services is provided by Clean Water Services. Future development will need to comply with Clean Water Services standards.

(E) The proposed change is consistent with the statewide planning goals.

Finding: The City’s Comprehensive Plan implements the statewide planning goals and was acknowledged by the Land Conservation and Development Commission. The City’s goals expressly mirror the Oregon Statewide Planning Goals in substance and are numbered identically. Consistency with the applicable goals of the Comprehensive Plan, is therefore sufficient to demonstrate consistency with the same applicable statewide planning goals. Thus, the Applicant addresses Goal 2 (Land Use Planning, Goal 10 (Housing), Goal 11 (Public Facilities and Services), and Goal 12 (Transportation) above.

(F) Amendments that affect transportation facilities. Except as provided in division (C), amendments to the comprehensive plan and land use regulations which significantly affect a transportation facility shall assure that allowed land uses are consistent with the function, capacity, and level of service of the facility identified in the Banks Transportation System Plan.

Finding: Pursuant to OAR 660-012-0060, a plan and land use regulation amendment “significantly affects a transportation facility” if it:

- (a) Changes the functional classification of an existing or planned transportation facility;
- (b) Changes the standards implementing a functional classification system;
- (c) Allows levels of development or land uses that would result in “types or levels of travel or access that are inconsistent with the functional classification” of a transportation facility;
- (d) Would reduce the performance standards of the facility below minimally acceptable levels identified in the transportation system plan (TSP); or
- (e) Would “[w]orsen the performance of an existing or planned transportation facility that is otherwise projected to perform below” the identified minimum performance standards.

The proposed plan amendment/zone change does not include a change to the functional classification of an existing or planned transportation system, or propose to change any street standards implementing a functional classification, it does not implicate (a) or (b),

above. The traffic analysis is based on a “reasonable worst case” scenario of 30 multi-family dwelling units, consistent with what is allowed by the current moratorium.

As explained therein, the existing street system is sufficient to accommodate the maximum-permitted 30 additional multi-family units and the proposal will not cause any intersections to drop below minimum levels of service. For these reasons, the proposal does not implicate (c)–(e) above, and will not “significantly affect” a transportation facility.

The City’s Traffic Engineer DKS and Associates reviewed the TIA. No objections are raised.

8. RECOMMENDATION

Based on the foregoing analysis and findings, Staff finds that the Planning Commission can find that the proposed Plan Amendment, and Zone Change can meet all applicable criteria. The Applications can be approved **as proposed** subject to the Applicant fulfilling the following conditions:

A. Conditions of Approval

1. This approval is conditioned to allow for a maximum number of 30 multi-family dwelling units, consistent with City of Banks Resolution 2018-19. There shall be no increase in the number of multi-family dwelling units at the time of development. If an increase is requested, the Applicant shall resubmit a modified plan amendment and zone change application demonstrating satisfaction of water capacity as outlined in the Resolution.

2. This approval shall automatically expire two (2) years from the date of this approval, unless a development application for 30 multi-family units has been submitted, development has commenced, an application for extension is filed, or this approval is revoked or invalidated.

PLANNING COMMISSION ACTION

After hearing the applicant's presentation and any public testimony, including any rebuttal, the Planning Commission will close the hearing and deliberate. The Commission has three options: Based on the relevant criteria, you may approve or deny the application, or approve it with modifications and/or conditions. The following motion is suggested:

"I move to recommend approval of CPA 19-01 and ZC 19-01 to the Banks City Council based on the findings and subject to the conditions of approval contained in the staff report [as amended]."

The staff report may be amended during the course of the hearing. A motion to approve should itemize any modified or additional conditions of approval.

Respectfully submitted this 18th day of March, 2019:

Stacey Goldstein, Contract Planner, City of Banks
Reviewed by Jolynn Becker, City Manager
Daniel Kearns, City Attorney

Attachments:

1. Comments to the record including:
 - DKS memo dated March 20, 2018
 - City Engineer memo dated November 9, 2019
 - Email from Washington County Transportation
 - Letter from the public
2. City of Banks Resolution No. 2018-19
3. Application Submittal from Ardor Consulting including narrative, application and TIA.
4. Planning Maps
5. City of Banks Housing Needs Analysis 2011 UGB Report (on file)

COMMENTS TO THE RECORD



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503.243.2500
dksassociates.com

MEMORANDUM

DATE: March 20, 2019
TO: Stacey Goldstein, City of Banks
FROM: Carl Springer, PE, PTP| DKS Associates

SUBJECT: Review of Traffic Impact Analysis for 42350 NW Banks Road

This memorandum summarizes our comments from the technical review of the above traffic impact analysis (TIA) study prepared by Global Transportation Engineering, dated 5 Dec 18.

Project Description

The applicant is proposing a higher density residential use (R 2.5) on the site than is permitted under current R 5 City zoning. Typically, a proposed zone change would require consideration of the reasonable worst case land use allowed under the new zoning to demonstrate compliance with state planning regulations, the Transportation Planning Rule (OAR 660-012-060). However, we understand that the City of Banks has established a policy by which no more than 30 dwelling units are allowed on this property. Since the TIA assumed 30 dwelling units in its analysis the worst case requirement is met. The site provides a single vehicular access point onto NW Banks Road, which is owned and operated by Washington County.

Key Findings and Recommendations

The TIA work scope was developed in coordination with City of Banks staff guidance, which identified the extent of the study and the type of impact analysis that would be required. In our review, we confirmed that the TIA report complied with the scoping requirements.

The TIA report findings are highlighted below along with relevant comments or actions to be considered through the project approval process:

1. The site access onto NW Banks Road will not generate enough turning traffic when this site is fully developed and occupied to meet warrant requirements for a westbound left-turn lane.

- Therefore, the existing single travel lane in each direction on NW Banks Road is sufficient to serve this future development
- 2. The sight distance available for vehicles exiting the driveway is sufficient to maneuver safely given the prevailing vehicle speeds on NW Banks Road.
 - The analysis used the observed speeds which were close to 40 MPH, significantly higher than the posted speed limit of 25 MPH.
 - Even with this higher speed, the minimum required site distance is available.
- 3. The access spacing to the nearest cross-street and driveway complies with the City's requirements
 - Therefore, the proposed driveway location is acceptable based on City standards
 - It is desirable that this driveway align with the existing driveway on the north side of NW Banks Road
- 4. The site will generate approximately 220 vehicle trip ends daily, with 14 to 17 occurring during peak hours. This level of traffic activity will not significantly impact operations at this location on NW Banks Road. The vehicle queues on-site while waiting to exit are expected to be no more than 3 vehicles during the busiest time of day.
 - Therefore, the proposed land use can be adequately served by this type of access without significantly impacting traffic safety or operations on the adjacent street.

Other Issues to be Considered

The TIA did not address a few specific issues that City staff may want to consider further in the review of this application.

- First, NW Banks Road is planned to be improved to urban standards within the city limits. Therefore, the frontage of this site should be required to dedicate any necessary right-of-way to accommodate the ultimate street width, and to construct the street improvements consistent with Washington County roadway standards.
- Second, given the speed issues on Banks Road, the City may coordinate with Washington County to consider possible tools to better manage vehicle speeds, such as driver speed feedback signs. The prevailing speed is around 40 MPH when it is posted for 25 MPH, which can reduce safety for all travel modes.

9 November 2018

Memorandum

To: Jolynn Becker, City Manager
 From: Rob Peacock, PE, City Engineer
 Subject: Estimate of Water Demand
 5-Star Builders Proposed 30-unit Affordable Housing Apartment Building
 K/J 0791015.00

The purpose of this memorandum is to provide an estimate of water demand and impact from the proposed 30-unit apartment building intended to provide affordable housing. A preapplication meeting on 23 May 2018 was held to discuss the proposed development inside the current City Limits.

Water Demand Estimate

The current system-wide water demand is estimated to be 142 gallons per person per day (gal/cap/day), including residential, commercial, industrial, irrigation, and water loss throughout the system. The proposed new development would not include commercial or industrial water uses and would not include water loss. The new development could be required to employ water conservation measures, include EPA Watersense (ultra-low flow) fixtures and drought tolerant landscaping. The water demand estimate below assumes water conservation measures will be required.

Description	Quantity
Number of Apartments	30 connections
Apartment Occupancy	3 persons
Per Capita Demand ⁽¹⁾	64 gal/person/day
Per-Connection Average Demand	192 gal/conn/day
Average Day Demand	5,760 gal/day
Maximum Day Demand⁽²⁾	13,250 gal/day
Maximum Month Demand⁽³⁾	8,830 gal/day
Peak Season Monthly Demand Estimate for 30 Units	269,376 gal/month
Current Peak Monthly Demand ⁽⁴⁾	7,953,402 gal/month
Current Peak Monthly Demand + 30 Units	8,222,778 gal/month
Increase in demand from 30 units	3.28% of total demand

- (1) Assumes EPA Watersense Fixtures and drought tolerant landscaping are used
- (2) MMD = 2.3 * ADD per Water Master Plan
- (3) MMD = MDD/1.5 per Water Master Plan
- (4) August 2018 Demand

Memorandum

Jolynn Becker, City Manager
9 November 2018
0791015.00
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The increase in demand from 30 new apartment units using EPA Watersense fixtures and drought tolerant landscaping is 5,760 gal/day on average day, and 8,830 gal/day for the maximum month. This represents an increase in demand of 4 to 6 gallons per minute or approximately 3% of the total City demand.

Conclusion

At the current number of connections, the City is anticipated to experience periods of curtailment during the peak demand season until the transmission line is replaced in approximately 2020 and some significant water losses have been eliminated. The proposed apartment development could serve as an example for low-water demand development and meet a critical affordable housing need within the City limits. The City should consider the multiple benefits of the proposed development and the timing of the water transmission project in consideration of approving the development application.

Jolynn Becker

From: Naomi Vogel <Naomi_Vogel@co.washington.or.us>
Sent: Thursday, March 14, 2019 10:01 PM
To: stacey@siegelplanning.com
Subject: RE: Request for Comments, City of Banks

Hi Stacey,

We generally don't comment on Zone/Comp Plan changes. I forwarded the application to Long Range Planning for their review but I wanted to confirm that this is not a land use approval for development. I had assumed it wasn't and had not planned on submitting comments until a land use application for development.

Please let me know if I'm incorrect and need to submit comments.

Thank you,

Naomi

-----Original Message-----

From: stacey@siegelplanning.com [mailto:stacey@siegelplanning.com]
Sent: Wednesday, March 06, 2019 2:23 PM
To: Naomi Vogel; ODOTR2PLANMGR@odot.state.or.us
Cc: rsj@dksassociates.com; RobertPeacock@kennedyjenks.com; Jolynn Becker
Subject: Request for Comments, City of Banks

Greetings.

Please find attached an application for a Comprehensive Plan Amendment and Zone Change for property located at 42350 NW Banks Road, Banks Oregon. A copy of the public notice is attached.

Please provide comments on the proposal on or before March 15, 2019.
A first hearing is scheduled for this matter on Tuesday, March 26, 2019.

Thank you.

Stacey

--
Stacey Goldstein
Senior Associate
Siegel Planning Services, LLC

cell 503-577-9779
stacey@siegelplanning.com

www.siegelplanning.com

Angie Lanter

From: Kendall Schoolmeester <schoolyette@gmail.com>
Sent: Friday, March 15, 2019 2:37 PM
To: Angie Lanter
Subject: Zoning change for 30 unit apartment building

Hello,

I am writing in regards to the zoning change to allow for the 30 unit apartment complex being considered in Banks.

My question and grave concern is if you have thought through the toll this will have on the schools? The classrooms are packed, most classes have at least 30 kids in them in the elementary school. Classes are larger in the High School. We have young children in very large classes where much of the time is spent on classroom control instead of learning. There is already the new subdivision going in with over 30 units.

With no changes to the schools capacity for students, how can you even consider introducing more students to already overcrowded classrooms?

Please consider the existing citizens of Banks needs before allowing this zoning change.

Thank you for your time,

Kendall Schoolmeester

CITY OF BANKS
RESOLUTION NO. 2018-19



Resolution 2018-19

A Resolution Declaring a Moratorium on New Development in the City of Banks Due to a Documented Shortage of Municipal Water Supply.

