



Planning Commission Agenda

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Tim Vohs

Andrew Landen

Grace Bergen

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The meeting location is wheelchair-accessible. For the hearing-impaired, an interpreter can be provided with 48 hours' notice prior to the meeting. For meetings in the Council Chamber, a "Personal PA Receiver" for the hearing impaired is available. To request a reasonable accommodation at this meeting, please contact Brenda Jones at 541.726.3610 or bjones@springfield-or.gov.

Meetings will end prior to 10:00 p.m. unless extended by a vote of the Planning Commission.

All proceedings before the Planning Commission are recorded.

June 4, 2019

**6:00 p.m. Work Session
Jesse Maine Meeting Room**

CALL TO ORDER

ATTENDANCE:

Chair Koivula _____, Vice Chair Sherwood _____, Vohs _____, Landen _____,
Bergen _____, Gill _____, and McGinley _____.

WORK SESSION ITEM(S)

1. MAIN STREET SAFETY PROJECT

Staff: Molly Markarian

60 Minutes

ADJOURNMENT

June 4, 2019

**7:00 p.m. Regular Session
Council Chambers**

CONVENE AND CALL TO ORDER THE REGULAR SESSION OF THE SPRINGFIELD PLANNING COMMISSION

ATTENDANCE: Chair Koivula _____, Vice Chair Sherwood _____, Vohs _____, Landen _____, Bergen _____, Gill _____, and McGinley_____.

PLEDGE OF ALLEGIANCE

ADJUSTMENTS TO THE REGULAR SESSION AGENDA

In response to a request by a member of the Planning Commission, staff or applicant; by consensus

BUSINESS FROM THE AUDIENCE

Testimony is limited to 3 minutes; testimony may not discuss or otherwise address the Plan Amendment/Zone Change appearing on this Regular Session Agenda

DELIBERATIONS ON: REQUEST FOR METRO PLAN DIAGRAM AMENDMENT AND ZONE CHANGE FOR 13.6 ACRES OF PROPERTY AT 3522 & 3530 GAME FARM ROAD, CASES 811-19-000065-TYP4 and 811-19-00066-TYP3-

Public hearing closed May 21, 2019

Staff: Andy Limbird

30 Minutes

- Commission members declaration of potential conflicts of interest; disclosure of “ex-parte” contact
- Staff report
- Planning Commission Deliberations

REPORT OF COUNCIL ACTION

BUSINESS FROM THE PLANNING COMMISSION

- Upcoming Planning Commission meetings, committee assignments, appointments or other business

BUSINESS FROM THE DEVELOPMENT AND PUBLIC WORKS DEPARTMENT

ADJOURN REGULAR SESSION OF THE SPRINGFIELD PLANNING COMMISSION

AGENDA ITEM SUMMARY

Meeting Date: 6/4/2019
Meeting Type: Work Session
Staff Contact/Dept.: Molly Markarian/DPW
Staff Phone No: 541.726.4611
Estimated Time: 60 Minutes
Council Goals: Maintain and Improve Infrastructure and Facilities

PLANNING COMMISSION (PC)

ITEM TITLE: MAIN STREET SAFETY PROJECT

ACTION REQUESTED: Review future baseline (no build) transportation forecasts, business and property owner impact literature review, and refined project Goals & Objectives; and provide feedback on draft evaluation framework.

ISSUE STATEMENT: Since the March 2019 Work Session, the project team has advanced technical tasks, refined the project Goals & Objectives based on stakeholder input, and developed a framework for evaluating infrastructure solutions developed for the corridor. The purpose of this Work Session is to review the technical findings and share key themes that have emerged from community engagement with the Planning Commission, and seek Planning Commission feedback on the draft evaluation framework.

ATTACHMENTS: ATT1: [Technical Memorandum #9: Future Baseline Forecasts & Conditions](#)
ATT2: [Technical Memorandum #3: Business & Property Owner Impact Literature Review](#)
ATT3: [Technical Memorandum #10: Goals & Objectives](#)

DISCUSSION: During the first quarter of 2019, the project team completed technical analysis of future baseline (no build) transportation conditions for the Main Street corridor and conducted a literature review of potential effects that possible infrastructure safety solutions might have on nearby businesses and property owners. During the Work Session, staff will present findings from these technical memos (Attachments 1-2).

At the March 2019 Work Session, the Planning Commission provided feedback on draft project Goals & Objectives. The project team has refined the Goals & Objectives to reflect input from community groups, project advisory committees, Planning Commission, City Council, and Main Street Governance Team. The revised Goals & Objectives (Attachment 3) will shape development of transportation improvement options for a safer Main Street.

The project Community Engagement Plan, approved by the Planning Commission in September 2018, describes key requirements of Senate Bill 408 legislation directed at the process for developing infrastructure projects that may affect access management. At the Work Session, staff will review how the process is being applied for the Main Street Facility Plan, present and seek feedback on the draft framework that will be used to evaluate infrastructure solutions for the Main Street corridor.



