



MEMORANDUM

TO: Dan Riordan, City of Forest Grove
Cathy Corliss, Angelo Planning Group

FROM: Anne Sylvester, PTE

DATE: December 8, 2015

PROJECT #: 1819.02 Forest Grove Mixed Use Development Project

SUBJECT: Contingent Task 7.6 (Transportation Analysis and Findings Memo)
Final Assessment of Potential Traffic Impacts Associated with Mixed Use
Development Code Assistance Project

Introduction and Background

The City of Forest Grove has recently adopted a new *Comprehensive Plan*. This code assistance project is intended to implement some of the key elements of this plan, including provisions for mixed-use and Town Center zoning and increasing residential densities through a series of development code and zoning map amendments. These amendments will affect different areas within the City.

This memorandum has been prepared to address the potential traffic consequences of the proposed zoning changes and increased residential densities. A review will be made for consistency of these changes with the City's recently adopted *Transportation System Plan (TSP)* to determine overall compliance with the Oregon Transportation Planning Rule. Included in this memorandum are:

- Descriptive information about each planning area addressed in the code assistance project including location and major access routes,
- A comparison between development assumptions in the adopted *Comprehensive Plan* and TSP and assumptions for the Mixed Use Project in each planning area, and
- A summary of potential traffic implications related to expected growth for the Mixed Use code assistance project.

The planning areas included in the Mixed Use Project are illustrated in Figure 1 and include the following:

- **Mixed Use Areas 1, 2 and 3**

The project would create a mixed-use zone and design standards for the three areas designated "mixed use" in the *Comprehensive Plan*, with the goal of encouraging the placement of

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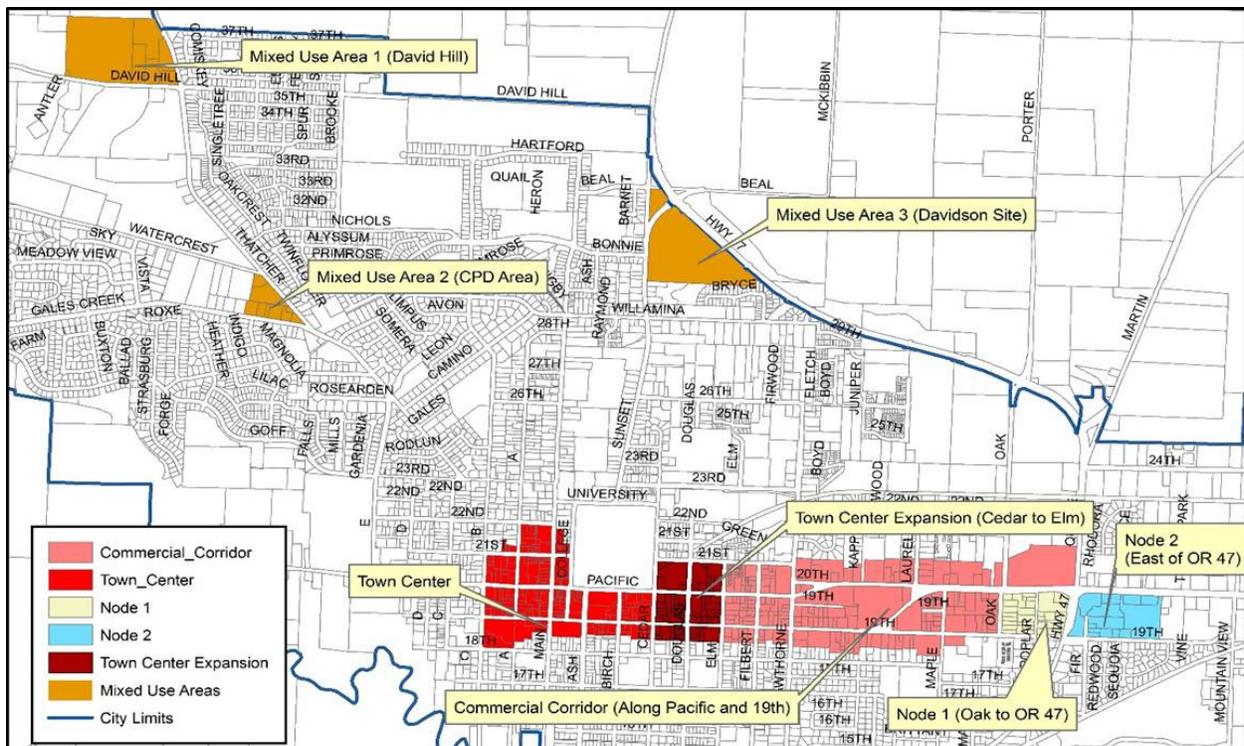
complementary land uses in proximity (vertically and horizontally) to promote complete neighborhoods.

- **Town Center and Commercial Corridor**

In the Town Center and Commercial Corridor, the project would have the following objectives:

- Expand the Town Center boundary by preparing a zoning map amendment and evaluating the three existing Town Center zones to decide which zone should be used in the expansion area.
- Simplify the code by consolidating two of the three Town Center zones (Town Center Transition (TCT) and Town Center Support (TCS)).
- Increase the target and maximum residential densities in the Town Center and Commercial Corridor.
- Develop a list of project amenities and enhancements that will be required for builders to receive residential density bonuses above the target density.