The Banks City Council adopts the following findings:

WHEREAS, the City of Banks operates a municipal water system and utility serving all homes and businesses within the City of Banks; and

WHEREAS, the City's Water Utility is established and operating under the rules and regulations codified in Chapter 5.01 (Water) of the Banks Code of Ordinances; and

WHEREAS, the City's supply of potable water is limited, and the City is nearing the planned capacity of its water supply and utility. Without further measures to conserve and increase the current municipal water system capacity, peak water demand in the City will soon exceed the City's water supply and system capacity during the times of year when the supply is most limited; and

WHEREAS, at a June 12, 2018 public workshop, the City Council received information from the City Engineer and the City's water system consultant about the current water system capacity relative to current demand and subsequently received a detailed memorandum from the City Engineer, dated August 7, 2018 that documents the seasonal fluctuations in water system capacity and demand; and

WHEREAS, the Engineer's August 7th report, attached hereto as Exhibit A, documents that the current system capacity during the summer high demand and low supply months (June through August) is equivalent to the current number of water system connections of 693 connections with no extra water system capacity remaining in an especially dry year; and

WHEREAS, Exhibit A also documents that the current system capacity during the winter low demand and high supply months (September through May) shows approximately 60 additional connections, or a total of 753 system connections are available during the wettest parts of the year; and

WHEREAS, the City has undertaken several measures and projects to prevent water system loss and to increase supply capacity, and is planning others, to increase its water system capacity to accommodate additional connections. These measures include a water line replacement for the City's water mains running down Sellers Road and Cedar Canyon Road, a comprehensive leak detection and repair program and the adoption of water conservation and curtailment measures. The water main replacement projects, however, will take at least one to two years to complete and it is not clear how many, if any, additional system connections these measures, collectively or individually, will produce; and

WHEREAS, until the City's measures for increasing water system capacity are implemented and generate additional water system capacity, the City desires to preserve what little system capacity remains in the water system; and

WHEREAS, the City is aware of several significant undeveloped and underdeveloped areas of the City that may be the subject of development proposals within the next year. If approved, these developments could significantly increase water system demand by creating new connections that would eliminate the few connections that currently exist and quickly exceed the City's estimated water system capacity, which would place the City in a critical water shortage situation; and

WHEREAS, such a critical water shortage would require drastic curtailment measures that would be detrimental to the entire city and cause significant public harm. The city's current development ordinances and land use regulations are not adequate to prevent or slow the submission of development proposals, nor do current regulations allow the City to reserve the current limited number of connections. Instead, state law requires the City to allocate the current limited capacity on a first come, first served basis as development applications are submitted and vest. Thus, the city's current land use regulations are not adequate to prevent irrevocable public harm from development proposals and the consumption of the last remaining water system capacity in the City; and

WHEREAS, the moratorium proposed herein is sufficiently limited to ensure that an adequate supply of needed housing types and the supply of commercial and industrial facilities within or in proximity to the city are not unreasonably restricted by the adoption of the moratorium. For example, the moratorium provides a specific exemption for high-density multi-family and affordable housing as well as industrial developments that meet certain low water use requirements; and

WHEREAS, alternative methods of achieving the objectives of the moratorium are unsatisfactory due to the State's vesting law and priority for development applications filed with the city; and

WHEREAS the public harm that would be caused by failure to adopt a development moratorium outweighs the adverse effects on other affected local governments, such as shifts in demand for housing or economic development, public facilities and services and buildable lands, and the overall impact of the moratorium on population distribution; and

WHEREAS, sufficient resources are available to complete the development of needed interim or permanent changes in plans, regulations or procedures within the period of effectiveness of the moratorium; and

WHEREAS, the City's housing and economic development needs will be accommodated as much as possible in the formulation of conservation and leak repair programs that are intended to create additional water system capacity within one or two years of the date of their adoption.

WHEREAS, the industrial developments with certain limitations and with low water demand are an important component of the Banks' economy and are worthy of an exemption from the Development Moratorium declared herein; and

WHEREAS, the City's recently completed and adopted Housing Needs Analysis documents an unmet need for affordable housing options within the City. The Council specifically finds that multi-family apartment and condominium housing options are less expensive and more affordable than detached single-family housing, help address the identified need for more affordable housing, and for those reasons are worthy of an exemption from the Development Moratorium declared herein; and

WHEREAS, ORS 197.505 to 197.540 authorize the City to declare and impose a moratorium on new development and water system connections to prevent the exceedance of the City's water system capacity, an anticipated critical water shortage situation, and the significant public harm that would occur if the last few remaining water system connections were allocated and the City's water system lost its capacity and ability to serve basic and essential private and public functions; and

WHEREAS, at its regular meeting of December 11, 2018, the City Council convened a duly noticed public hearing to consider a development moratorium as a means of preventing the exceedance of the City's water system capacity and to prevent a critical water shortage situation, at which time the City Council accepted public testimony and comment on the proposed moratorium; and

WHEREAS, the City provided notice to the Oregon Department of Land Conservation and Development at least 45 days prior to its December 11, 2018 hearing where the Council accepted public testimony on this proposed development moratorium.

NOW THEREFORE, based on the foregoing Findings, the Banks City Council resolves as follows:

1. **Development Moratorium Declared.** Pursuant to the authority of ORS 197.505 to 197.540 and based upon the Engineer's August 7, 2018 report, attached hereto as Exhibit A, the City Council hereby declares a Moratorium on new development and new water system connections whereby, notwithstanding the City's adopted development regulations and procedures, the City shall not accept, process or approve any application for new development that entail one or more new water system connections.

2. **Exceptions to the Moratorium.** Notwithstanding the foregoing development moratorium, proposals for the following development types are deemed to be critical to the City's economy and to meeting the City's need for affordable housing shall be exempt from this development moratorium:
 - a. Any land use application for development that was submitted prior to the effective date of this moratorium.

 - b. Development applications for multi-family housing, including apartments, condominiums and multi-family affordable housing projects, that propose a minimum of 25 dwelling units, a maximum of 40 dwelling units, and incorporate and employ the water conservation measures in Banks Code of Ordinances Chapter 5.24. No more than three such qualifying development applications for multi-family housing shall be accepted, processed and approved during the pendency of this Development Moratorium, including any extensions thereof. In support of this exemption, the Council relies upon the portions of the City's Housing Needs Analysis, attached hereto as Exhibit B, which document a need for more affordable housing in the City.

 - c. Development applications for industrial uses on industrial or mixed-use zoned land that proposes to use no more than 5,000 gallons per day, and incorporate and employ the water conservation measures in Banks Code of Ordinances Chapter 5.24.

 - d. Any development that can provide a non-municipal source of water of sufficient quality to serve the new water demand created by the proposed development may submit and the city shall accept a land use application for purposes of verifying the use of the developer's water source for municipal purposes and verifying that the quantity of the developer's water source is sufficient to supply at least 75% of the water demand created by the proposed development. If these facts can be verified, the city may proceed to process and approve such a development. If these facts cannot be verified, the City shall suspend and may terminate or deny the application due to lack of sufficient water to serve the demand created by the proposed development.

3. **Adoption of a Water System Correction Program.** Within 60 days of the adoption of this Moratorium, the City Engineer, with the assistance of other city staff, shall prepare and present to the Council for adoption a Correction Program to address and resolve the identified water system capacity problem.

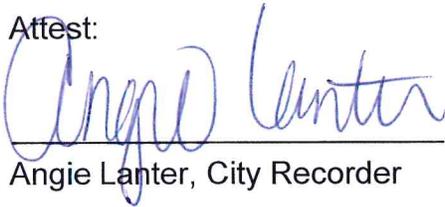
4. **Moratorium Duration.** This Moratorium shall remain in effect for a period of 6 months following the date on which a Correction Program is adopted and may be renewed for successive 6-month periods as needed to prevent any exceedance of the City's water system capacity until such time as the City's Correction Program has increased water system capacity.

ADOPTED, APPROVED AND EFFECTIVE this 11th day of December 2018.



Peter C. Edison, Mayor

Attest:



Angie Lanter, City Recorder

EXHIBIT A

Kennedy/Jenks Consultants

7 August 2018

Memorandum

To: Jolynn Becker, City Administrator
From: Robert Peacock, PE, City Engineer
Benjamin Bosse, PE
Subject: City of Banks
Water Inventory Analysis
K/J 0791015.00

Executive Summary

Kennedy/Jenks Consultants has prepared this Water Inventory Analysis in response to questions posed during the 12 June 2018 Council Workshop regarding potable water supply relative to demand, and the number of additional connections that the system can support. Table 1 summarizes the current and projected water demands and supply capacities.

Table 1 Water Supply and Demand Summary

Parameter	Average Day Demand, Current / Post-Pipeline Replacement ^(a)							
	Dec - Feb		Mar - May		Jun - Aug		Sep - Nov	
	Current	Post	Current	Post	Current	Post	Current	Post
Supply								
Gallons per day ^(b)	377,280	417,909	377,280	417,113	348,480	394,561	377,280	418,530
No. of Connections ^(c)	753	834	753	833	696	788	753	835
Demand								
Gallons per day ^(b)	201,744		217,725		321,707		224,398	
No. of Connections	693		693		693		693	

Notes:

- (a) Transmission pipeline replacement is assumed to reduce water losses between the North Star reservoir and Carsten storage tanks by 90% of current loss.
- (b) Based on observed supply available at the Behrman Wells and Green Mountain Springs during peak water use months and water curtailments periods.
- (c) Assumes a density of 3 persons per connection based on current population and number of connections.
- (d) Average daily demand for peak water use months of June, July, and August

In the peak demand season of June, July, and August, under average conditions, and with current system losses, the water system has capacity to serve approximately 696 connections. The system currently has 693 connections and is operating very close to capacity during the summer months. For the remainder of the year, during the months of September through May, the water system has capacity to serve approximately 753 connections. Replacement of the water transmission pipeline is anticipated to reduce water loss from leaks and add capacity to serve an additional 92 connections outside of the peak season.

Memorandum

Jolynn Becker, City Administrator
 7 August 2018
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During periods of hot weather in 2014, 2015, and 2018, demand exceeded supply, resulting in curtailments. Replacement of the water transmission pipeline is anticipated to add capacity to serve an estimated 82 additional connections under average peak season conditions.

Maximum Day Demand (MDD) is approximately two times the average demand during this period, thus, the supply is adequate for approximately 350 connections for MDD.

Historical Water Demand and Supply

Water use records for the period March 2015 through May 2018 were reviewed to determine current average daily demand (ADD) in terms of gallons per day per connection. Values include metered consumption as well as calculated losses within the distribution system. Water demand on a monthly basis is presented in Figure 1. A summary of water demand data is presented as Table 2.

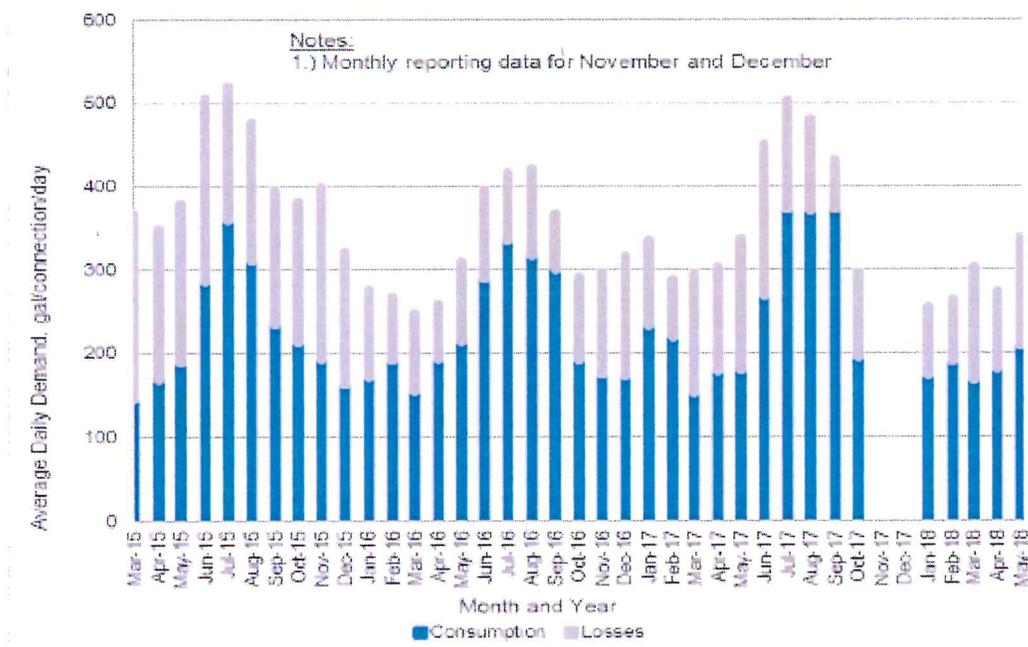


Figure 1: Historical Water Demand

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Memorandum

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7 August 2018
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Page 4

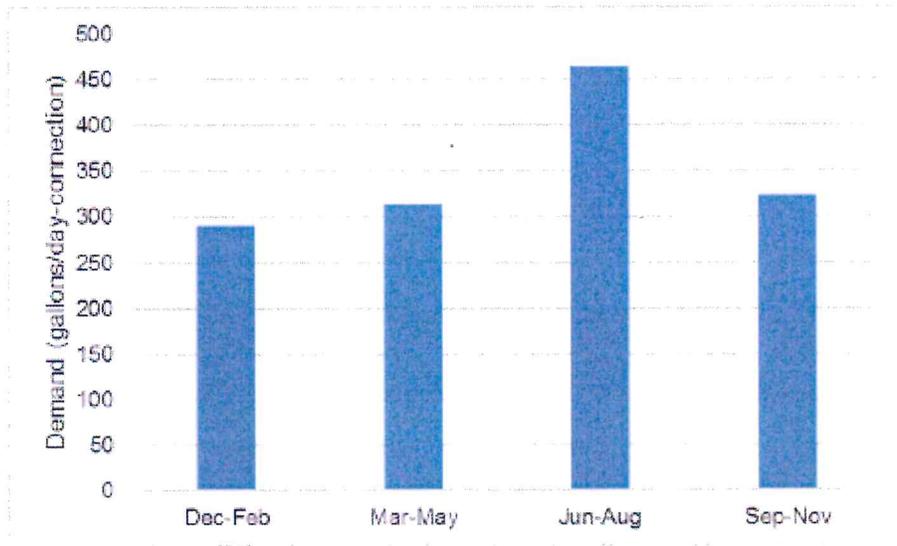


Figure 2: Seasonal Average Water Demand

The summer months pose a significantly greater demand than the other seasons and will be the focus of the analysis in this memorandum.