TECHNICAL MEMORANDUM #9:

FUTURE BASELINE FORECASTS AND CONDITIONS

DATE: May 20, 2019

TO: Molly Markarian | City of Springfield
Bill Johnston | ODOT Region 2

FROM: Kayla Fleskes, Garth Appanaitis, Lacy Brown, Jean Senechal Biggs | DKS Associates

SUBJECT: Task 6.5: Future Baseline Forecasts and Conditions
Tech Memo #9: Final

DKS Project 14180-023

This memorandum summarizes future baseline forecasts and transportation conditions for the Main Street (OR 126) corridor in Springfield, Oregon. The analyzed corridor includes 15 study intersections and is an approximately five-mile segment on OR 126 (also known as the McKenzie Highway or Main Street), as discussed in the *Existing Transportation Conditions Memorandum (TM #6)*. The corridor extends from mile point (MP) 2.98 to MP 7.88, which is roughly from S. 20th Street to 72nd Street.

The scope of the analysis was determined in conjunction with project team members and staff from the Oregon Department of Transportation (ODOT) and the City of Springfield. The analysis considered forecasted 2040 traffic volumes; future street network characteristics and intersection operations; future multimodal conditions; and future baseline corridor collision analysis. The analysis predicts a “no build” condition along Main Street for the year 2040 based on current conditions and anticipated projects. The analysis does not include any potential mitigations or roadway improvements that could result from the Main Street Safety Project. Instead, the analysis is intended to identify future conditions that should be considered as part of the planning process and inform decision-making for infrastructure solutions. The following sections of this memorandum address each of these topics and provide additional information on the following highlights:

- Traffic volumes traveling eastbound and westbound along Main Street are forecasted to increase 20 to 30 percent by 2040. The increase in traffic volume is expected to lead to an increase in intersection delay and travel times along the corridor.



- Four signalized intersections are forecasted to exceed mobility standards and experience excessive delays, reflecting a worse condition from traffic operations today in which all the signalized intersections meet mobility standards. Most notable is demand at the intersection of Main Street and Bob Straub Parkway which is forecasted to exceed capacity during the p.m. peak hour by 2040.
- Vehicle delay at the signalized intersections when traveling eastbound during the p.m. peak hour is expected to nearly double from existing conditions, which will increase vehicle travel times through the corridor by nearly 30 percent. The impacts of delay at the intersections when traveling westbound along Main Street in the p.m. peak hour are less pronounced, with only a seven percent increase in travel times over existing. The increased signalized intersection delay will also impact freight and transit travel times through the corridor during the p.m. peak hour.
- With increased congestion and delay along Main Street in the future, transit travel times will increase by nearly five percent. This will reduce the transit level-of-service (LOS) from B/C to C (on an A to F scale). Improvements being evaluated through the Main-McVay Transit Study could potentially improve the transit travel times and LOS along Main Street.
- While there are a handful of expected spot improvements to the pedestrian and bicycle network near the study area that will improve safety and connectivity, much of the corridor will continue to remain a high-stress environment for pedestrians and bicyclists. As discussed in the *Existing Transportation Conditions Memo (TM #6)*, multiple factors would need to be addressed to create a low-stress environment for multimodal travel.
- Increased traffic volumes along Main Street will also contribute to a degradation of safety performance. The study corridor as a whole is expected to see a 19% increase in total crashes by 2040, equating to nearly 19 more crashes per year. Individual intersections and segments are expected to see an increase in crashes of 10% to 135%. The magnitude of the increase is directly related to the forecasted increase in traffic volume and will affect all modes of travel.
- Along the Main Street corridor, the average access density is 75 access points¹ per mile, with a range of 20 to 133 access points per mile, well exceeding ODOT access management standards. Research indicates that every additional access point above 10 per mile increases the risk of a crash by approximately 4%. This means that some segments of the Main Street corridor experience up to a 500% increased crash risk over a similar facility with an access density that follows ODOT access management standards. If the number of access points along Main Street remains the same, the combination of the existing access density and increased traffic volumes will continue to degrade safety on the corridor.

¹ Access points are defined as driveways and side street intersections.