Figure 1. Mixed Use Project Planning Areas



Key elements of each planning area including expected land use types, household and employment growth assumptions, and an assessment of potential traffic impacts are presented in the following sections. The traffic impact analysis is generally qualitative and focuses on comparing growth expectations with the mixed use development to assumptions in the recently adopted *Comprehensive Plan* and *Transportation System Plan Updates* (2014).



Mixed Use Planning Areas

The three mixed-use areas are proposed to have the new Neighborhood Mixed-Use (NMU) zoning applied with the purpose of encouraging the placement of complementary land uses in close proximity to promote complete neighborhoods. All NMU zones will allow a variety of housing to be developed as long as the average residential density minimum is achieved for each area. The NMU zones will also allow for a wide range of non-residential uses within a designated “Village Center” and as part of a Mixed-Use Planned Development (MUPD) review.

Mixed Use Area 1 – David Hill

Description

As shown in Figure 2, Mixed Use Area 1 (David Hill) is located in the northwestern quadrant of the intersection of NW Thatcher Road and David Hill Road. The David Hill area is currently zoned as Single-Family Residential (R-10). The 8.5 acre site has approximately 2.9 net acres of developable land, due in part to the presence of vegetated corridor

constraints. The site is located immediately east of a tributary of Council Creek. Mixed Use Area 1 is part of a larger mixed use area on David Hill that is under consideration as part of the Westside Planning Project. However, the 8.5 acres of Mixed Use Area 1 is the only area currently proposed for rezoning.

Existing zoning for Mixed Use Area 1 is R-10 with 4.35 single family units per acre. The focus of future development in this area is on mixed use development with a small residential component.

Development Comparison

Table 1 compares expected development in Mixed Use Area 1 between the level assumed for 2035 in the TSP and the level assumed with the Mixed Use Project. As indicated in the table, the TSP assumed that a total of 565 households would be in place in 2035 in Transportation Analysis Zone (TAZ) 1393 which includes the David Hill area (see Attachment A for a map of TAZ boundaries).

In the Mixed Use Area 1 (which is a geographical subset of TAZ 1393), an estimated 12 households would be developed based on TSP assumptions. This compares with the 18 households that were assumed to be developed in this area with the project. Consequently, the Mixed Use Project would result in an increase of 6 households in comparison with the level of development anticipated and accommodated in the TSP. It should be noted while households and dwelling units are not quite the same, for purposes of this memorandum they are treated the same. Thus, the increase in households identified in the regional model is assumed to be the same as the expected number of new dwelling units estimated for the mixed use study.

Figure 2. Mixed Use Area 1 – David Hill





Table 1. Mixed Use Area 1 (David Hill) Development Assumptions

2035 Development Assumed in TSP					2035 Growth Assumed with Mixed Use Project				
Households	Retail	Service	Other	Employment Total	Households	Retail	Service	Other	Employment Total
<i>Estimate of Development for Entire TAZ 1393</i>									
565	30	50	9	89	546	32	0	0	32
<i>Estimate of Development for Mixed Use Planning Area</i>									
12	30	50	9	89	18	32	0	0	32

Note: TAZ refer to a Transportation Analysis Zone as identified in Metro’s 2014 regional travel demand model. This model was used to estimate future year traffic volumes as part of the City’s 2014 TSP Update. A map illustrating the boundaries of the Forest Grove area TAZs is attached to this memo.

Note 2: Shaded area highlights differences between TSP development assumptions and assumptions with the Mixed Use Project.

2035 employment projections in the Mixed Use planning area were estimated at 86 total employees (of all types) for the TSP. The TSP assumes that most, if not all, employment growth in TAZ 1393 would occur in the Mixed Use planning area, so the total assumed growth in both the TAZ and the Mixed Use planning area are same. Due to the limited size of potential commercial development that would be codified with the project (i.e., 15,000 square feet of leasable area), total employment with the Project is expected to be 32 employees. This would be less than the level assumed in the TSP by 57 total employees.

Potential Traffic Implications

The proposed increase in households over the level assumed in the TSP would generate slightly higher traffic volumes to and from Mixed Use Area 1. However, the reduction in employment-generated traffic from the level assumed in the TSP is expected to more than offset the effects of added residential traffic. Consequently, it is anticipated that traffic volumes generated by the Mixed Use Area 1 would be fully accommodated by the TSP. No additional traffic impacts are anticipated.

Mixed Use Area 2 – CPD Area (Gales Creek)

Description

Mixed Use Area 2 is also referred to as the CPD (Commercial Planned Development) area. It is located north of Gales Creek Road and west of NW Thatcher Road. Its western boundary is the future extension of Talisman Lane. This street extension is proposed in the City’s recently adopted TSP. The CPD Area is illustrated in Figure 3.

Figure 3. Mixed Use Area 2 – Gales Creek CPD



The CPD Area is currently zoned Commercial Planned Development, now a defunct zone since the adoption of the *Comprehensive Plan* in 2014. The CPD area consists of several individual parcels and has existing non-conforming development.