Projected Demand

Previous water demand projections were made for multiple development patterns (Farallon, 2014) with an estimated ADD per connection of 585 gallons per day (gpd). The City's water audit and leak repair program implemented from 2014 through 2016 reduced water losses resulting in approximately 121 gpd per connection during peak demand period, or approximately 60 gallons per minute. The analysis provided in this memorandum revises projections based on an observed Effective ADD per connection of 464 gpd during peak demand periods from 2015 through 2018.

Demand is expected to increase with time, as several developments currently in the preapplication and predevelopment stage will add connections. Long-term growth projections were made for a gradual growth scenario and a rapid growth scenario. Buildout of the available land is projected within the planning window discussed in this analysis (20 years). Figure 3

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 Water Inventory Analysis
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serve the new connections in 2020 as they come online with no spare capacity. Under the rapid development scenario, the demand from new connections exceeds supply within the first year. Figure 4 depicts a 5-year development scenario and includes supply capacities for the months of June through August and September through May. The scenario is based on development preapplications received by the City and current development under construction.

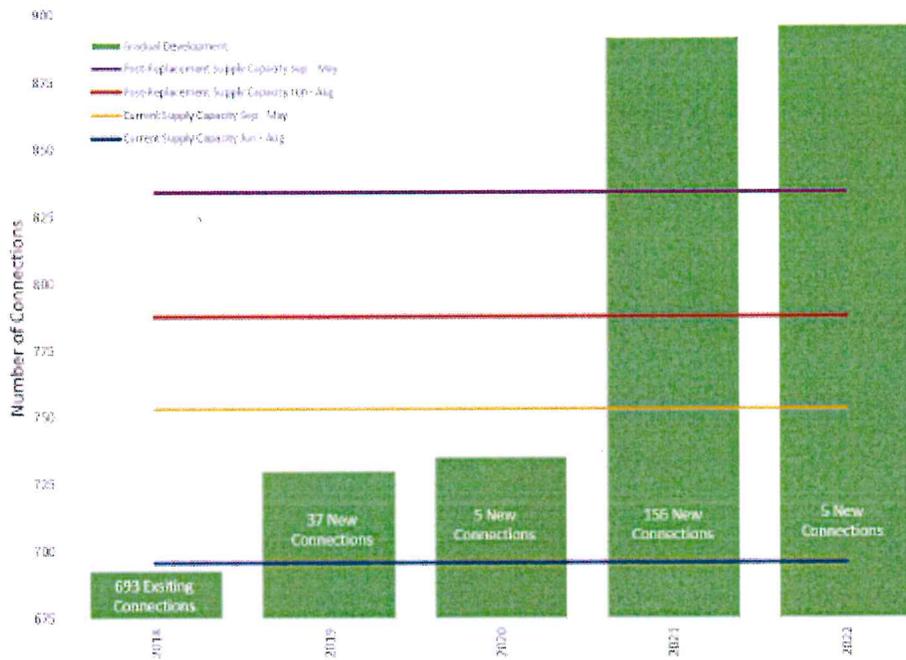


Figure 4: Gradual 5-Year Development Scenario

Figure 4 illustrates that 37 new connections expected in 2019 in Arbor Village are projected to exceed the average summer water supply capacity by approximately 34 connections. The expected impact from the new connections will be an increased frequency and severity of peak water demand events during periods of hot weather. In 2021, when 156 new connections could

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Jolynn Becker, City Administrator
 7 August 2018
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curtailment over summer seasons in 2014, 2015, and 2018. Figure 5 shows a significant deficit relative to MDD.

Water Supply

The historic production of water from the slow sand filter plant (SSFP) and wells are summarized in Table 3.

Table 3: Historic Water Production

Parameter	Jun – Aug 2015-2018	Sept – May 2015-2018
SSFP Production, gpd	168,480	149,760
SSFP Reported Design Capacity, gpd	172,800	172,800
Behrman Wells Average Production, gpd	152,640	69,120
Historic Well Production, gpd	312,480 ⁽¹⁾	155,520

(1) Production from August 2015

While the historic production appears to be greater in the summer, the available supply is generally greater in winter due to recharge of the springs during rainy season. The pumping capacity of Behrman Well No. 2 is 540,000 gallons per day; however, extended periods of pumping at this rate appears to be unsustainable, as significant drawdown of the groundwater table has been observed.

Green Mountain Springs Supply Capacity

For the period of record, water production at the SSFP operated at or above the reported design capacity of the filters during summer, however, the capacity of the springs has been observed to drop to 129,600 gpd in late summer just prior to beginning of the rainy season. We have assumed this is the capacity of the Green Mountain Springs during the peak demand season.

Behrman Well Supply Capacity

Behrman Well production is observed to increase significantly by extending the pumping duration during the peak season months to accommodate additional demand. Although the wells have been observed meet peak day demand presented in Table 3, the capacity values do not take into consideration the long term lowering of water level in the aquifer. For this reason, the well production rates are assumed to better represent the actual supply capacity. We selected the average flowrate during August 2015 of 312,480 gpd to represent the capacity of the wells during the peak demand season. It should be noted; this flowrate may not be sustainable for long term operation. As additional demand is placed on the wells to provide

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Jolynn Becker, City Administrator

7 August 2018

Water Inventory Analysis

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water, the available water in the aquifer may be drawn down and long-term capacity could be reduced.

Additional Supply Capacity

The Banks-Green Mountain Aquifer Storage and Recovery Feasibility Study (CwM-H2O, May 2018) evaluated the feasibility of "banking" unused water from the springs that could be diverted under the City's water right. The study determined a supply deficit will occur prior to the City's buildout, thus, additional supply will be necessary. The study proposes the City acquire additional water sources in phases. The first phase will include acquisition of a well and water right permit for use as a municipal water supply.

Additional Storage Capacity

The MDD is more than twice the current storage, and demand in the range of the MDD is typically observed for 3 to 10 days in a row. Thus, storage required to manage supply required for a 10-day MDD event would be approximately 10 times the existing storage capacity.

Conclusions

Review of water supply and projected demand indicates that the system is currently operating at capacity under average summer conditions, and additional connections are likely to result in ADD exceeding supply. MDD exceeded reliable supply for several days in 2014, 2015, and 2018 resulting in Stage 1 (voluntary) curtailment of water use. Additional connections will likely extend periods of curtailment during periods of high demand and may cause the City to declare more severe curtailment stages. If the City wishes to avoid future curtailment actions, the recommendations in the subsequent section provides several steps to improve water supply availability.

Although the supply limitation associated with the Behrman Wells is significant, the City is also losing approximately 50,000 gallons per day, or approximately 30% of supply produced at the SSFP, via the Sellers Road Transmission Line leaks. The Sellers Road Transmission Line is expected to be replaced by 2020 and is estimated to reduce losses equivalent to the water required for approximately 92 connections.

Recommendations

For the City's long-term water supply needs, we recommend pursuing the feasibility options recommended in the *Banks-Green Mountain Aquifer Storage and Recovery Feasibility Study* prepared by CwM-H2O, May 2018. In addition, we recommend the City pursue the Capital Improvement Projects currently planned and underway.

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Development Moratorium

The City can implement a development moratorium until the impacts of the transmission line repair can be evaluated. The objective of a moratorium would be to preserve the limited remaining water system capacity while the city remedies the problem. The City Attorney will facilitate the City Council's development of the ordinance in accordance with Oregon Revised Statute 197.505 through 197.540. Under the statute, the City must:

- Provide required notices to the Department of Land Conservation and Development
- Make written findings justifying the need for a moratorium
- Set a specific duration for the moratorium
- Adopt a program for correcting the issue causing the moratorium
- Demonstrate reasonable progress is being made to alleviate the problem giving rise to the moratorium

The moratorium can be effective up to 6 months and can be extended a total 3 additional periods up to 6 months duration.

**APPLICATION SUBMITTAL
FROM ARDOR CONSULTING
INCLUDING: NARRATIVE, APPLICATION AND TIA.**

LAND USE APPLICATION



APPLICATION FOR:

Permits

- Fence Permit
- Sign Permit
- Mechanical Permit

Land Division

- Subdivision
- Partition
- Tentative Plat

Zoning Check Review

Site Plan Review

Other: _____

Comprehensive Plan Amendment

- Text
- Map

Property Line Adjustment

Conditional Use

Zoning Ordinance Amendment

- Text
- Map

Final Plat

Variance

Applicant:

Name Greta Holmstrom / Ardor Consulting
 Address 3296 NE 13th Pl
 City Hillsboro
 State OR Zip 97124
 Phone 360-721-5745
 Fax _____
 Email gholmstrom@yahoo.com

Property Description:

Site Address 42350 NW Banks Rd
 Map & Tax Lot # 2N331BB00600
 (Please attach legal description)
 Total Acres or Square Feet: 0.98
 Acres 0.98 Sq. Feet _____

Property Owner:

Name H & J Properties
 Address PO BOX 555
 City Banks
 State OR Zip 97106
 Phone 503-324-5220
 Fax _____
 Email _____

Property Use Description:

Existing Land Use single family residential
 Existing Zoning R-5
 Proposed Zoning (if applicable) R-2.5
 Proposed Use multi family residential

Additional Information:

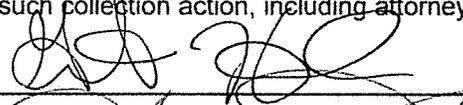
In order to expedite and complete the processing of this application, the Planning Division requires that all pertinent material required for review be submitted at the time application is made. If the application is found to be incomplete, review and processing of the request will not begin until the application is made complete. The submittal requirements relative to this application may be obtained from the specific sections of the Zoning or Land Division Ordinances pertaining to this application and from Planning Division staff. Pre-application conferences with Planning Division staff are encouraged. If there are any questions as to submittal requirements, contact the Planning Division prior to formal submission of the application. In submitting this application, the applicant should be prepared to give evidence and information which will justify the request. *The filing fee must be paid at the time of submission. This fee in no way assures approval of the application and is non-refundable.*

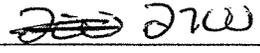
I certify that the statements made in this application are complete and true to the best of my knowledge. I understand that any false statements may result in denial of this application.

I agree to pay the actual administrative, professional, personnel and material costs incurred by the City for expenses, staff time and contract consultants to review and process my land use application, including the cost of public notices and the actual professional service costs of the City's contract consultants, such as the City Planner, City Engineer and City Attorney as may be necessary for to review my application. The application fees that I pay will be used as a deposit for these costs. When the application process is complete, the City will reimburse any over-payment, or I will be responsible for and hereby agree to pay any under-payment.

I further understand and acknowledge that full payment of the City's actual review costs pursuant to this Agreement is a prerequisite to the City's issuance or approval of any permits. The City shall not be under any obligation to take final action on my application until all amounts that have been billed to me are paid in full. I, by signing this Agreement, specifically waive the 120-day deadline for the City's final action on the land use application, as provided by ORS 227.178, due to any delay caused by my failure to pay any bills presented to me under this Agreement.

I hereby agree to pay the bills presented by the City for the City's actual costs incurred to review and process my application. I shall pay these bills within 30 days of presentment, and any amounts not so paid within 30 days shall accrue interest at the rate of 9% per annum from the date of presentment until paid. In any action the City may bring to collect fees due and billed under to this Agreement, including litigation and any appeal there from, the prevailing party shall be entitled to reimbursement by the losing party for all costs reasonably incurred as part of any such collection action, including attorney fees, service costs, and fees and costs on appeal.

Applicants Signature  Date 12/10/18
Property Owner's Signature  Date 5-24-18

For Office Use:			
Received by	<u></u>	Date	<u>12-11-18</u>
Fee Paid	<u></u>	Date	<u>12-11-18</u>
		Receipt Number	_____
		Application Number	_____
		File Number	_____

Banks Apartments

Comprehensive Plan and
Zoning Amendment



Supporting Materials

Signed Application

Narrative

Traffic Memorandum

Concept Site Plan

Legal Description and Title Report

Mailing Labels

Project Overview

The applicant, H&J Properties LLC, amend the Comprehensive Plan and Zoning classification for a property located at 42350 NW Banks Road to allow for future multi-family residential development. The property is presently classified in the Comprehensive Plan as Low Density Single Family Residential and zoned as R-5. The applicant proposes to classify the property as Multi-Family Residential with a zoning designation of R-2.5.

Upon reclassification and rezoning of the property, it is anticipated that 30 multi-family residences will be developed. This housing type is not readily available presently.

As shown in the following response to approval criteria, all requirements for making this amendment are met.