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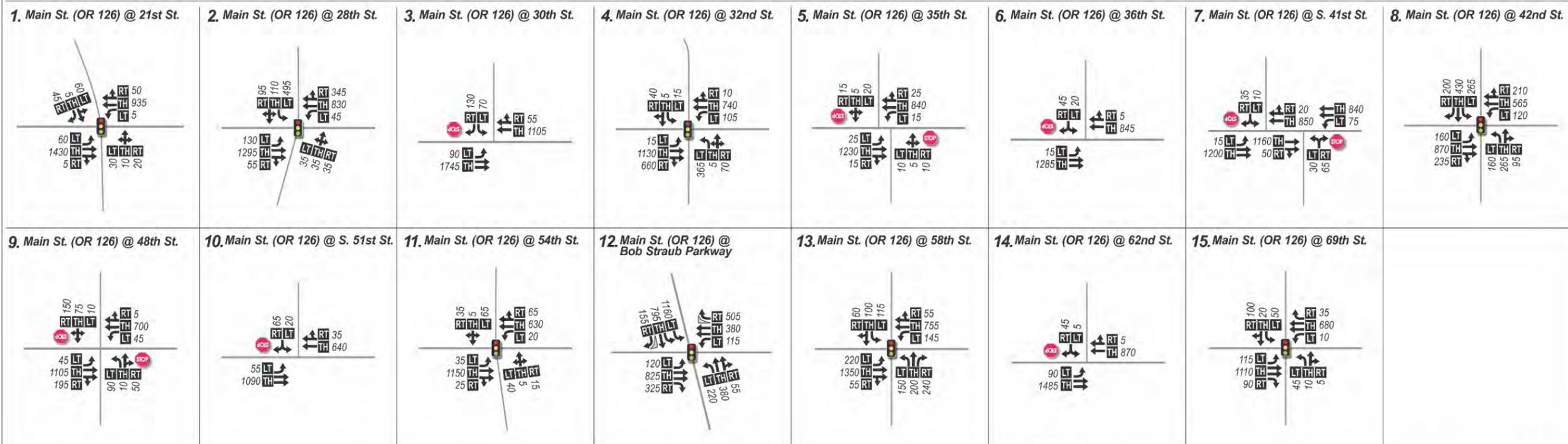
FUTURE BASELINE VEHICLE OPERATIONS

2040 Vehicle Volumes

Forecasted motor vehicle volumes were developed using the Lane Council of Governments (LCOG) regional travel demand model for the year 2040. Future year 2040 baseline volumes were post processed using National Cooperative Highway Research Program (NCHRP) report 765 guidelines, as discussed in the *Transportation Analysis Methods and Assumptions* Memorandum (TM #4). Intersection vehicle turn movement volumes were forecasted at all 15 study intersections² along the Main Street corridor for the p.m. peak hour and are shown in Figure 1. Also included in Figure 1 are the lane configurations and traffic control at the study intersections, which are assumed to remain the same as existing conditions. In addition to the intersection turning movement counts, daily traffic volumes were forecasted for each of the safety study segments based on growth rates from the regional travel demand model.

In general, traffic volumes along Main Street are forecasted to increase by approximately 25 to 30 percent eastbound and 20 to 25 percent westbound by 2040 during the p.m. peak hour, which accounts for approximately 150 to 275 additional vehicles in each direction during the p.m. peak hour. The intersection of Main Street/Bob Straub Parkway would continue to experience some of the highest turning movements along the corridor, with over 1,060 southbound left-turning vehicles during the p.m. peak hour.

² Traffic volumes are forecasted for all study intersections, including both signalized and unsignalized study intersections. However, the existing signalized intersections experience higher cross street traffic volume and are more impactful to operations along Main Street. Therefore, the traffic analysis for the future year focused on signalized intersections locations.



LEGEND

- # - Study Intersection
- Traffic Signal
- Stop Sign
- Lane Configuration
- Volume Turn Movement

DKS

No Scale

FIGURE 1

FUTURE 2040 WEEKDAY PM PEAK HOUR TRAFFIC VOLUMES

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Mobility Standards

Agency mobility standards often require intersections to meet level of service (LOS) or volume-to-capacity (V/C) intersection operation thresholds.

- The intersection LOS is similar to a “report card” rating based upon average vehicle delay. Level of service A, B, and C indicate conditions where traffic moves without significant delays over periods of peak hour travel demand. Level of service D and E are progressively more congested operating conditions with more motor vehicle delay. Level of service F represents conditions where average motor vehicle delay has become excessive and demand has exceeded capacity. This condition is typically evident in long queues, vehicles failing to clear the intersection during one green phase, and delays.
- The volume-to-capacity (V/C) ratio represents the level of saturation of the intersection or individual movement. It is determined by dividing the peak hour traffic volume by the maximum hourly capacity of an intersection or turn movement. When the V/C ratio approaches 0.95, operations become unstable and small disruptions can cause the traffic flow to break down, as seen by the formation of excessive queues and vehicles failing to clear the intersection during one green phase.

The entire Main Street (OR 126) corridor is located within the City of Springfield, serves as a regional route for the Eugene-Springfield Metropolitan Area, and is an ODOT facility classified as a Statewide Highway. According to the *1999 Oregon Highway Plan (OHP)*, ODOT mobility standards are given as V/C ratios and are based on the highway category. The mobility standards³ for Main Street (OR 126) are listed in Table 1. The City of Springfield’s standards (which are based on LOS rather than ODOT’s V/C metric) are also listed in Table 1.

Table 1. Main Street Intersection Mobility Standards

Major Roadway	Jurisdiction	Mobility Standard
Main Street (OR 126)	ODOT (Statewide Highway)	0.90 v/c ¹ (0.95 for unsignalized side street approaches)
Main Street (OR 126)	City of Springfield	LOS D or better

¹ The intersection of Bob Straub Parkway and OR 126B is classified a Statewide Expressway, with a mobility standard of 0.85 v/c.