Including all parcels in this planning area, a net total of 5.4 acres would be available for development. The City’s intent is that this area be developed with a mix of residential and employment uses.

Development Comparison

Table 2 provides a comparison of expected development in the CPD Area between the level assumed for 2035 in the TSP and the level assumed with the Mixed Use Project. As indicated in the table, the TSP assumed that a total of 1,029 households would be in place in 2035 in TAZ 1396. In the CPD area (which is a geographical subset of TAZ 1396), an estimated 44 households would be developed based on TSP assumptions. Residential development assumptions for the TAZ and the CPD area would be identical with the Mixed Use Project.

2035 employment projections in TAZ 1396 were estimated at 41 employees for the TSP. Of this total, 25 are assumed to be located in the CPD Area. Other employment in TAZ 1396 outside of the CPD area would include an ODF office and the City’s water treatment facility equaling an estimated 16 employees. Total employment with the Project is expected to be the same as the level assumed in the TSP for both the entire TAZ and the CPD Area.

Table 2. Mixed Use Area 2 (CPD Area) Development Assumptions

2035 Totals Assumed in TSP					2035 Totals Assumed with Mixed Use Project				
Households	Retail	Service	Other	Employment Total	Households	Retail	Service	Other	Employment Total
<i>Estimate of Development for Entire TAZ 1396</i>									
1,029	19	22	0	41	1,029	19	22	0	41
<i>Estimate of Development for Mixed Use Planning Area</i>									
44	13	12	0	25	44	13	12	0	25

Note: TAZ refer to a Transportation Analysis Zone as identified in Metro’s 2014 regional travel demand model. This model was used to estimate future year traffic volumes as part of the City’s 2014 TSP Update. A map illustrating the boundaries of the Forest Grove area TAZs is attached to this memo.

Potential Traffic Implications

The identical level of both residential development and employment in Mixed Use Area 2 in comparison with the assumptions inherent in the TSP leads to the conclusion that any traffic volumes generated in this area by the project would be fully accommodated in the TSP. No additional impacts are anticipated.

Mixed Use Area 3 – Davidson Site

Description

The Davidson site is generally situated in the southeast quadrant of the intersection of Oregon Highway 47 and Sunset Drive. The location of this site is shown in Figure 4.

The Davidson site is designated on the Comprehensive Plan as Mixed Use, but is currently zoned as Light Industrial (LI). It is large and level, and is currently under one ownership with visibility from Highway 47. The

Figure 4. Mixed Use Area 3 – Davidson Site





Davidson Site has approximately 19.9 net acres of developable land. The City’s intent is that this site be developed for a mix of residential and employment uses.

Development Comparison

Table 3 provides a comparison of expected development in Mixed Use Area 3 between the level assumed for 2035 in the TSP and the level assumed with the Mixed Use Project. As indicated in the table, the TSP assumed that a total of 1,712 households would be in place in 2035 in TAZ 1401. This represents an increase of 443 households over 2010 conditions. In Mixed Use Area 3 (which is a geographical subset of TAZ 1401), an estimated 225 households would be developed based on TSP assumptions. Other residential growth in TAZ 1401 outside of the Davidson site includes an estimated 218 new units. These units are expected to be located on vacant land to the south of the Davidson property. Residential development assumptions for the TSP in Area 3 would be identical to the Mixed Use Project.

2035 Employment projections in TAZ 1401 were estimated at 1,580 employees for the TSP. This represents an increase of 415 employees over 2010 conditions. Of this total, 131 are assumed to be located in Area 3. This level of employment correlates to approximately 130,000 square feet of retail and service-related development. Employment growth in TAZ 1401 outside of the Davidson site estimated at 284 employees. These employees would be primarily located on vacant property to the south of Area 3.

Employment growth assumptions for the Mixed Use Project in Area 3 reflect a more limited level of employment that correlates to approximately 75,000 square feet of retail and/or service/institutional employment. This level of development would yield approximately 76 employees in Area 3. Under this scenario, the remaining employment growth (i.e., 55 employees) would occur outside of the Mixed Use Area, elsewhere in TAZ 1401.

Table 3. Mixed Use Area 3 (Davidson Site) Development Assumptions

2035 Totals Assumed in TSP					2035 Totals Assumed with Mixed Use Project				
Households	Retail	Service	Other	Employment Total	Households	Retail	Service	Other	Employment Total
<i>Estimate of Development for Entire TAZ 1401</i>									
Total in 2035									
1,712	175	1,171	234	1,580	1,712	175	1,171	234	1,580
Growth Increment 2010-2035									
443	118	306	(9)	415	443	118	306	(9)	415
<i>Estimate of Development for Mixed Use Planning Area</i>									
Growth Increment 2010-2035									
225	118	13	0	131	225	76	0	0	76
<i>Estimate of Development for Remainder of TAZ 1401</i>									
Growth Increment 2010-2035									
218	0	293	(9)	284	218	42	306	(9)	339

Note: TAZ refer to a Transportation Analysis Zone as identified in Metro’s 2014 regional travel demand model. This model was used to estimate future year traffic volumes as part of the City’s 2014 TSP Update. A map illustrating the boundaries of the Forest Grove area TAZs is attached to this memo.