Approval Criteria

151.157 COMPREHENSIVE PLAN AND ZONING AMENDMENT

- A. Quasi-judicial comprehensive plan and/or zoning amendment applications shall be approved if the following approval criteria have been met.*
- B. The proposed change is consistent with and supportive of the Comprehensive Plan goals,*

RESPONSE: Several Goals from the Comprehensive Plan apply to the requested change. Specifically:

Goal 2 - Land Use “To provide a process and basis for decisions and actions related to the existing and future uses of land, and to insure the orderly development of the City of Banks”.

Goal 9 – Economics “To provide for the economic diversification and stability of the area.”

Goal 10 – Housing “To increase and improve the supply of housing commensurate with the community’s needs.”

Goal for Public Facilities and Services “To coordinate and arrange for the provision of public facilities and services in an efficient, orderly and timely manner.”

Goal for Urbanization “To provide for the orderly and timely conversion of rural land to urban use.

The proposal is consistent with and supportive of these goals in many ways.

The property is centrally located near the downtown core, near existing public facilities, minimizing up-front development costs and the public cost of long term infrastructure maintenance. Providing for multi-family housing near the downtown core, where there are retail, civic, and employment opportunities is compatible with existing and anticipated development.

The area just to the northwest of the property has been identified and developed as a regional trail gateway, enhancing the community identity as a trailhead gateway identified in the Vision 2037 planning process finalized in 2017. Providing multi-family housing within walking distance of this gateway will allow more residents to take advantage of this opportunity and experience.

As identified in the 2011 update to the Urban Growth Boundary, the City of Banks has a shortage of multi-family housing. At the time of the update, 40 5+ dwelling multi-family units were present, with 153 needed to meet the population projections in 2029. This lack of multi-family housing units limits housing choice. Providing the opportunity for additional multi-family housing will serve a demonstrated need. This will allow young families, senior citizens wanting to age in-place or relocate to be near family, and single working professionals, amongst others, another option when looking for housing.

C. The proposed change is compatible with the surrounding existing and planned land use pattern.

RESPONSE: The site is located within a few hundred feet of the downtown core. Providing a much-needed opportunity for multi-family housing near this existing hub that will continue to grow is compatible with the existing and planned land use pattern. This pattern includes a mix of commercial, industrial, single family and public facility uses. The Urban Land Institute’s 2007 publication “Ten Principles for Developing Successful Town Centers” lists “Integrate Multiple Uses” as one of the success factors. Also, in 2016 the United States Environmental Protection Agency’s publication “Framework for Creating a Smart Growth Strategy: A Tool for Small Cities and Towns included a suggested policy “Ensure a wide range of housing types that are affordable to different levels of income.”

D. Public facilities (i.e. transportation system, water supply, sewer service, storm water disposal and police and fire protection) are capable of supporting the uses permitted in the proposed zone.

RESPONSE: The site is located on NW Banks Road, approximately 210' east of its intersection with NW Sellers Road. A traffic analysis was completed by Global Transportation Engineering on December 5, 2018. This analysis shows that the transportation system has adequate capacity to serve the anticipated development. Pedestrians and bicyclists will have easy access to the downtown core, as well as the regional trail system.

Water supply is an important consideration in Banks. However, multi-family housing units use significantly less water than single family housing units. A 2018 study by The Water Research Foundation looking at five cities across the country showed multi-family units to be up to 200% more efficient than single-family homes.

http://www.waterrf.org/resources/webcasts/Lists/PublicWebcasts/Attachments/103/020118Webcast_FINAL.pdf

Projected water usage is based on a variety of factors, including the number of plumbing fixtures in the home, number of occupants and outdoor irrigation needs. All of these factors will be less with multi-family housing than they would be with single family housing. Providing for multi-family development will improve the efficiency of the residences served by City water.

Additionally, under the current zoning, the site could be developed with eight single family residences, each with an accessory dwelling unit, for a total of 16 single family residences. The applicant is proposing 30 multi-family residences upon approval of the requested comprehensive plan and zoning amendment. With multi-family residences having the potential for 200% efficiency compared to single family residences, development of the site with multi-family residences can be more efficient than development with single family residences.

Sanitary sewer and storm water disposal infrastructure are both available along or near the project frontage. These services will be utilized for future multi-family housing. The Oregon State Department of Environmental Quality recognizes that multi-family dwellings produce less sanitary sewer effluent than single-family dwellings. For purposes of designing septic systems, all multi-family dwellings units are assigned 300 gallons per day. Single family dwellings are assigned 300 gallons per day plus 75 gallons per each bedroom over two. It is likely that the proposed apartments will be no more than two bedrooms, whereas single family development of the site could take any form, likely four or more bedrooms for each unit along with the potential for accessory dwelling units. Multi-family dwellings will provide for an efficient use of existing services.

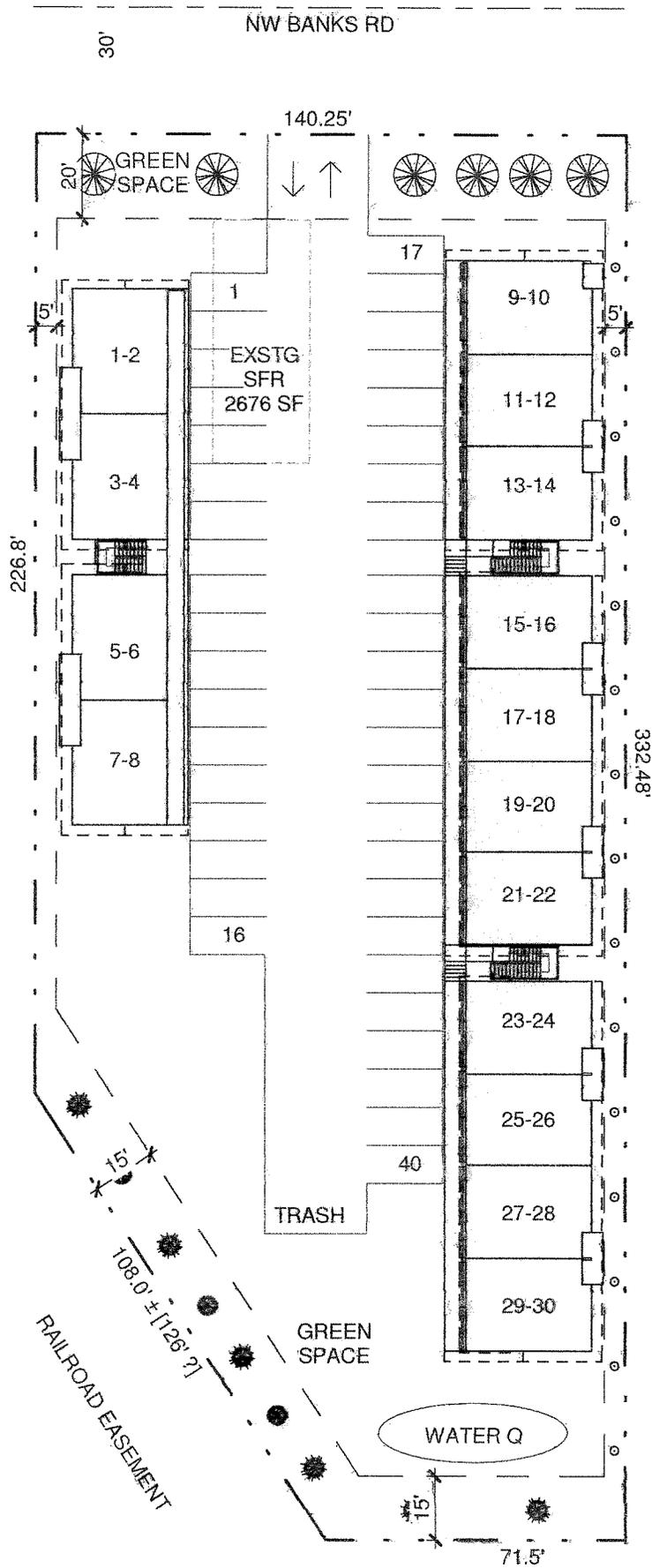
Police and fire protection are both available from the City of Banks. Providing for infill development within existing service boundaries will reduce strain on these services by not requiring them to provide additional response in outlying areas.

E. The proposed change is consistent with the statewide planning goals.

RESPONSE: Goal 10 of Oregon's Statewide Planning Goals is specifically related to housing. This goal requires each city to plan for and accommodate needed housing types. There is a known shortage of multi-family housing in the city of Banks, one significant reason for this is there is no land available that is classified and zoned for that type of development. Providing for this requested amendment will help the city to better meet the intent of the statewide planning goals.

Conclusion

The proposed development meets all review criteria established by City of Banks. Therefore, approval of the application is requested.



22'-6"x30'
UNITS
(TYP)

42350 NW Banks Rd
Banks, OR 97106



MEMORANDUM

DATE: December 5, 2018
TO: Greta Holmstrom, Ardor Consulting, LLC
FROM: Monica Leal, PE
Aman Woldetinsae

SUBJECT: 42350 NW Banks Road Traffic Analysis P18-140-000

This memorandum summarizes the traffic impact analysis prepared for the proposed 42350 NW Banks Road Multi-Family Development in the City of Banks, Oregon. The purpose of this analysis is to identify potential impacts due to the proposed development and identify measures, if necessary, to mitigate those impacts. Based on direction from the City of Banks, the new development does not trigger a full traffic impact analysis. However, it requires an evaluation of the proposed site access location, sight distance, and turning movements needs to adequacy serve the proposed development. This memorandum includes the following:

- Project Description
- Inventory and Existing Conditions
- Traffic Data Analysis
- Left Turn Lane Warrant Analysis
- Queue Analysis
- Sight Distance Evaluation
- Access Spacing
- Results and Recommendations

PROJECT DESCRIPTION

The proposed 20,250 square-foot development will be located on the south side of NW Banks Road, just east of NW Sellers Road. The existing house will be demolished and replaced with 30 new apartment units and 40 parking spaces. The proposed site access will be provided along NW Banks Road approximately 210¹ feet east of the intersection of NW Banks Road and NW Sellers Road. The site vicinity map is shown in Figure 1 and the proposed site plan is presented in Figure 2. Construction of the planned development is estimated to be completed in 2020.

The land use being considered requires a change in the site's zoning, from Single-Family Residential (R5) to Multi-Family Residential (R2.5). The number of proposed units was based on a maximum lot coverage of 50% and a maximum building height of 50 feet. The impacts of site were evaluated considering the development of 30 new apartment units.

¹ Measured from the intersection centerline to the center of the proposed site access.

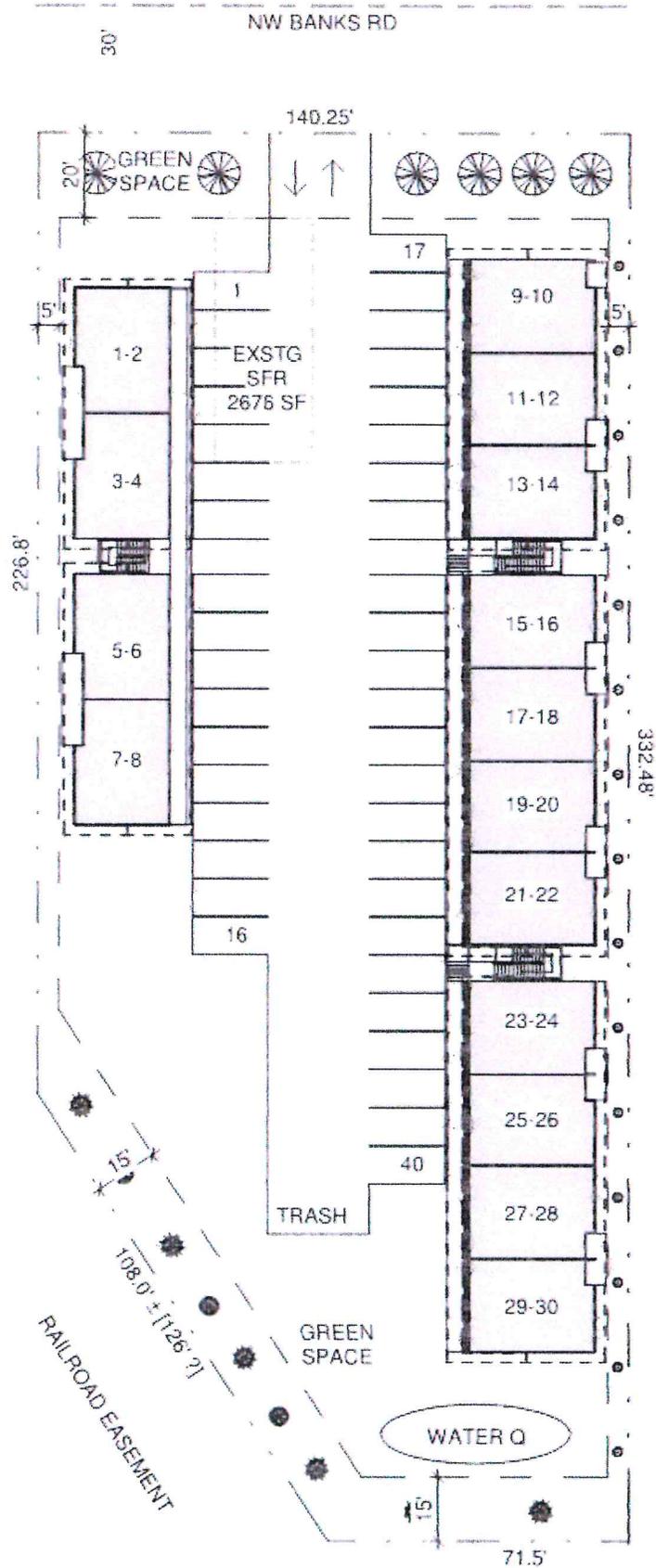


 = Development Site

Figure 1: Vicinity Map



42350 NW Banks Rd
Banks, OR 97106



22'-6" X 30'
Units
(TYP)