Future Baseline Intersection Operations

The future baseline performance of the intersections was evaluated using Synchro™ software, which employs methodology from the *Highway Capacity Manual (HCM) 6th Edition*.⁴ The signalized study intersections were

³ City of Springfield and ODOT are in the process of evaluating and potentially approving alternative v/c mobility targets for the Main Street/42nd Street intersection and the Main Street/Bob Straub Parkway intersection that would allow for more motor vehicle delay than the 0.90 v/c mobility standard that is currently approved for those locations.

⁴ *Highway Capacity Manual 6th Edition*, Transportation Research Board, Washington, D.C., 2016.



evaluated to determine intersection levels of service (LOS) and volume-to-capacity (V/C) ratios. The traffic analysis focused on the signalized intersections since they experience the highest cross-street traffic volumes and are most impactful to mobility along the corridor. Intersection signal timing parameters were optimized based on the forecasted future volumes, but no infrastructure improvements were assumed for baseline conditions.

The results of the intersection operations analysis for the signalized study intersections are listed in Table 2. Under existing p.m. peak conditions, all the signalized study intersections meet City of Springfield and ODOT mobility standards.⁵ With the increase in traffic volume by 2040, three signalized intersections fail to meet ODOT mobility standards (0.90 v/c) and four fail to meet City of Springfield mobility standards (LOS D or better). When the V/C ratio approaches 0.95, operations become unstable and small disruptions can cause the traffic flow to break down, as seen by the formation of excessive queues, vehicles failing to clear the intersection during one green phase, and delays. Both 28th Street and 42nd Street have v/c ratios at or below 0.95 but the intersection at Bob Straub Parkway is expected to exceed capacity. HCM 6 reports are provided in Appendix A⁶.

Table 2. Main Street 2040 P.M. Peak Hour Intersection Operations

Intersection	Control Type	Average Delay (s)	LOS	V/C
21st Street	Signalized	10.0	A	0.64
28th Street	Signalized	62.1	E	0.95
S. 32nd Street	Signalized	29.9	C	0.81
42nd Street	Signalized	60.9	E	0.92
54th Street	Signalized	39.8	D	0.54
Bob Straub Pkwy	Signalized	95.5	F	1.16
58th Street	Signalized	61.1	E	0.90
69th Street	Signalized	9.8	A	0.52

For signalized intersections, results reported for the intersection as a whole.

Bold/Shaded indicates not meeting ODOT/City of Springfield mobility standards.

Corridor Travel Time

The future baseline corridor travel time was estimated for the p.m. peak hour using the results of the intersection operations analysis. Intersection approach delay is a key component of delay along a corridor. HCM approach delay for each signalized intersection along the corridor was aggregated for both the

⁵ Note: The three intersections that failed mobility standards under existing p.m. peak hour conditions were all unsignalized.

⁶ Note: For signalized intersections, an intersection v/c ratio is not directly reported in Synchro but was calculated using HCM 6 Equations 19-30 and 19-31.



eastbound and westbound through traffic. The intersection delay was added to the free flow travel time to determine the overall travel time through the approximately five-mile study corridor⁷, as listed in Table 3 below.

Vehicle delay at the signalized intersections when traveling eastbound during the p.m. peak hour through Main Street are expected to nearly double from existing conditions, which will increase vehicle travel times through the corridor by nearly 30 percent. The impacts of increased intersection delay are less pronounced westbound, with only a seven percent increase in travel times through the corridor over existing conditions.

In 2040, evening travel times westbound are projected to be over two minutes faster than traveling eastbound along the corridor, in part due to the higher eastbound volumes during the p.m. peak hour. The four intersections that fail to meet the City of Springfield mobility standards (28th Street, 42nd Street, Bob Straub Parkway, 58th Street) account for 70 to 85 percent of the intersection approach delay when traveling through the corridor. The intersection approach delay traveling eastbound in the future is over double the intersection delay experienced today during the p.m. peak hour, which will lead to over a three-minute increase in travel time.

Table 3. Main Street Corridor Travel Time (2040 p.m. peak hour)

	Westbound (mins)	Eastbound (mins)
Free Flow Travel Time	7.9	7.9
Intersection Approach Delay	3.8	6.1
Total Travel Time	11.7	14.0

Vehicle Connectivity and Access

The 2035 Springfield Transportation System Plan (TSP)⁸ proposes a handful of new roadway connections, including connectivity to Main Street and a handful of limited parallel corridors. However, Main Street will continue to provide a crucial vehicle east-west route through Springfield and the region as traffic volumes increase. Multimodal connectivity and access in the study area will continue to be limited in the future if additional changes to the roadway network are not made (For further discussion of multimodal access, see the following Future Pedestrian, Bicyclist, and Transit Analysis section).

As summarized in the *Existing Transportation Conditions Memorandum (TM #6)*, there are numerous public and private access points along Main Street and much of the corridor does not meet ODOT access

⁷ This method provides a high-level summary of the change in travel time. However, it does not account for other operational characteristics that would require more rigorous analysis to quantify including delays from vehicles turning into or out of driveways, buses blocking a travel lane or merging into the center left turn lane.