Note 2: Shaded area highlights differences between TSP development assumptions and assumptions with the Mixed Use Project.



Potential Traffic Implications

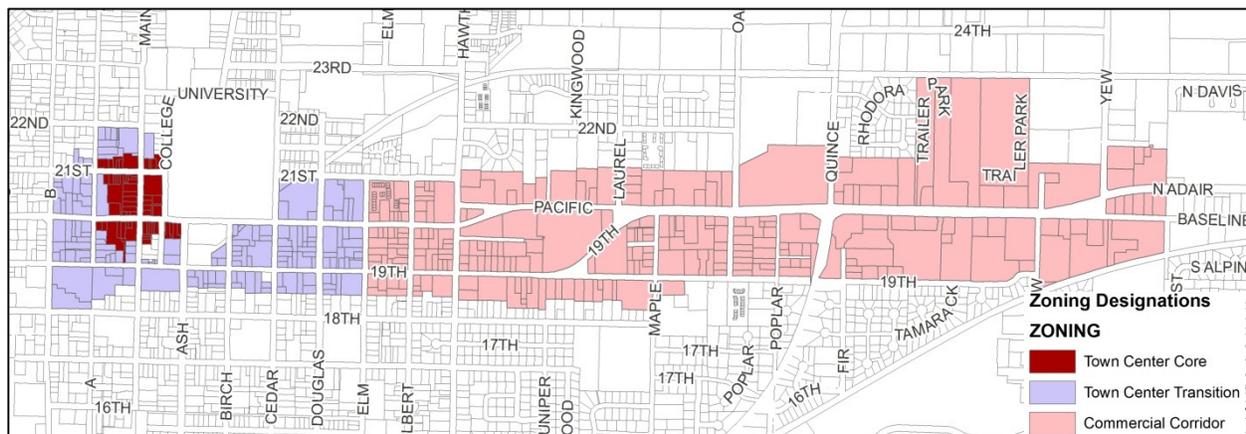
The identical level of residential development in Mixed Use Area 3 in comparison with the assumptions inherent in the TSP leads to the conclusion that residentially-based traffic volumes generated in this area by the project would be fully accommodated in the TSP. No additional impacts are anticipated as a result of this residential development. With a reduction in employment levels in comparison with the TSP, the Davidson site would likely generate less employment-related traffic. Thus, in the aggregate, the Mixed Use Project would generate less traffic to/from the Davidson site than would be expected with the TSP. Since the overall growth expectations for TAZ 1401 is not expected to change, some of the growth assumed under the TSP would likely shift to another portion of the TAZ – for example, either to the Town Center and/or Commercial corridor or to the institutionally zoned area south of the Davidson property. The effects of a shift in the location of employment growth further south may result in slightly lower traffic volumes along Sunset Drive near OR 47 and slightly more traffic along the Pacific Avenue corridor. Due to the relative small number of employees that might shift (55), the traffic impacts of such a shift are expected to be largely localized and are unlikely to cause a significant adverse impact at the critical intersection of Pacific Avenue with Quince Street.

As an alternative to the 75,000 square-foot development assumed for mixed use rezoning, the assumptions and findings inherent in the TSP would accommodate additional development up to a total of approximately 130,000 square feet. This would reduce traffic volumes associated with employment growth in TAZ 1401 along the Pacific Avenue corridor by allowing more employment growth to occur on the Davidson site. Additionally, it would likely increase volumes along OR 47, consistent with the TSP.

Town Center / Commercial Corridor

The Town Center and Commercial Corridor in Forest Grove is illustrated in Figure 5 and described in the paragraphs below. Together these two areas represent the commercial and employment core of the City of Forest Grove. Regional access to/from this area is via the Pacific Avenue/19th Avenue corridor (within Forest Grove), Baseline Road (to the east of Forest Grove), and Oregon Highway 47 both to the north and south of Forest Grove. Each portion of the Town Center/Commercial Corridor is described below.

Figure 5. Town Center and Commercial Corridor





Town Center

Description

Town Center Core: The Town Center area currently has three zones: Town Center Core (TCC), Town Center Transition (TCT), and Town Center Support (TCS). The TCT and TCS zones share many similarities. Proposed amendments to the development code and zoning map would consolidate TCS into TCT with minor adjustments to TCT.

In addition to consolidating zones, the proposed amendments would increase the maximum residential density from 20.28 to 40 dwelling units per acre and add a residential density bonus up to 100 dwelling units per acre through building amenity and affordable housing incentives.

Town Center Expansion Area: The Community Commercial (CC) area directly east of the Town Center is proposed to be rezoned to TCT (Town Center Transition). The transition from CC to TCT will encourage more urbanized development to occur by restricting new auto-oriented development, reducing landscape requirements, applying “urban” design standards, and allowing residential uses in mixed-use or stand-alone development.

The TCT zone (as amended) would increase the maximum residential density from 20.28 to 40 dwelling units per acre and include a residential density bonus of up to 100 dwelling units per acre.