Figure 2: Site Plan

INVENTORY AND EXISTING CONDITIONS

An inventory and evaluation of existing transportation conditions were conducted along NW Banks Road. All modes of travel including pedestrian, bicycles, transit, and motor vehicles were evaluated. The inventory and data collected include the following:

- Street Functional Classification (See Table 1)
- Inventory of Existing Conditions (See Table 1)
 - Posted speed limit
 - Average Daily Traffic (ADT)
 - Pedestrian and bicycle facility characteristics
 - Lane geometry
 - On-street parking
 - Transit route information
- Speed Survey

Table 1: Existing Conditions Within Study Area

Roadway	Functional Classification	Existing Conditions						
		ADT (vpd)	Posted Speed (mph) Posted	Sidewalks	Bike lanes	Lane Geometry	On-Street Parking	Transit Routes
NW Banks Rd	Collector*	1,400***	25	No**	No	One lane in each direction	No	No

*Based on Washington County Transportation System Plan (TSP), Road Functional Classification. <http://www.arcgis.com/home/webmap/viewer.html?webmap=c8cc43990e814705b8fa7399267fa947&extent=-123.1981,45.3523,-122.6567,45.5722>

**The City of Banks Comprehensive Trail System Plan, Ordinance No. 2015-10-03 (Figure 13) includes future sidewalks along NW Banks Rd within the study area. https://www.cityofbanks.org/vertical/sites/%7B9449421F-C29B-4D8D-BE42-4EB124C2CA36%7D/uploads/Ordinance_No._2015-10-03.pdf

*** Based on traffic counts collected on 10/25/2018. See Traffic Data Analysis Section.

Currently no pedestrian, bike or transit facilities exist along NW Banks Road within the study area, except for approximately 80 feet of sidewalk on the south side of NW Banks Road just west of the development site. However, the City of Banks Comprehensive Plan² includes future sidewalks along NW Banks Road.

Speed Survey

A 24-hour traffic speed count was collected on NW Banks Road near the proposed site access on Thursday, October 25, 2018. The speed survey³ indicates an 85th percentile speed of 39 mph in the eastbound direction and 37 mph in the westbound direction. The complete speed data can be found in Appendix A.

² The City of Banks Comprehensive Trail System Plan, Ordinance No. 2015-10-03, Figure 13: Conceptual Plan Comprehensive Trail System.

https://www.cityofbanks.org/vertical/sites/%7B9449421F-C29B-4D8D-BE42-4EB124C2CA36%7D/uploads/Ordinance_No._2015-10-03.pdf

³ Tube count data attached on Appendix-A

TRAFFIC DATA ANALYSIS

Existing Traffic Volumes

A 24-hour traffic volume count was collected on NW Banks Road near the proposed site access on Thursday, October 25, 2018. Based on the collected data, NW Banks Road carries an average daily traffic (ADT) of approximately 1,400 vehicles per day, 735 vehicles in the eastbound direction and 649 vehicles in the westbound direction. Figure 3 shows that traffic peaks between 7:00 am and 8:00 am in the morning and 4:00 pm and 5:00 pm in the afternoon. Table 2 shows a summary of the traffic volumes. The complete traffic count data can be found in Appendix A.

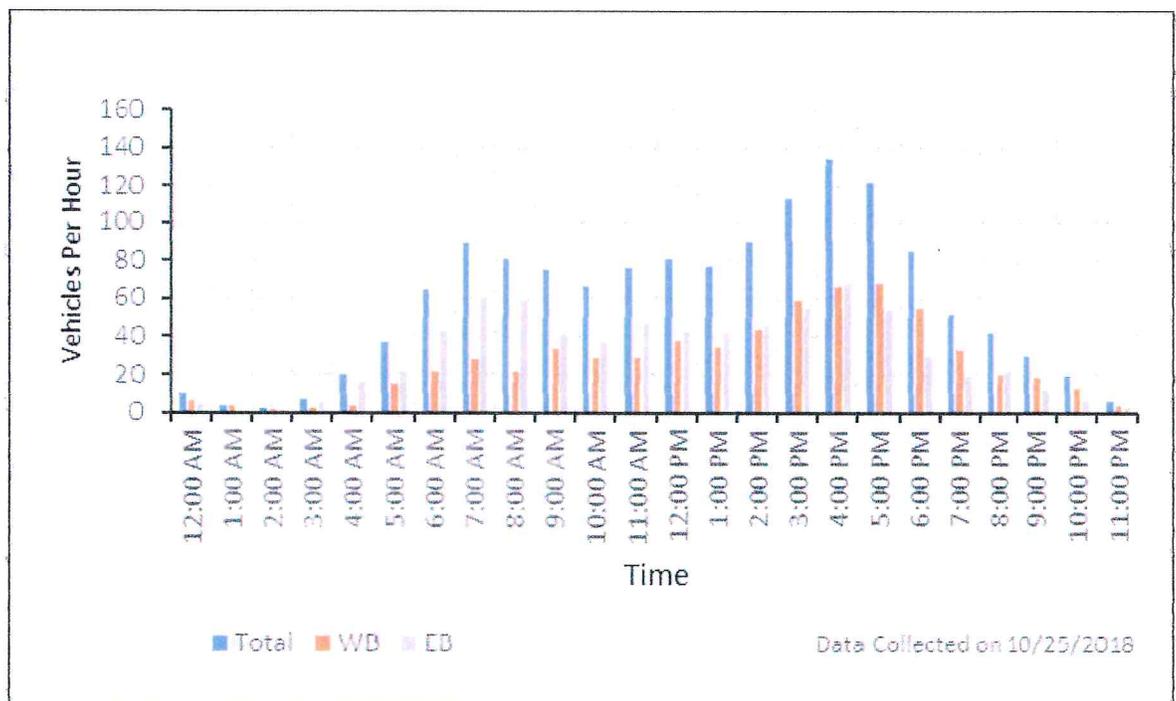


Figure 3 – 24-Hour Traffic Count Data

Table 2: Existing Vehicular Volume Summary

Roadway	Average Daily Traffic (vpd)	AM Peak Hour 7:00–8:00 AM			PM Peak Hour 4:00–5:00 PM		
		Total	WB	EB	Total	WB	EB
NW Banks Rd*	1,384	89	28	61	134	66	68

Notes: * Data collected near the proposed site access

Year 2020 Traffic Volumes (without development)

Year 2020 traffic volumes were developed to evaluate traffic impacts during the proposed development year of completion. The 2020 traffic volumes (without development) is comprised

of the existing traffic volumes, background traffic growth, and in-process traffic. An annual growth rate of 1.5%⁴ was applied to the existing traffic volumes to develop year 2020 traffic volumes (without development). No in-process traffic was added since there are no known projects that will influence traffic operations in the study area⁵.

Year 2020 Traffic Volumes (With Development)

Trips generated by the proposed development were estimated using rates presented in the Institute of Transportation Engineer’s (ITE) Trip Generation Manual 6, Tenth Edition. The proposed site’s trip generation was based on trip rates identified for Multifamily Housing “Low-Rise”, ITE Land Use Code 220. Table 3 presents the projected trip generation for the site. The proposed development will generate an estimated 14 trips in the AM peak hour and 17 trips in the PM peak hour. Trip generated volumes were added to the year 2020 traffic volumes (without development) to develop year 2020 traffic volumes (with development). Trip generated volumes were distributed based on existing traffic circulation patterns⁷. Figure 4 shows the trip distribution and assignment and Figure 5 shows the year 2020 traffic volumes (with development).

Table 3. Projected Trip Generation

ITE Land Use	Measure	ADT	Weekday					
			AM Peak Hour			PM Peak Hour		
			Total	Enter	Exit	Total	Enter	Exit
Projected Trip Generation								
Multifamily Housing “Low-Rise” (ITE 220)	30 units	7.32	0.46	23%	77%	0.56	63%	37%
Generation Rate ¹								
Total Site Trips		220	14	3	11	17	11	6

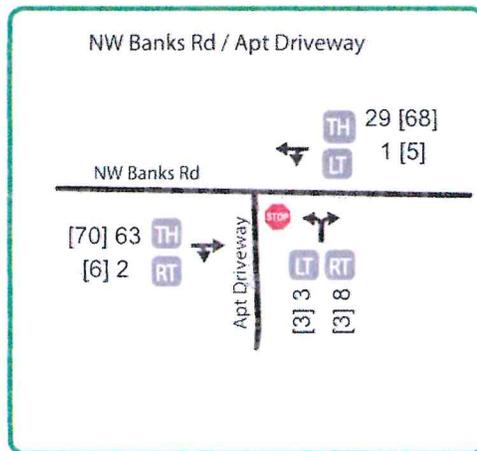


Figure 5 – Year 2020 Traffic Volumes (With Development)

⁴ Based on coordination with Randy Johnson, DKS Associates in October 2018.

⁵ Ibid.

⁶ Institute of Transportation Engineer’s (ITE) Trip Generation Manual, 10th Edition, ITE, 2017.

⁷ Based on 24-hour traffic count data collected on October 25, 2018.

Site Trip Distribution (Based on Traffic Volume Data Collected on 10/25/2018)



Site Trip Assignment



→ IN AM [PM]
← OUT AM [PM]

Figure 4:
Site Trip Distribution and
Trip Assignment
Weekday Vehicle Peak Hour Volumes

Left Turn Lane Warrant Analysis

Westbound left turn warrants were evaluated on NW Banks Road at the proposed site access under Year 2020 Traffic Volumes (With Development) scenario. This analysis uses the Texas Transportation Institute (TTI) curves included in the ODOT Analysis Procedure Manual (APM)⁸. Table 4 shows a summary of the westbound left turn warrant analysis. The westbound left turn warrants for the AM and PM peak hours are not met. The complete detailed analysis can be found in Appendix B.

Table 4: Left-turn Lane Warrant Analysis, AM and PM Peak Period

Location	Movement	Peak Hour	Left Turn Lane Criterion (TTI) Met?
			2020 Total Volume Condition
NW Banks Rd at the Proposed Site Access	WB LT	AM	No
		PM	No

Queue Analysis

A peak hour queuing analysis was conducted on NW Banks Rd at the proposed site access under the Year 2020 Traffic Volumes (With Development) scenario. Table 5 summarizes the results of the queuing analysis. The detailed queuing analysis results can be found in Appendix C. Based on the average and 95th percentile queue lengths, the queues do not exceed available storage lengths and no significant queues were identified along NW Banks Rd due to the development.

Table 5: Queue Analysis Results

Location	Peak Hour	Movement	Available Storage (ft)	Queue (ft)	
				Average	95 th Percentile
NW Banks Rd at Proposed Site Access	AM	NB (Access)	-	11	37
		WB thru-left	>2000*	0	0
		EB Thru-right	210**	0	0
	PM	NB (Access)	-	6	27
		WB thru-left	>2000*	1	8
		EB Thru-right	210**	0	0

Notes: *Measured from the site access to the intersection of NW Banks Rd / Courting Hill Dr.
 ** Measured from the site access intersection of NW Banks Rd / NW Sellers Rd.

Sight Distance Evaluation

Intersection and stopping sight distance was evaluated for the proposed site access to be provided along NW Banks Road approximately 210 feet east of NW Sellers Road. The evaluation was based on guidance provided in the American Association of State Highway and Transportation Officials (AASHTO) *Geometric Design of Highways and Streets, 2011*. Intersection sight distance for a vehicle traveling on NW Banks Road was measured assuming an object height of 3.5 feet, a driver's eye height of 3.5 feet, and a driver's setback of 14.5 feet from the edge of pavement. The sight distance measurement assumes a stop-control site access approach. Intersection and stopping sight distance for the proposed site access was compared to the AASHTO Design Intersection and Stopping Sight Distance for the following cases:

⁸ Exhibit 7-1, ODOT Analysis Procedure Manual (APM), Version 1, 2015.

- Design Intersection Sight Distance – Case B1, left turn from the minor stop-controlled road⁹.
- Design Intersection Sight Distance – Case B2, right turn from minor stop-controlled road¹⁰.
- Stopping Sight Distance on NW Banks Road¹¹.

Sight distance was field measured under existing conditions and compared with the intersection and stopping sight distance requirements for the 85th percentile speed. The 85th percentile speed was utilized in this analysis since it represents a more conservative approach. For analysis purposes the 85th percentile speed was rounded up to 40 mph (39 EB and 37 WB, see speed survey section). The stopping sight distance (SSD) was evaluated for both the eastbound and westbound directions. Due to the NW Banks Road grade characteristics within the study area, the sight distance standard was adjusted per AASHTO recommendations. The sight distance evaluation is summarized in Table 6.