⁸ 2035 Springfield Transportation System Plan (TSP), Figure 10



management standards.⁹ Based on the current number of access points per mile on Main Street, access spacing standards are not expected to be met under future baseline conditions for much of the corridor. Along the Main Street corridor, the average access density is 75 access points per mile, with a range of 20 to 133 access points per mile. Research indicates that every additional access point above 10 per mile (which equates to a spacing of 528 feet, roughly equivalent to the ODOT access spacing requirements on this highway) increases the risk of a crash by approximately 4%. This means that some segments of the Main Street corridor experience up to a 500% increased crash risk over a similar facility with an access density that follows ODOT access management standards. If the number of access points along Main Street remains the same, the combination of the existing access density and increased traffic volumes will continue to degrade the safety performance of the corridor.

Freight Mobility

Future freight use along Main Street was quantified using the ODOT Oregon Statewide Integrated Model (SWIM 2.5). Commodity flows for freight vehicles were estimated on Main Street east and west of the Eugene-Springfield Expressway/Bob Straub Parkway. Table 4 lists the estimated commodity flow for the average weekday in the future. The model estimates that on an average weekday in 2037, 17,000 tons of commodities are carried by freight east of Bob Straub Parkway, which is almost three times more than the estimated 6,000 tons of commodities carried by freight west of Bob Straub Parkway. Much of the freight traveling east of Bob Straub Parkway will continue to utilize the Eugene-Springfield Expressway (OR 126), accounting for the drop in commodity flows between Main Street/69th Street and Main Street/42nd Street.

Machinery, precision instruments (such as electronics or medical instruments) and transportation equipment is projected to account for the highest share of value of commodities along the corridor, while forest and wood products continue to remain the largest commodity by tonnage.

Compared to existing conditions, Main Street is expected to see a 20 percent increase in commodity flow tonnage based on a mix of local and regional economic growth. The value of commodities traveling along Main Street will also increase from existing conditions, with a nearly 30 percent increase in the value of commodities west of Bob Straub Parkway and a 60 percent increase in value east of Bob Straub Parkway. The largest driver in the increased value of commodity flows is the increase in machinery, instruments and transportation equipment in the future compared to existing conditions.

⁹ *Oregon Highway Plan*, Action 3A.1, 2015. The minimum access spacing is 500 feet for urban statewide highways with a posted speed of 35 mph.



Table 4. Future¹⁰ Estimated Average Weekday Commodity Flows, both directions

Commodity	Main Street (OR 126B) & 42 nd Street		Main Street (OR 126) & 69 th Street	
	Value	Tons	Value	Tons
Clay, Minerals & Stone	1%	23%	1%	24%
Food & Kindred Products	12%	12%	16%	15%
Forest & Wood Products	15%	52%	14%	44%
Machinery, Instruments, Trans Equip.	36%	3%	32%	3%
Other Misc.	9%	6%	12%	6%
Petroleum, Coal & Chemicals	27%	4%	22%	7%
Pulp & Paper Products	< 1%	< 1%	1%	1%
Total (2019 dollars)	\$ 4,300,000	6,000	\$ 11,400,000	17,000

FUTURE PEDESTRIAN, BICYCLE, AND TRANSIT ANALYSIS

Expected bicycle and pedestrian facility improvements are documented in this section, along with an analysis of future pedestrian, bicycle, and transit conditions within the study area. The multimodal analysis includes a Pedestrian Level of Traffic Stress (PLTS), Bicycle Level of Traffic Stress (BLTS), and Qualitative Multimodal Assessment analysis for transit.

Pedestrian Conditions and Level of Traffic Stress

Under baseline conditions in the future, pedestrian access and facility conditions along the corridor will remain relatively unchanged. From the TSP, it is likely in the next 20 years an enhanced mid-block crosswalk will be added on Main Street near 38th Street and a signal will be added at Main Street and Mountaingate Drive, leading to enhanced pedestrian crossing opportunities at these locations. However, much of the corridor does not have any planned improvements to address pedestrian access or to improve the comfort of pedestrian facilities.

Future PLTS was analyzed at segments, intersections and pedestrian crossings using ODOT *Analysis and Procedures Manual* (APM)¹¹ methods. PLTS is measured on a scale from LTS 1 to LTS 4, as described in TM #6. The majority of the Main Street corridor will remain a PLTS 3 or 4 in the future (which indicates that it is not acceptable for the majority of users). The high speeds of the roadway combined with the limited physical buffers between narrow sidewalks and the travel lanes continue to lead to a high-stress environment for pedestrians under the future baseline.