Development Comparison

Table 4 provides a comparison of expected development in Town Center Core (TCC) and Town Center Transition (TCT) Areas between the level assumed for 2035 in the TSP and the level assumed with the Mixed Use Project. As indicated in the table, the TCC and TCT include portions of three TAZs in the center of Forest Grove – TAZs 1400, 1401 and 1407 (see map in Attachment A). The TSP assumed that a total of 4,492 households would be in place in 2035 in these three TAZs. This represents an increase of 1,209 households over 2010 conditions. In the TCC and TCT (subsets of these three TAZs) an estimated 285 new households would be developed based on TSP assumptions. Residential growth in the three TAZs outside of the TCC and TCT includes an estimated 924 new units. These units are expected to be located largely in vacant areas to the northeast, south and west of the TCC and TCT.

As the Mixed Use Project allows increased residential density in the TCC, the 2035 total and growth increment with the Project is expected to be slightly higher than the level assumed for the TSP. Redevelopment of the City-owned Times Litho site in the southeast corner of TAZ 1400 is expected to be a key focus of added residential development by 2035. The addition of 100 households to TAZ 1400 is assumed with the Mixed Use Project. Conversely, the recent down-zoning of property east of Ritchey Road and south of Pacific Avenue is expected to result in a drop of 153 households in the western end of TAZ 1407 (see Attachment B for a map of this property). 100 of these households are expected to shift to TAZ 1400, with the remainder shifting to portions of TAZ 1407 that are included in the TC or TCT. Thus, the citywide household growth control total assumed for the TSP and the combined totals for the three TAZs along the Pacific Avenue/19th Avenue corridor would remain constant.

2035 employment projections in the three TAZs were estimated at 3,667 employees for the TSP. This represents an increase of 1,405 employees over 2010 conditions. Of this total, 124 are assumed to be located in the TCC or TCT. Employment growth in three TAZs outside of the TCC or TCT is estimated at 1,281 employees. These employees would be primarily located in TAZ 1400 in areas to west of Main Street and north of 23rd Avenue where Pacific University is engaging in expansion, on the Davidson site, and at the southern end of TAZ 1407 where substantial industrial development is expected.



Table 4. Town Center and Town Center Transition Area Development Assumptions

TAZ	2035 Totals Assumed in TSP					2035 Totals Assumed with Mixed Use Project				
	Households	Retail	Service	Other	Employment Total	Households	Retail	Service	Other	Employment Total
Estimate of Development for Entire TAZs										
Total 2035										
1400	1,302	80	108	333	521	1,402	80	108	333	521
1401	1,712	175	1,171	234	1,580	1,712	175	1,171	234	1,580
1407	1,478	192	397	977	1,566	1,378	192	397	977	1,566
Totals	4,492	447	1,676	1,544	3,667	4,492	447	1,676	1,544	3,667
Growth Increment 2010-2035										
1400	281	40	52	187	279	381	40	52	187	279
1401	443	118	306	(9)	415	443	118	306	(9)	415
1407	485	99	183	429	711	385	99	183	429	711
Totals	1,209	257	541	607	1,405	1,209	257	541	607	1,405
Estimate of Development for Town Center Area										
Growth Increment 2010-2035										
1400	155	35	7	17	59	255	35	7	17	59
1401	0	0	5	0	5	0	22	18	0	40
1407	130	20	20	20	60	130	20	20	20	60
Totals	285	55	32	37	124	385	77	45	37	159
Estimate of Development for Remainder of TAZs										
Growth Increment 2010-2035										
1400	126	5	45	170	220	126	5	45	170	220
1401	443	118	301	(9)	410	443	96	288	(9)	375
1407	355	79	163	409	651	255	79	163	409	651
Totals	924	202	509	570	1,281	824	180	496	570	1,246

Note: TAZ refer to a Transportation Analysis Zone as identified in Metro’s 2014 regional travel demand model. This model was used to estimate future year traffic volumes as part of the City’s 2014 TSP Update. A map illustrating the boundaries of the Forest Grove area TAZs is attached to this memo.

Note 2: Shaded area highlights differences between TSP development assumptions and assumptions with the Mixed Use Project.

Employment growth assumptions for the Mixed Use Project in TCC and TCT areas would increase slightly from the level anticipated in the TSP, reflecting a potential shift in workers from the Davidson site (as assumed under the TSP) to the Town Center area. A total of 35 additional employees are expected with the Project.

Potential Traffic Implications

Since the growth assumptions made for the TSP in the TCC and TCT are largely consistent with the recently adopted *Comprehensive Plan*, there would be little change with the Mixed Use Project. This change focuses primarily on increased residential development in TAZ 1400 (as a result of redeveloping the Times Litho site) and in TAZ 1407 within the TCC and TCT area. A total of 153 households are expected to shift from the western end of TAZ 1407 to these redevelopment areas. However, the traffic impacts of this shift are expected to be localized in the core area where most intersections are forecast to operate within their adopted mobility standards. The exception would be the intersection of 19th Avenue at B Street which is expected to operate at Level of Service (LOS) F during the 2035 PM peak



hour. The TSP identifies a project for this location that improves operating performance to LOS B. The other location that could be affected by this traffic is the intersection of Pacific Avenue at Quince Street which is expected to exceed its ODOT mobility standard of v/c 0.99 by 2035. The TSP also includes an improvement project that is expected to bring traffic operations into conformity with the standard.