Table 6: Sight Distance Evaluation – Proposed Site Accesses

Sight Distance Evaluated	85th Percentile Speed (mph)	Estimated Available Sightline (ft)	Sight Distance Standards (ft)	Meets Standard?	
NW Banks Rd at Proposed Site Access					
Case B1: Left-turn	40	West of Site	≈ 455*	445	YES
		East of Site	>445		YES
Case B2: Right-turn		≈ 455*	385	YES	
SSD EB Direction (Upgrade 6%)**		>333	333	YES	
SSD WB Direction (Downgrade 9%)**		>354	354	YES	
Notes: * Measured from the site access to the west approach of the intersection of NW Banks Rd / Main Street. The intersection eastbound, westbound, northbound right turn and southbound left turn approaches are stop controlled. ** No information available. Grades were assumed for analysis purposes.					

As shown in Table 6, the required intersection and stopping sight distance standards are met at the proposed site access. Although the sight distance standards are met, careful consideration for the placement of parking, signing, landscaping, or other devices needs to be considered so blocking or reduction of sight lines does not occur. Sight triangles should be periodically monitored, and vegetation trimmed to keep sight triangles clear and maximize the available sight distance along the property frontage. Figure 6 shows the visibility of the site access to and from NW Banks Road.

⁹ American Association of State Highway and Transportation Official's Geometric Design of Highways and Streets, 2011, Right turn from stop, AASHTO, Case B1, Table 9-6.

¹⁰ American Association of State Highway and Transportation Official's Geometric Design of Highways and Streets, 2011, Right turn from stop, AASHTO, Case B2, Table 9-8.

¹¹ American Association of State Highway and Transportation Official's Geometric Design of Highways and Streets, 2011, Stopping Sight Distance, AASHTO, Table 3-1.

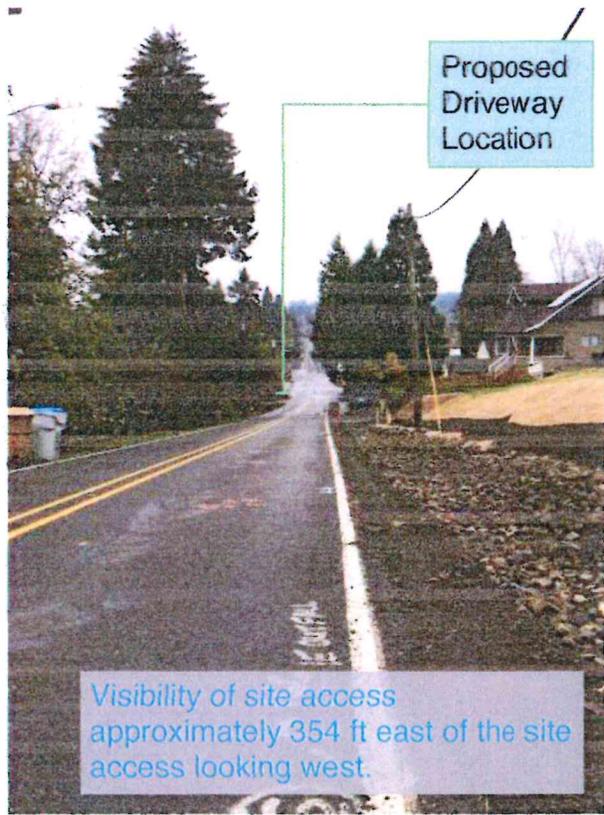
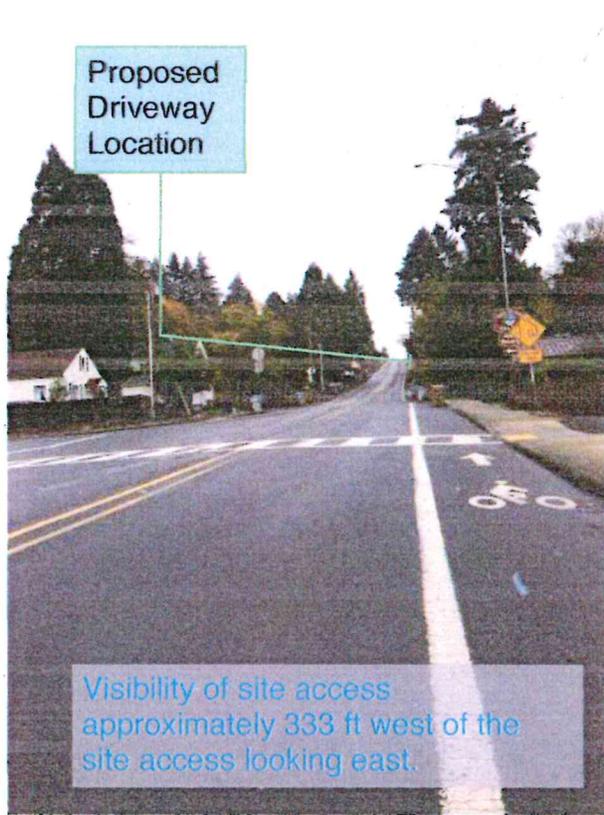


Figure 6: Sight Distance Visualization

ACCESS SPACING

Access spacing standards vary based on the functional classification of the roadway. Based on the City of Banks Public Works Design Standards¹², the minimum access spacing standard along NW Banks Road is 100 feet or no closer than 60% of parcel frontage unless this prohibits access to the site, in which case the City Engineer may approve a Deviation. Table 7 summarizes the access spacing analysis for the proposed site. As shown in Table 7, the spacing to the closest intersection and the driveway located east of the proposed site access meets the minimum access spacing standards required by the City of Banks. However, the spacing to the driveway located west of the proposed driveway does not meet the minimum access spacing standards.

Table 7: Access Spacing Analysis Summary

Roadway	Functional Classification ⁽¹⁾	Access Spacing Standards	Approx. Site Access Spacing	Meets Standard
NW Banks Road	Collector	100' or 84.15' (60% of the 140.25' of parcel frontage)	210' (to NW Sellers Rd Int.)	Yes
			65' (to existing driveway east of proposed driveway)	No
			84.5' (to existing driveway east of proposed driveway)	Yes

RESULTS AND RECOMMENDATIONS

The proposed 20,250 square-foot development will be located on the south side of NW Banks Road just east of NW Sellers Road in the City of Banks, Oregon. The existing house will be demolished and replaced with 30 new apartment units and 40 parking spaces. The proposed site access will be provided along NW Banks Road approximately 210 feet east of the intersection of NW Banks Road and NW Sellers Road. Construction of the planned development is estimated to be completed in 2020. The site is expected to generate 220 daily trips, 14 trips in the AM peak hour, and 17 trips in the PM peak hour.

Westbound left turn warrants were evaluated on NW Banks Road at the proposed site access under the Year 2020 Traffic Volumes (With Development) scenario. The westbound left turn warrants for the AM and PM peak hours are not met and a westbound left turn lane is not warranted at the project site access. A peak hour queuing analysis was conducted on NW Banks Rd at the proposed site access. Based on the average and 95th percentile queue lengths, the queues do not exceed available storage lengths and no significant queues were identified along NW Banks Rd due to the development.

Sight distance was field measured under existing conditions and compared with the intersection and stopping sight distance requirements for the 85th percentile speed. The 85th percentile speed was utilized in this analysis since it represents a more conservative approach. This analysis shows that intersection and stopping sight distance standards are met at the proposed site access. Although the

¹²City of Banks Public Works Design Standards, June 2018, Page 2-8.

sight distance standards are met, careful consideration for the placement of parking, signing, landscaping, or other devices needs to be considered so blocking or reduction of sight lines does not occur. Sight triangles should be periodically monitored, and vegetation trimmed to keep sight triangles clear and maximize the available sight distance along the property frontage.

Based on the City of Banks Public Works Design Standards, the minimum access spacing standard along NW Banks Road is 100 feet or no closer than 60% of parcel frontage unless this prohibits access to the site, in which case the City Engineer may approve a Deviation. This analysis shows that the spacing to the closest intersection and the driveway located east of the proposed driveway meets the minimum access spacing standards. However, the spacing to the driveway located west of the proposed driveway does not meet standards and may require a deviation approval from the City of Banks.

Appendix

Appendix A

Traffic Count Data

LOCATION: NW Banks Rd east of Sellers Rd
 SPECIFIC LOCATION: NW Banks Rd east of Sellers Rd
 CITY/STATE: Banks, OR
 QC JOB #: 14831101
 DIRECTION: EB
 DATE: Oct 25 2018 - Oct 25 2018

Start Time	Mon	Tue	Wed	Thu	Fri	Average Weekday	Sat	Sun	Average Week	Average Week Profile
	25-Oct-18					Hourly Traffic			Hourly Traffic	
12:00 AM				4		4			4	
1:00 AM				0		0			0	
2:00 AM				1		1			1	
3:00 AM				5		5			5	
4:00 AM				16		16			16	
5:00 AM				22		22			22	
6:00 AM				43		43			43	
7:00 AM				61		61			61	
8:00 AM				59		59			59	
9:00 AM				41		41			41	
10:00 AM				37		37			37	
11:00 AM				47		47			47	
12:00 PM				43		43			43	
1:00 PM				42		42			42	
2:00 PM				46		46			46	
3:00 PM				55		55			55	
4:00 PM				68		68			68	
5:00 PM				54		54			54	
6:00 PM				30		30			30	
7:00 PM				19		19			19	
8:00 PM				22		22			22	
9:00 PM				12		12			12	
10:00 PM				6		6			6	
11:00 PM				2		2			2	
Day Total	735					735			735	
% Weekday Average	100.0%					100.0%				
% Week Average	100.0%					100.0%				
AM Peak Volume	7:00 AM 61					7:00 AM 61			7:00 AM 61	
PM Peak Volume	4:00 PM 68					4:00 PM 68			4:00 PM 68	

Comments:

LOCATION: NW Banks Rd east of Sellers Rd
 SPECIFIC LOCATION: NW Banks Rd east of Sellers Rd
 CITY/STATE: Banks, OR

QC JOB #: 14831101
 DIRECTION: WB
 DATE: Oct 25 2018 - Oct 25 2018

Start Time	Mon	Tue	Wed	Thu	Fri	Average Weekday	Sat	Sun	Average Week	Average Week Profile
	25-Oct-18					Hourly Traffic			Hourly Traffic	
12:00 AM				6		6			6	
1:00 AM				4		4			4	
2:00 AM				1		1			1	
3:00 AM				2		2			2	
4:00 AM				4		4			4	
5:00 AM				15		15			15	
6:00 AM				22		22			22	
7:00 AM				28		28			28	
8:00 AM				22		22			22	
9:00 AM				34		34			34	
10:00 AM				29		29			29	
11:00 AM				29		29			29	
12:00 PM				38		38			38	
1:00 PM				35		35			35	
2:00 PM				44		44			44	
3:00 PM				59		59			59	
4:00 PM				66		66			66	
5:00 PM				68		68			68	
6:00 PM				55		55			55	
7:00 PM				33		33			33	
8:00 PM				20		20			20	
9:00 PM				18		18			18	
10:00 PM				13		13			13	
11:00 PM				4		4			4	
Day Total	649					649			649	
% Weekday Average	100.0%					100.0%				
% Week Average	100.0%					100.0%				
AM Peak Volume	9:00 AM 34					9:00 AM 34			9:00 AM 34	
PM Peak Volume	5:00 PM 68					5:00 PM 68			5:00 PM 68	

Comments:

LOCATION: NW Banks Rd east of Sellers Rd
 SPECIFIC LOCATION: NW Banks Rd east of Sellers Rd
 CITY/STATE: Banks, OR
 DATE: Oct 25 2018 - Oct 25 2018
 QC JOB #: 14831101
 DIRECTION: EBWB

Start Time	Mon	Tue	Wed	Thu	Fri	Average Weekday	Sat	Sun	Average Week	Average Week Profile
	25-Oct-18					Hourly Traffic			Hourly Traffic	
12:00 AM				10		10			10	
1:00 AM				4		4			4	
2:00 AM				2		2			2	
3:00 AM				7		7			7	
4:00 AM				20		20			20	
5:00 AM				37		37			37	
6:00 AM				65		65			65	
7:00 AM				89		89			89	
8:00 AM				81		81			81	
9:00 AM				75		75			75	
10:00 AM				66		66			66	
11:00 AM				76		76			76	
12:00 PM				81		81			81	
1:00 PM				77		77			77	
2:00 PM				90		90			90	
3:00 PM				114		114			114	
4:00 PM				134		134			134	
5:00 PM				122		122			122	
6:00 PM				85		85			85	
7:00 PM				52		52			52	
8:00 PM				42		42			42	
9:00 PM				30		30			30	
10:00 PM				19		19			19	
11:00 PM				6		6			6	
Day Total						1384			1384	
% Weekday Average						100.0%				
% Week Average						100.0%				
AM Peak Volume						7:00 AM			7:00 AM	
						89			89	
PM Peak Volume						4:00 PM			4:00 PM	
						134			134	

Comments:

LOCATION: NW Banks Rd east of Sellers Rd
 SPECIFIC LOCATION: NW Banks Rd east of Sellers Rd
 CITY/STATE: Banks, OR
 QC JOB #: 14831101
 DIRECTION: EB
 DATE: Oct 25 2018