¹⁰ Projected 2037 commodity flows

¹¹ *Analysis and Procedures Manual*, Chapter 14, Oregon Department of Transportation, 2018



Bicycle Conditions and Level of Traffic Stress

In the future, bicyclist access along and near the corridor will improve slightly over existing conditions. It is expected that improvements to the parallel Virginia-Daisy Bikeway route will make biking safer and more comfortable between South 32nd Street and Bob Straub Parkway, providing an alternate route for bicyclists that will benefit longer distance bicycle trips. However, there aren't any planned improvements to address bicyclist access or the comfort of cycling facilities directly along the Main Street corridor, which would improve access to businesses, residences and other land uses within the project area

Bicycle level of traffic stress (BLTS) was analyzed at segments, approaches and intersection crossings using ODOT APM methodology. BLTS is measured on a scale from LTS 1 to LTS 4, as described in the TM #6. With no significant changes from existing, the future baseline BLTS for the Main Street corridor is expected to remain LTS 4 (representing a high level of stress) due to the many unsignalized intersection crossings and high vehicle speeds. In addition, the corridor has two lanes of traffic in each direction and bike lanes less than seven feet, leading to a high-stress bicycle environment. For the facility to provide an LTS 2 experience, a buffered bike lane (a bike lane physically separated from vehicle travel lanes by a painted buffer or vertical barrier) at least seven feet wide in total with adjacent vehicle speeds of 35 mph or less¹² would need to be provided. Also, crossing treatments at intersections for cyclists accessing Main Street from north-south routes, as well as routes parallel to the corridor, would need to be considered to create low-stress bicycle crossings and reduce barriers to using the facility.

Future Transit Conditions and Analysis

Transit enhancements are anticipated along the Main Street corridor by 2040. The Main-McVay Transit Study is currently identifying service enhancements to Route 11. The potential enhancements advanced by the Main Street Governance Team for the Main-McVay Transit Study include: better amenities at ground level stops (such as trash receptacles, benches, shelters, automated fare collection); increased service in response to demand; and transit enhancements that would improve transit travel times, including transit signal priority or queue jumps, roundabouts, and stop consolidation¹³. However, no transit enhancements were assumed for the 2040 baseline operational analysis. By 2040, scheduled headways between vehicles are expected to remain ten to fifteen minutes during most of the day.

Transit vehicles along Main Street are expected to primarily run in mixed-traffic in the future. Under the future baseline forecasts, transit vehicles were assumed to run only in mixed-traffic. Transit vehicles will likely be delayed by increasing congestion at traffic signals along Main Street. This will impact future transit travel times.

Transit Travel Time

Under the future baseline travel forecasts, conditions will worsen slightly for transit. As travel times increase along the corridor, the transit travel times are expected to also increase. Based on the additional intersection delay along the corridor discussed in the Corridor Travel Time section above, transit travel times will increase

¹² The posted speed on Main Street is 35 mph west of 62nd Street and 45 mph east of 62nd Street.

¹³ Main-McVay Transit Study, Transit Design Options by Corridor Segments, <http://ourmainstreetspringfield.org/transit-design-options-by-corridor-segments/>



by over three minutes eastbound during the p.m. peak hour and nearly one minute westbound during the p.m. peak hour. This is roughly a five percent increase in the total transit travel time during the p.m. peak hour, due to increased congestion at the signalized intersections.

Qualitative Multimodal Assessment for Transit

A qualitative multimodal assessment (QMA) was conducted for transit along the study corridor. QMA results in grades from A to F, similar to level of service (LOS) for vehicles¹⁴, as discussed in TM#6.

Within the study corridor, it is expected that the future LOS for Route 11 would drop from LOS B and C to only LOS C due to increased travel times associated with increased congestion and delay¹⁵. Improving transit travel times and speed by reducing intersection approach delay (through roundabouts or traffic signal improvements) would improve the overall transit LOS along Main Street. Options that the Main-McVay Transit Study is currently investigating (such as queue jumps, transit signal priority, and stop consolidation) would help mitigate the impact of additional delays on transit vehicles. Increasing transit speed, along with implementing pedestrian improvements, would improve the overall transit LOS along Main Street.

SAFETY ANALYSIS

The Highway Safety Manual (HSM) Predictive Method, which was used to evaluate the existing safety performance of the corridor as summarized in Tech Memo #6, can also be used to predict future safety performance. The future baseline safety performance of the 15 intersections and 16 roadway segments is summarized below.

Safety Analysis Methodology

The future baseline safety evaluation accounts only for future traffic volume growth. No changes to infrastructure or traffic control were assumed. For existing conditions, the HSM Predictive Method provided a means for understanding the safety performance of a segment, intersection, or corridor compared to the expected safety performance of a facility with the same characteristics. For future conditions, it provides a means for understanding the expected change in safety performance over time, or the relative safety performance of different design alternatives.

The HSM predictive method calculates two metrics of safety performance – the predicted and expected crash frequency of the study location. The predicted crash frequency is calculated using statistical models of similar facility types nationwide. The expected crash frequency goes one step further by evaluating site-specific crash history and takes into account the natural variation in crash patterns. The following section presents the net

¹⁴ QMA is qualitative and used for comparing between scenarios rather than for standalone analysis.

¹⁵ The method for calculating travel times through the corridor provides a high-level summary of the change in travel time. However, it does not account for other operational characteristics that would require more rigorous analysis to quantify including delays from vehicles turning into or out of driveways, buses merging into traffic, or alighting/boarding delays with increased ridership in the future.



change in expected crash frequency (future crashes minus existing crashes) that is anticipated as a result of the forecasted increase in traffic volumes in the study area.