It should be noted that the additional residential density in the TCC and TCT would use the same travel corridor (i.e., Pacific Avenue) as traffic would have used from the rezoned Ritchey Road area property. Thus, future traffic volumes at critical intersections with the Mixed Use Project are not expected to be substantively different from those identified in the TSP. Additionally, increased residential densities in the TCC and TCT are expected to encourage more walk and bicycle trips to nearby retail, school and business service development. As Pacific Avenue is a major transit corridor for TriMet service linking the city to other regional destinations, an increase in transit use could also occur. Collectively, any mode shift from single occupant automobile to walking, bicycling or transit would benefit the city and regional street systems.

With a total increase of 35 employees assumed for the Mixed Use project in comparison to the TSP, associated traffic impacts are also expected to be localized and to cause no significant impact to critical study area intersections.

Commercial Corridor

Description

As shown in Figure 5, the Community Commercial (CC) zone extends east from the Town Center to Highway 47. The proposed amendments would increase the maximum residential density in CC zones from 20.28 to 30 dwelling units per acre.

Development Comparison

Table 5 provides a comparison of expected development in Commercial Corridor (CC) Area between the level assumed for 2035 in the TSP and the level assumed with the Mixed Use Project. As indicated in the table, the CC includes portions of six TAZs along the Pacific Avenue/19th Avenue corridor east of the TCC and TCT in central Forest Grove – TAZs 1401, 1402, 1403, 1404, 1406 and 1407. The TSP assumed that a total of 6,037 households would be in place in 2035 in these six TAZs. This represents an increase of 1,304 households over 2010 conditions. In the CC (a subset of these six TAZs) an estimated 176 new households would be developed based on TSP assumptions. Residential growth in the six TAZs outside of the CC includes an estimated 1,128 new units. Some of these units are expected to be located on the Davidson site (discussed under Mixed Use Area 3) and other vacant parcels in TAZ 1401. Others are expected to be located south and east of Highway 47 in the vicinity of Oak Street (TAZ 1402) and in areas to the south and west of the city center in TAZ 1407.

As noted earlier under the TCC discussion, with the Mixed Use Project, 100 new households were expected to shift from the Ritchey Road portion of TAZ 1407 to TAZ 1400 on the Times Litho redevelopment site. This reduction is shown in the shaded areas near the bottom of Table 5.

2035 employment projections in the six TAZs were estimated at 7,686 employees for the TSP. This represents an increase of 3,583 employees over 2010 conditions. Of this total, 1,200 are assumed to be located in the CC. Employment growth in six TAZs outside of the CC is estimated at 2,383 employees. These employees would be primarily located in TAZs 1402 in the area south of Highway 47 near Oak Street, in TAZ 1403 in the existing industrial area along 24th Avenue east of Highway 47, or in the industrial areas in the southern portion of TAZ 1407.



Employment growth assumptions for the TSP in the CC would be very similar to those in the Mixed Use Project with the difference largely reflecting an increase in approximately 20 employees that would shift from the Davidson site to a location elsewhere in TAZ 1401 along the CC.

Table 5. Commercial Corridor Development Assumptions

TAZ	2035 Totals Assumed in TSP					2035 Totals Assumed with Mixed Use Project				
	Households	Retail	Service	Other	Employment Total	Households	Retail	Service	Other	Employment Total
Estimate of Development for Entire TAZs										
Total 2035										
1401	1,712	175	1,171	234	1,580	1,712	175	1,171	234	1,580
1402	872	562	512	391	1,465	872	562	512	391	1,465
1403	550	229	136	951	1,316	550	229	136	951	1,316
1404	492	160	355	313	828	492	160	355	313	828
1406	933	218	576	137	931	933	218	576	137	931
1407	1,478	192	397	977	1,566	1,378	192	397	977	1,566
Totals	6,037	1,536	3,147	3,003	7,686	5,937	1,536	3,147	3,003	7,686
Growth Increment 2010-2035										
1401	443	118	306	(9)	415	443	118	306	(9)	415
1402	308	234	230	373	837	308	234	230	373	837
1403	24	137	115	637	889	24	137	115	637	889
1404	12	70	151	151	372	12	70	151	151	372
1406	32	44	245	70	359	32	44	245	70	359
1407	485	99	183	429	711	385	99	183	429	711
Totals	1,304	702	1,230	1,651	3,583	1,204	702	1,230	1,651	3,583
Estimate of Development for Commercial Corridor Area										
Growth Increment 2010-2035										
1401	0	0	5	0	5	0	20	5	0	25
1402	58	234	100	0	334	58	234	100	0	334
1403	24	137	105	65	307	24	137	105	65	307
1404	12	70	151	0	221	12	70	151	0	221
1406	32	39	185	0	224	32	39	185	0	224
1407	50	79	30	0	109	50	79	30	0	109
Totals	176	559	576	65	1,200	176	579	576	65	1,220
Estimate of Development for Remainder of TAZs										
Growth Increment 2010-2035										
1401 (1)	443	118	301	(9)	410	443	98	301	(9)	390
1402	250	0	130	373	503	250	0	130	373	503
1403	0	0	10	572	582	0	0	10	572	582
1404	0	0	0	151	151	0	0	0	151	151
1406	0	5	60	70	135	0	5	60	70	135
1407 (2)	435	20	153	429	602	335	20	153	429	602
Totals	1,128	143	654	1,586	2,383	1,028	123	654	1,586	2,363

Note: TAZ refer to a Transportation Analysis Zone as identified in Metro's 2014 regional travel demand model. This mode was used to estimate future year traffic volumes as part of the City's 2014 TSP Update. A map illustrating the boundaries of the Forest Grove area TAZs is attached to this memo.