Start Time	1	15	16	20	21	25	26	30	31	31	35	36	40	41	45	46	50	51	55	56	60	61	65	66	70	71	75	76	999	Total	Pace	Speed	Number in Pace			
12:00 AM	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	26-35	3				
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Day Total	13	16	45	157	237	170	75	17	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Percent	1.8%	2.2%	6.1%	21.4%	32.2%	23.1%	10.2%	2.3%	0.4%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	
ADT																													735	31-40	407					
735																																				
AM Peak	10:00 AM	6:00 AM	7:00 AM	11:00 AM	8:00 AM	6:00 AM	6:00 AM	6:00 AM	7:00 AM	3:00 AM	6:00 AM	7:00 AM	3:00 AM	6:00 AM	7:00 AM	3:00 AM	6:00 AM	7:00 AM	3:00 AM	6:00 AM	7:00 AM	3:00 AM	6:00 AM	7:00 AM	3:00 AM	6:00 AM	7:00 AM	3:00 AM	6:00 AM	7:00 AM	3:00 AM	6:00 AM	7:00 AM	3:00 AM	6:00 AM	7:00 AM
Volume	3	2	7	13	21	13	9	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
PM Peak	3:00 PM	3:00 PM	3:00 PM	2:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	
Volume	2	4	5	14	26	21	6	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

SUMMARY - Tube Count - Speed Data

LOCATION: NW Banks Rd east of Sellers Rd
SPECIFIC LOCATION: NW Banks Rd east of Sellers Rd
CITY/STATE: Banks, OR
DATE: Oct 25 2018 - Oct 25 2018
QC JOB #: 14831101
DIRECTION: EB

Start Time	1	15	16	20	21	25	26	30	31	35	36	40	41	45	46	50	51	55	56	60	61	65	70	71	75	76	799	Total	Pace	Number										
Grand Total	13	16	16	45	157	237	170	75	17	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	735	31-40	407											
Cumulative Percent	1.8%	2.2%	6.1%	21.4%	32.2%	23.1%	10.2%	2.3%	0.4%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.8%	3.9%	10.1%	31.4%	63.7%	86.8%	97.0%	99.3%	99.7%	99.9%	100.0%	100.0%	100.0%	100.0%



Comments:

LOCATION: NW Banks Rd east of Sellers Rd
 SPECIFIC LOCATION: NW Banks Rd east of Sellers Rd
 CITY/STATE: Banks, OR
 QC JOB #: 14831101
 DIRECTION: WB
 DATE: Oct 25 2018

Start Time	1	15	16	20	21	25	26	30	31	35	36	40	41	45	46	50	51	55	56	60	61	65	70	71	75	76	999	Total	Pace Speed	Number in Pace					
12:00 AM	0	0	0	0	0	0	0	0	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	31-40	5					
1:00 AM	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	31-40	2					
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	31-40	1					
3:00 AM	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	21-30	1						
4:00 AM	0	0	0	0	1	0	0	1	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	4	41-50	2						
5:00 AM	0	0	0	0	0	0	3	3	3	3	5	5	3	3	0	1	1	0	0	0	0	0	0	0	0	0	15	31-40	8						
6:00 AM	0	0	0	0	1	1	6	6	4	4	7	7	3	3	1	0	0	0	0	0	0	0	0	0	0	0	22	36-45	10						
7:00 AM	0	0	0	0	1	4	8	8	13	13	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	26-35	21						
8:00 AM	2	0	0	0	1	1	6	6	5	5	5	5	0	0	2	0	1	0	0	0	0	0	0	0	0	0	22	26-35	11						
9:00 AM	0	0	0	0	2	2	14	14	11	11	6	6	0	0	1	0	0	0	0	0	0	0	0	0	0	0	34	26-35	25						
10:00 AM	0	0	1	0	0	0	13	13	11	8	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	26-35	24						
11:00 AM	0	0	0	0	0	8	8	8	13	13	4	4	1	1	0	0	0	0	0	0	0	0	0	0	0	0	29	26-35	16						
12:00 PM	0	0	0	0	0	3	3	10	9	6	6	7	2	2	0	0	0	0	0	0	0	0	0	0	0	0	38	26-35	26						
1:00 PM	0	0	1	1	6	6	10	10	12	9	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	26-35	19						
2:00 PM	0	0	1	1	1	1	20	20	12	7	7	8	0	0	1	0	1	0	0	0	0	0	0	0	0	0	44	26-35	31						
3:00 PM	0	0	0	0	6	6	15	15	27	27	9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59	26-35	42						
4:00 PM	2	0	0	0	4	4	19	19	29	29	8	8	3	3	0	0	0	0	0	0	0	0	0	0	0	0	66	26-35	47						
5:00 PM	1	0	1	1	3	3	27	27	17	17	12	12	6	6	1	1	0	0	0	0	0	0	0	0	0	0	68	26-35	44						
6:00 PM	0	0	0	0	1	1	17	17	24	24	8	8	4	4	0	0	0	0	0	0	0	0	0	0	0	0	55	26-35	40						
7:00 PM	0	0	2	2	2	2	8	8	9	7	7	7	5	5	0	0	0	0	0	0	0	0	0	0	0	0	33	26-35	17						
8:00 PM	0	0	0	0	0	0	6	6	5	5	6	6	2	2	0	0	1	0	0	0	0	0	0	0	0	0	20	26-35	11						
9:00 PM	0	0	0	0	2	2	4	4	8	8	3	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	18	26-35	12						
10:00 PM	0	0	2	2	2	2	1	1	5	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	31-40	7						
11:00 PM	0	0	0	0	0	0	1	1	1	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	31-40	3						
Day Total	6	10	47	201	219	117	36	9	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	649	26-35	419						
Percent	0.9%	1.5%	7.2%	31.0%	33.7%	18.0%	5.5%	1.4%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%									
ADT 649																																			
AM Peak Volume	8:00 AM	10:00 AM	11:00 AM	9:00 AM	7:00 AM	6:00 AM	5:00 AM	8:00 AM	5:00 AM	9:00 AM	34																9:00 AM	34							
PM Peak Volume	3:00 PM	5:00 PM	1:00 PM	5:00 PM	4:00 PM	5:00 PM	5:00 PM	2:00 PM	2:00 PM	5:00 PM	68																5:00 PM	68							

SUMMARY - Tube Count - Speed Data

LOCATION: NW Banks Rd east of Sellers Rd
 SPECIFIC LOCATION: NW Banks Rd east of Sellers Rd
 CITY/STATE: Banks, OR

OC JOB #: 14831101
 DIRECTION: WB
 DATE: Oct 25 2018 - Oct 25 2018

Start Time	1	16	20	21	25	26	30	31	35	36	40	41	45	46	50	51	55	56	60	61	65	66	70	71	75	76	76	999	Total	Pace	Number
Grand Total	6	10	10	47	201	219	117	36	9	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	649	26-35	419	
Percent	0.9%	2.5%	9.7%	40.7%	74.4%	92.4%	98.0%	99.4%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%				
Cumulative	0.9%	3.4%	13.1%	53.8%	94.2%	98.1%	99.5%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Comments:

Mean Speed(Average) 31 MPH
 85th Percentile 37 MPH
 Median 31 MPH
 Mode: 33 MPH

LOCATION: NW Banks Rd east of Sellers Rd
 SPECIFIC LOCATION: NW Banks Rd east of Sellers Rd
 CITY/STATE: Banks, OR

OC JOB #: 14831101
 DIRECTION: EBWB
 DATE: Oct 25 2018

Start Time	1	15	16	20	21	25	26	30	31	35	36	40	41	45	46	50	51	55	56	60	61	65	70	71	75	76	Total	Pace Speed	Number in Pace	
12:00 AM	0	0	0	0	0	0	2	4	4	2	2	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	10	31-40	6
1:00 AM	0	0	0	0	0	0	1	1	1	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	31-40	2
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	36-45	2	
3:00 AM	0	0	0	0	0	0	1	1	2	2	2	2	0	0	1	1	1	0	0	0	0	0	0	0	0	0	7	31-40	4	
4:00 AM	0	0	0	0	2	2	4	4	4	4	3	3	6	6	1	1	0	0	0	0	0	0	0	0	0	0	20	38-47	8	
5:00 AM	0	0	0	0	2	2	10	10	9	9	11	11	3	3	1	1	1	0	0	0	0	0	0	0	0	0	37	31-40	20	
6:00 AM	0	0	2	2	2	2	14	14	13	13	20	20	12	12	1	4	0	0	1	1	0	0	0	0	0	0	65	31-40	33	
7:00 AM	2	2	0	0	11	11	19	19	30	30	16	16	7	9	3	4	0	0	0	0	0	0	0	0	0	0	89	26-35	49	
8:00 AM	2	2	2	2	2	2	18	18	26	26	18	18	9	9	1	3	1	0	0	0	0	0	0	0	0	0	75	26-35	44	
9:00 AM	0	0	2	2	4	4	23	23	31	31	12	12	2	2	1	0	0	0	0	0	0	0	0	0	0	0	66	26-35	47	
10:00 AM	3	3	1	1	0	0	25	25	23	23	11	11	2	2	0	0	1	0	0	0	0	0	0	0	0	0	76	26-35	43	
11:00 AM	0	0	1	1	12	12	21	21	22	22	12	12	6	6	1	0	0	0	0	0	0	0	0	0	0	0	81	26-35	50	
12:00 PM	0	0	1	1	6	6	19	19	31	31	15	15	9	9	0	0	0	0	0	0	0	0	0	0	0	0	77	26-35	45	
1:00 PM	1	1	1	1	9	9	23	23	23	23	13	13	7	7	0	0	0	0	0	0	0	0	0	0	0	0	90	26-35	56	
2:00 PM	0	0	2	2	4	4	34	34	23	23	21	21	3	3	2	2	1	0	0	0	0	0	0	0	0	0	114	31-40	69	
3:00 PM	4	4	4	4	11	11	21	21	45	45	24	24	5	5	0	0	0	0	0	0	0	0	0	0	0	0	134	31-40	84	
4:00 PM	2	2	1	1	7	7	29	29	55	55	29	29	6	6	4	4	1	0	0	0	0	0	0	0	0	0	122	26-35	77	
5:00 PM	0	0	2	2	5	5	40	40	37	37	25	25	10	10	2	2	0	0	0	0	1	0	0	0	0	0	85	26-35	53	
6:00 PM	1	1	2	2	3	3	25	25	29	29	16	16	8	8	1	0	0	0	0	0	0	0	0	0	0	0	52	26-35	27	
7:00 PM	0	0	1	1	7	7	12	12	15	15	11	11	5	5	0	0	0	0	0	0	0	0	0	0	0	0	42	28-37	23	
8:00 PM	1	1	0	0	1	1	10	10	13	13	10	10	3	3	2	2	1	0	0	0	0	0	0	0	0	0	30	31-40	19	
9:00 PM	0	0	0	0	2	2	1	1	5	5	8	8	4	4	0	0	0	0	0	0	0	0	0	0	0	0	19	31-40	11	
10:00 PM	2	2	2	2	2	2	1	1	8	8	3	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	6	31-40	4	
11:00 PM	0	0	0	0	0	0	1	1	1	1	3	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	19	26	92	358	456	287	111	26	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1384	26-35	814	
Percent	1.4%	1.9%	6.6%	25.9%	32.9%	20.7%	8.0%	1.9%	0.5%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	
ADT 1384																														
AM Peak Volume	10:00 AM	6:00 AM	11:00 AM	10:00 AM	9:00 AM	6:00 AM	6:00 AM	7:00 AM	3:00 AM	6:00 AM																7:00 AM				
PM Peak Volume	3:00 PM	3:00 PM	3:00 PM	5:00 PM	4:00 PM	4:00 PM	5:00 PM	4:00 PM	2:00 PM	5:00 PM																4:00 PM				
	3	2	12	25	31	20	12	4	1	1																89				
	4	4	11	40	55	29	10	4	1	1																134				

Comments:

SUMMARY - Tube Count - Speed Data

LOCATION: NW Banks Rd east of Sellers Rd
 SPECIFIC LOCATION: NW Banks Rd east of Sellers Rd
 CITY/STATE: Banks, OR
 OC JOB #: 14831101
 DIRECTION: EBWB
 DATE: Oct 25 2018 - Oct 25 2018

Start Time	1	15	16	20	21	25	26	30	31	35	36	40	41	45	46	50	51	55	60	61	65	70	71	75	76	999	Total	Pace	Number	
Grand Total	19	26	92	358	456	287	111	26	7	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1384	26-35	814	
Cumulative Percent	1.4%	1.9%	6.6%	25.9%	32.9%	20.7%	8.0%	1.9%	0.5%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
ADT 1384																														

Comments:

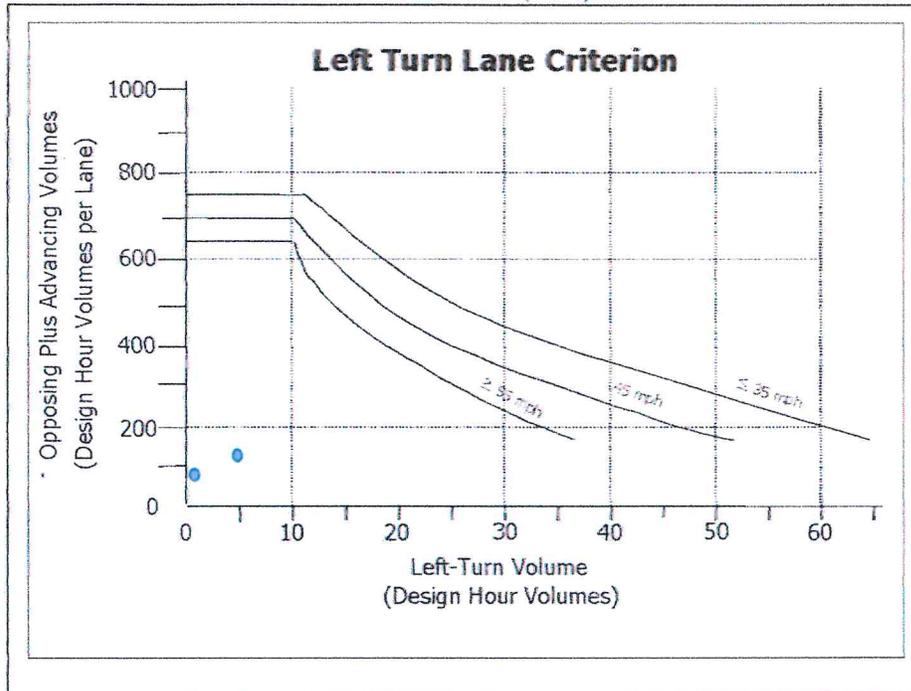
Report generated on 10/29/2018 2:21 PM SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>)

Mean Speed(Average)	32 MPH
85th Percentile	38 MPH
Median	32 MPH
Mode	33 MPH

Appendix B

Turn Lane Warrant Analysis

Exhibit 12-1 Left Turn Lane Criterion (TTI)



*(Advancing Volume/Number of Advancing Through Lanes) + (Opposing Volume/Number of Opposing Through Lanes)
 Opposing left turns are not counted as opposing volumes

Unsignalized Intersection	Movement	ODOT APM (V2) Exhibit 12-1 Left Turn Lane Criterion (TTI) Met?
		2020 Total volume condition
AM Peak Hour		
NW Banks Rd / Proposed Site Access	WB LT	NO
PM Peak Hour		
NW Banks Rd / Proposed Site Access	WB LT	NO

WB L: using AM peak hour traffic volume.

The Westbound advancing volume is 30 = (29+1) and the westbound opposing volume is 65 = (63+2) vehicle. The volume for the y-axis on Exhibit 12-1 is (30/1 + 65/1) = 95. To determine if the Westbound left turn volume criteria is met, we used the ≤ 35-mph curve in Exhibit 12-1, 95 for the y-axis and 1 left-turns for the x-axis. The volume criterion is not met in the westbound direction.

WB L: using PM peak hour traffic volume.

The Westbound advancing volume is 73 = (68+5) and the westbound opposing volume is 76 = (70+6) vehicle. The volume for the y-axis on Exhibit 12-1 is (73/1 + 76/1) = 149. To determine if the westbound left turn volume criteria is met, we used the ≤ 35-mph curve in Exhibit 12-1, 149 for the y-axis and 5 left-turns for the x-axis. The volume criterion is not met in the westbound direction.

Appendix C

Queue Analysis Results

Intersection: 1: Site Access & NW Banks Rd

Movement	NB
Directions Served	LR
Maximum Queue (ft)	35
Average Queue (ft)	11
95th Queue (ft)	37
Link Distance (ft)	595
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Site Access & NW Banks Rd

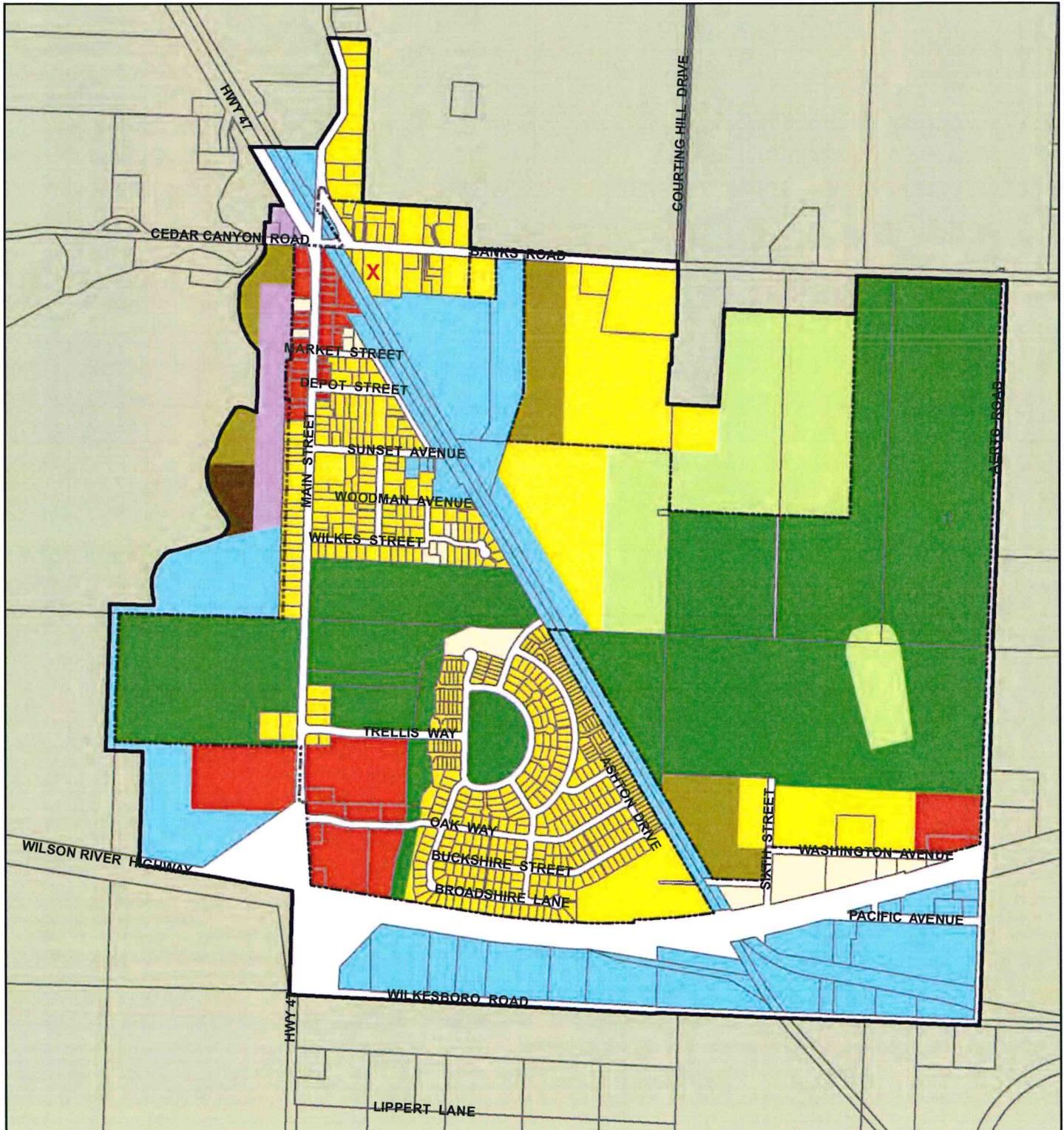
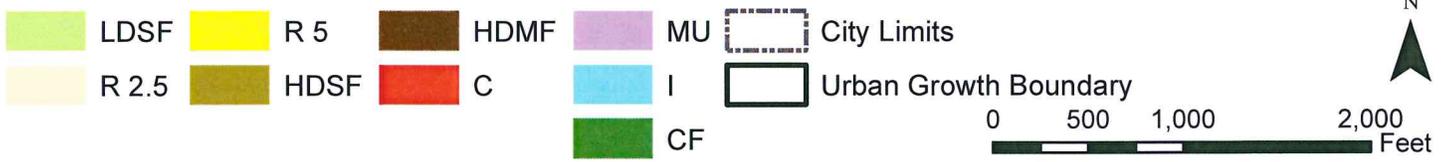
Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	15	35
Average Queue (ft)	1	6
95th Queue (ft)	8	27
Link Distance (ft)	1426	595
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

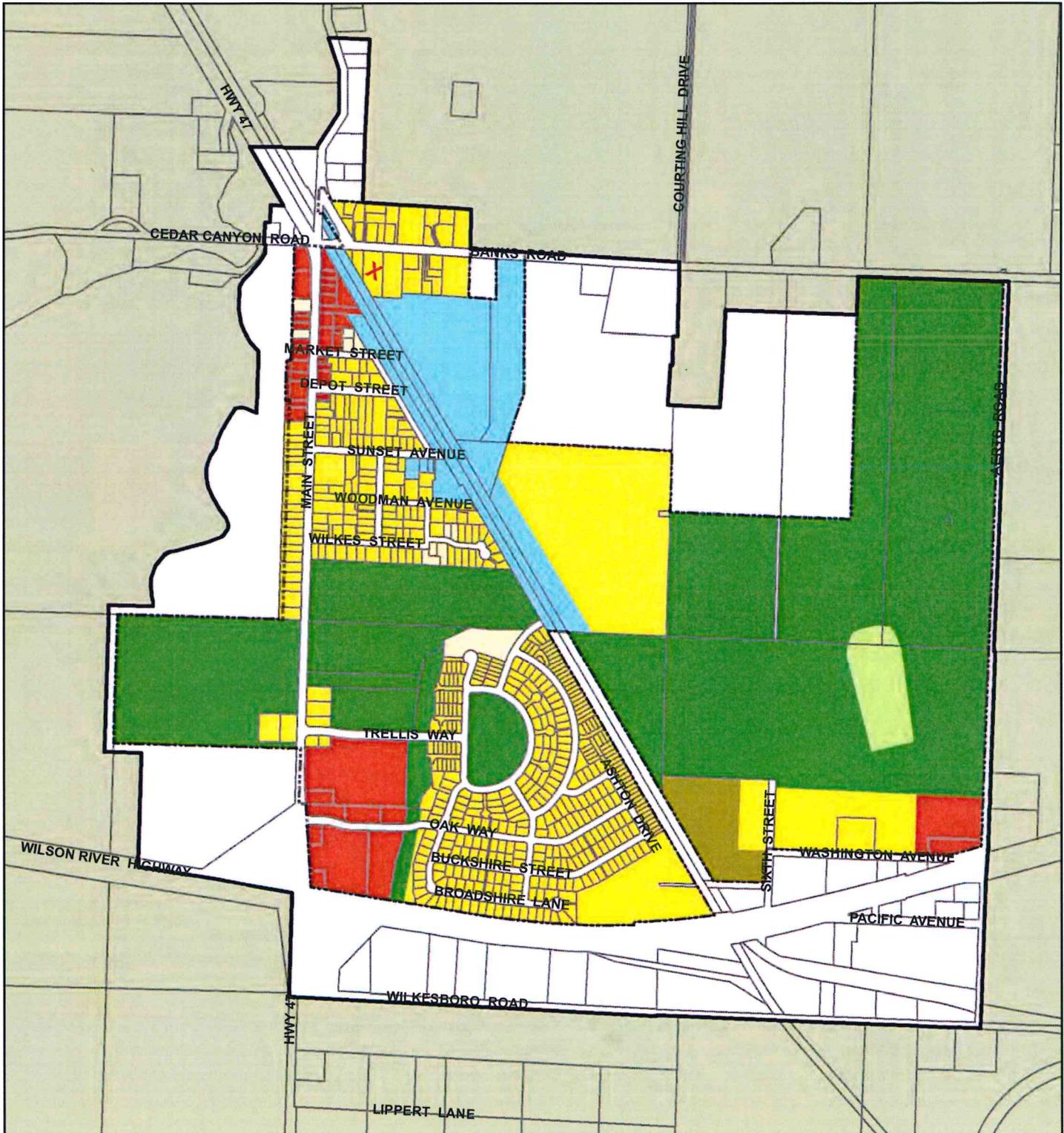
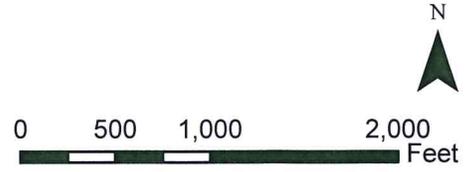
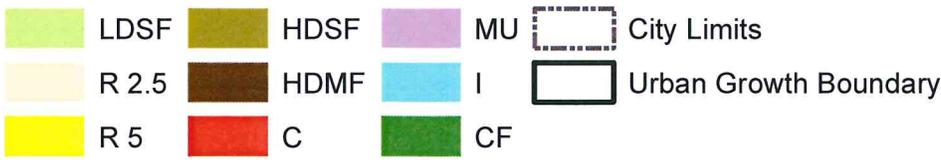
Network wide Queuing Penalty: 0

PLANNING MAPS

City of Banks Plan Map



City of Banks Zoning Map



CITY OF BANKS
HOUSING NEEDS ANALYSIS 2011 UGB REPORT
(ON FILE – PLEASE CONTACT THE CITY TO VIEW)