Safety Analysis Results

Table 5 presents a summary comparison of the expected crashes for both existing and future (2040) baseline conditions.

Table 5. Highway Safety Manual Analysis Results for Study Corridor

Crash Type	Existing (2018) Expected Crashes Per Year	Future (2040) Expected Crashes Per Year	Net Change in Expected Crashes (Future – Existing)	
Multiple Vehicle	84.9	101.8	16.9	19.9%
Single Vehicle	8.7	10.0	1.3	14.9%
Pedestrian	2.7*	3.1*	0.4	14.8%
Bicycle	0.8*	1.1*	0.3	37.5%
Total	97.2	116.0	18.8	19.3%

*The HSM analysis does not calculate the Expected crash frequency for bicycle and pedestrian crashes. The Predicted crash frequency is reported for those crash types in this table.

As shown in Table 5, the study corridor is expected to see a 19.3% increase in total crashes by 2040, equating to nearly 19 more crashes per year, as a result of increased traffic volumes alone. Similar comparisons are provided for each individual study intersection and study segment in Table 6 and Table 7, respectively.

Table 6. Highway Safety Manual Analysis Results for Study Intersections

Cross Street	Existing (2018) Expected Crashes Per Year	Future (2040) Expected Crashes Per Year	Net Change in Expected Crashes (Future – Existing)	
21st Street	2.12	2.48	0.36	17.2%
28th Street	5.74	6.42	0.67	11.7%
30th Street	1.40	1.79	0.39	27.8%
32nd Street	3.53	3.96	0.43	12.1%
35th Street	1.24	1.39	0.16	12.6%
36th Street	0.32	0.44	0.12	38.8%
41st Street	0.73	1.06	0.32	44.2%
42nd Street	8.58	9.86	1.29	15.0%
48th Street	0.50	0.93	0.43	85.1%
S 51st Street	0.34	0.79	0.46	135.3%
54th Street	2.69	3.26	0.57	21.2%
Bob Straub Pkwy	5.98	6.82	0.85	14.2%
58th Street	5.62	6.22	0.60	10.7%
62nd Place	0.47	0.61	0.14	30.0%
69th Street	2.34	2.89	0.56	23.9%



Table 7. Highway Safety Manual Analysis Results for Study Segments¹⁶

From	To	Existing (2018) Expected Crashes Per Year	Future (2040) Expected Crashes Per Year	Net Change in Expected Crashes (Future – Existing)	
S. 20th Street	21st Street	0.51	0.70	0.18	35.8%
21st Street	28th Street	3.90	4.95	1.04	26.7%
28th Street	30th Street	3.26	4.14	0.88	26.9%
30th Street	32nd Street	0.83	1.11	0.27	32.8%
32nd Street	35th Street	2.77	3.24	0.47	17.0%
35th Street	36th Street	0.69	0.83	0.14	20.6%
36th Street	41st Street	5.53	6.60	1.07	19.3%
41st Street	42nd Street	2.41	2.86	0.45	18.6%
42nd Street	48th Street	9.65	11.52	1.87	19.4%
48th Street	S. 51st Street	2.47	3.05	0.58	23.3%
S. 51st Street	54th Street	3.15	3.87	0.72	22.8%
54th Street	Bob Straub Pkwy.	1.68	1.91	0.22	12.9%
Bob Straub Pkwy.	58th Street	3.26	3.68	0.42	12.7%
58th Street	62nd Place	5.16	6.12	0.95	18.4%
62nd Place	69th Street	5.19	6.14	0.94	18.2%
69th Street	S. 72nd Street	1.55	2.04	0.49	31.5%

As shown in Table 6 and Table 7, individual intersections and segments are expected to see an increase in crashes ranging from 10% to 135% by 2040. The magnitude of the increase is directly related to the forecasted increase in traffic volume at that location.

Without improvements, the safety performance of the Main Street corridor will continue to degrade as traffic volumes increase over the next 20-plus years.

¹⁶ Segment lengths vary. Segment analysis takes segment length into account in calculations.