Note 2: Shaded area highlights differences between TSP development assumptions and assumptions with the Mixed Use Project.

- (1) Includes growth on Davidson property in Mixed Use Area 3.
- (2) Includes growth in the TCC and TCT areas.



Potential Traffic Implications

Since the growth assumptions made for the TSP in the CC are very consistent with the recently adopted *Comprehensive Plan*, there would be only a slight change in future traffic volumes with the Mixed Use Project. This change focuses primarily on a reduction in traffic associated with the loss of 153 dwelling units in the northwestern corner of TAZ 1407 associated with the recent Ritchey Road area downzoning and the shift in 20 employees from the Davidson site. As noted above under the discussion of development expectations in the TCC, the residential development would likely shift to TAZ 1400 and/or to another portion of TAZ 1407. This change is not expected to significantly alter existing travel patterns in the Pacific Avenue/19th Avenue corridor, particularly in relation to the congested intersection of Pacific Avenue at Quince Street. With the modest shift in employment growth from the level assumed in the TSP, no substantive change in traffic impact is expected.

It should be noted that the Code Revisions associated with the Mixed Use Project would allow an increase in residential development on the former Albertson's site west of Highway 47 and south of Pacific Avenue (Node 1). If this development were to occur instead of some of the employment growth identified in Table 5 for TAZ 1406, the net effect would likely be to reduce vehicular trip-making in the area. This would occur for several reasons. First, trip generation for residential development, particularly multi-family dwellings on a transit corridor, would likely be less than trips for commercial development on the same acreage. Second, by encouraging a mix of residential and employment/business uses in close proximity, trips can more easily shift to walking, bicycling and/or transit. This would also reduce trips made by single occupant automobiles.

Summary of Findings and Conclusions

This section presents a short summary of the key transportation-related findings and conclusions for the Forest Grove Mixed Use Project. This information is presented separately for each Planning Area.

Mixed Use Area 1 – David Hill

The proposed increase in households over the level assumed in the TSP would generate slightly higher traffic volumes to and from Mixed Use Area 1. However, the reduction in employment-generated traffic from the level assumed in the TSP is expected to more than offset the effects of added residential traffic. Consequently, it is anticipated that traffic volumes generated by the Mixed Use Area 1 would be fully accommodated by the TSP. No additional traffic impacts are anticipated.

Mixed Use Area 2 – CPD (Gales Creek)

The identical level of both residential development and employment in Mixed Use Area 2 in comparison with the assumptions inherent in the TSP leads to the conclusion that any traffic volumes generated in this area by the project would be fully accommodated in the TSP. No additional impacts are anticipated.

Mixed Use Area 3 – Davidson Site

The identical level of residential development in Mixed Use Area 3 in comparison with the assumptions inherent in the TSP leads to the conclusion that residentially-based traffic volumes generated in this area by the project would be fully accommodated in the TSP. No additional impacts are anticipated as a result of this residential development. With a reduction in employment levels in comparison with the TSP, the Davidson site would likely generate less employment-related traffic. Thus, in the aggregate, the Mixed Use Project would generate less traffic to/from the Davidson site than would be expected with the TSP.



Town Center

The opportunity for increased residential densities that would be offered as part of the Mixed Use Project in the Town Center (TCC) and Town Center Transition (TCT) Areas could attract more multi-family residential development to the core area. However, some of this development (approximately 153 units) would likely shift from another portion of the city as a result of the recent residential downzoning project on the west side of town near Ritchey Road. Additionally, since some shift in employment growth is expected away from the Davidson site (in comparison with TSP assumptions), some small increase in employment might occur in the TC or TCT areas.

For several reasons no substantive traffic impacts are expected as a result of the residential and/or employment shifts. First, the residential shift would be located in the same general travel corridor and would generally influence the same intersections (although localized impacts might differ). Of particular concern are the two failing intersections identified in the TSP – 19th Avenue at B Street (LOS F expected in the 2035 PM peak hour) and Pacific Avenue at Quince Street (V/C in excess of 0.99 in 2035). Since the TSP identifies recommended improvements at both locations, any shift in traffic volumes can likely be accommodated.

Second, increased residential and employment densities in the TCC and TCT are expected to encourage more walk and bicycle trips to nearby retail, school and business service development. The Pacific Avenue/19th Avenue corridor is also a major transit route and an increase in transit trip-making is also expected. These mode shifts would likely reduce the level of trip-making by single occupant vehicles.

Commercial Corridor

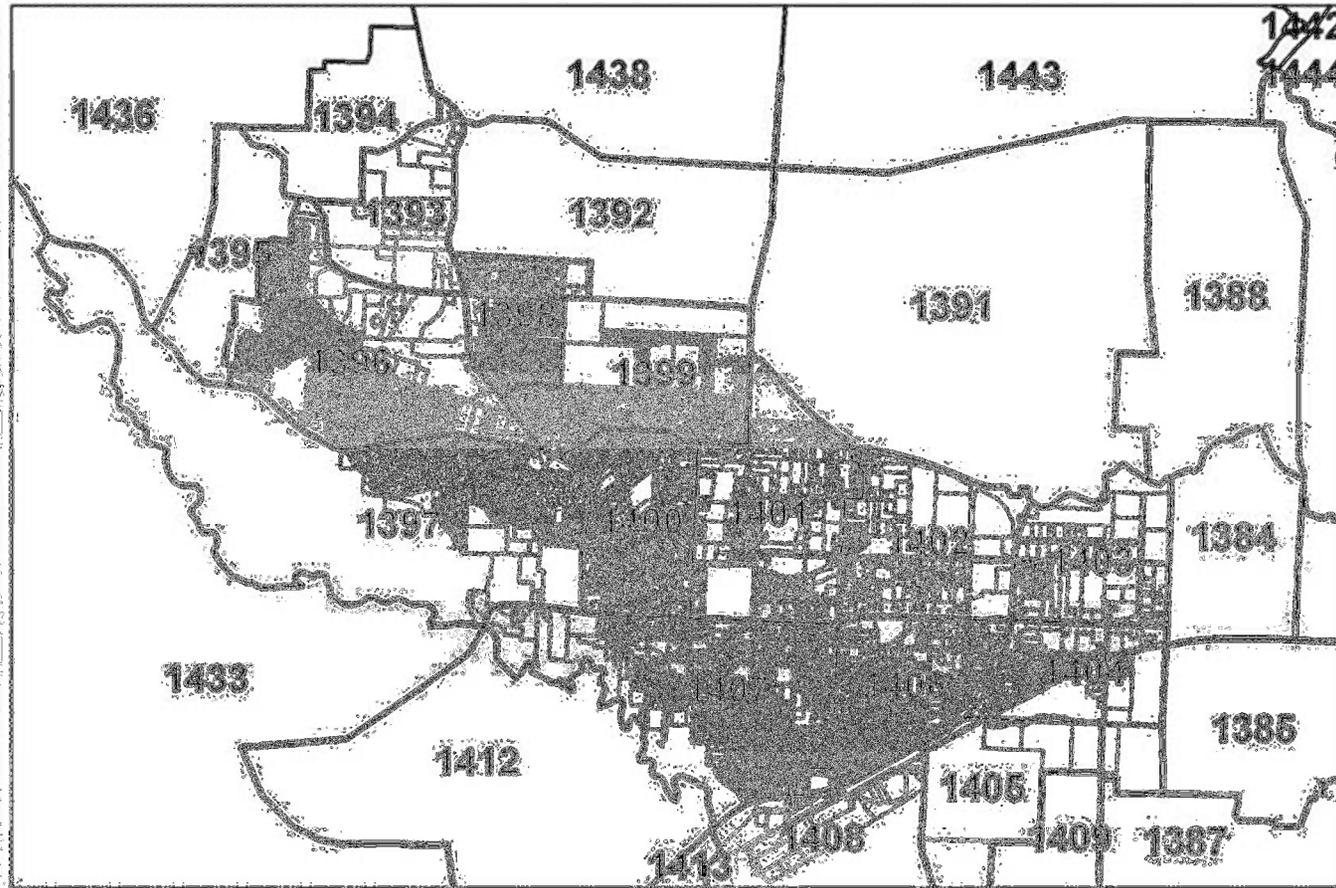
Since the growth assumptions made for the TSP in the CC are very consistent with the recently adopted *Comprehensive Plan*, there would be only a slight change in future traffic volumes with the Mixed Use Project. This change focuses primarily on the reduction of 153 dwelling units in the northwestern corner of TAZ 1407 associated with the recent Ritchey Road area downzoning and the shift in 20 employees from the Davidson site. No substantive changes in traffic impacts are expected.

It should be noted that the Code Revisions associated with the Mixed Use Project would allow an increase in residential development on the former Albertson's site west of Highway 47 and south of Pacific Avenue (Node 1). If this increase were to occur, it would likely reduce vehicular traffic for two reasons. First, a shift from expected employment land uses to multi-family residential would likely generate fewer trips based simply on the trip-making characteristics of these land uses. Second, by encouraging a mix of residential and employment/business uses in close proximity, trips can more easily shift to walking, bicycling and/or transit. This would also reduce trips made by single occupant automobiles.

ATTACHMENT A

Forest Grove Area Transportation Analysis Zones from 2013 Metro Regional Travel Demand Model

TAZ 2162



ATTACHMENT B

Proposed Comprehensive Plan Map and Zoning Map Amendment
CPA-15-00290/ZNC-15-00291