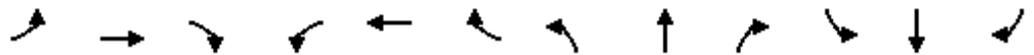


APPENDIX A: HCM 6 REPORTS

HCM 6th Signalized Intersection Summary

101: 21st St & OR 126

03/11/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	1430	5	5	935	50	30	10	20	60	5	45
Future Volume (veh/h)	60	1430	5	5	935	50	30	10	20	60	5	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.98		0.98	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1573	1573	1300	1695	1695	1750	1750	1750	1750	1750	1750
Adj Flow Rate, veh/h	62	1474	5	5	964	52	31	10	21	62	5	46
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	13	13	33	4	4	0	0	0	0	0	0
Cap, veh/h	91	1834	6	17	1740	94	182	68	73	331	22	213
Arrive On Green	0.05	0.60	0.58	0.01	0.56	0.54	0.13	0.15	0.13	0.13	0.15	0.15
Sat Flow, veh/h	1667	3054	10	1238	3106	168	509	468	500	1322	151	1456
Grp Volume(v), veh/h	62	721	758	5	500	516	62	0	0	67	0	46
Grp Sat Flow(s),veh/h/ln	1667	1494	1571	1238	1611	1663	1478	0	0	1473	0	1456
Q Serve(g_s), s	1.8	18.7	18.7	0.2	9.9	10.0	0.0	0.0	0.0	0.0	0.0	1.4
Cycle Q Clear(g_c), s	1.8	18.7	18.7	0.2	9.9	10.0	1.9	0.0	0.0	1.8	0.0	1.4
Prop In Lane	1.00		0.01	1.00		0.10	0.50		0.34	0.93		1.00
Lane Grp Cap(c), veh/h	91	897	943	17	902	931	294	0	0	324	0	213
V/C Ratio(X)	0.68	0.80	0.80	0.29	0.55	0.55	0.21	0.00	0.00	0.21	0.00	0.22
Avail Cap(c_a), veh/h	312	1411	1484	89	1335	1379	858	0	0	872	0	783
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.3	7.7	7.7	24.5	7.0	7.1	19.4	0.0	0.0	19.5	0.0	18.9
Incr Delay (d2), s/veh	6.5	1.9	1.8	6.6	0.5	0.5	0.3	0.0	0.0	0.2	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	4.2	4.4	0.1	2.3	2.4	0.6	0.0	0.0	0.7	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.8	9.6	9.5	31.1	7.6	7.6	19.7	0.0	0.0	19.7	0.0	19.3
LnGrp LOS	C	A	A	C	A	A	B	A	A	B	A	B
Approach Vol, veh/h		1541			1021			62				113
Approach Delay, s/veh		10.4			7.7			19.7				19.5
Approach LOS		B			A			B				B
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.7	34.1		11.3	6.7	32.1		11.3				
Change Period (Y+Rc), s	4.5	5.0		5.0	4.5	5.0		5.0				
Max Green Setting (Gmax), s	3.1	46.4		26.0	8.9	40.6		26.0				
Max Q Clear Time (g_c+I1), s	2.2	20.7		3.9	3.8	12.0		3.8				
Green Ext Time (p_c), s	0.0	8.4		0.1	0.0	4.7		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				10.0								
HCM 6th LOS				A								

HCM 6th Signalized Intersection Summary

102: 28th St & OR 126

03/11/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕			↕		↖	↕	
Traffic Volume (veh/h)	130	1295	55	45	830	345	35	35	35	350	255	95
Future Volume (veh/h)	130	1295	55	45	830	345	35	35	35	350	255	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1709	1709	1477	1723	1723	1518	1518	1518	1750	1450	1450
Adj Flow Rate, veh/h	138	1378	0	48	883	367	37	37	37	372	271	101
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	3	3	20	2	2	17	17	17	0	22	22
Cap, veh/h	141	1404		59	877	362	30	30	30	489	295	110
Arrive On Green	0.08	0.43	0.00	0.04	0.39	0.39	0.05	0.06	0.05	0.29	0.29	0.29
Sat Flow, veh/h	1667	3333	0	1407	2248	928	470	470	470	1667	1007	375
Grp Volume(v), veh/h	138	1378	0	48	641	609	111	0	0	372	0	372
Grp Sat Flow(s),veh/h/ln	1667	1624	0	1407	1637	1540	1410	0	0	1667	0	1382
Q Serve(g_s), s	7.8	39.7	0.0	3.2	37.0	37.0	6.0	0.0	0.0	19.3	0.0	24.7
Cycle Q Clear(g_c), s	7.8	39.7	0.0	3.2	37.0	37.0	6.0	0.0	0.0	19.3	0.0	24.7
Prop In Lane	1.00		0.00	1.00		0.60	0.33		0.33	1.00		0.27
Lane Grp Cap(c), veh/h	141	1404		59	639	601	89	0	0	489	0	406
V/C Ratio(X)	0.98	0.98		0.81	1.00	1.01	1.24	0.00	0.00	0.76	0.00	0.92
Avail Cap(c_a), veh/h	141	1404		59	639	601	89	0	0	492	0	408
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.3	26.5	0.0	45.0	28.9	28.9	44.7	0.0	0.0	30.5	0.0	32.4
Incr Delay (d2), s/veh	70.0	19.6	0.0	54.9	36.7	40.0	174.6	0.0	0.0	6.9	0.0	25.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	18.0	0.0	2.0	20.1	19.4	6.4	0.0	0.0	8.4	0.0	10.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	113.3	46.2	0.0	99.9	65.6	68.9	219.3	0.0	0.0	37.4	0.0	57.7
LnGrp LOS	F	D		F	F	F	F	A	A	D	A	E
Approach Vol, veh/h		1516	A		1298			111			744	
Approach Delay, s/veh		52.3			68.4			219.3			47.5	
Approach LOS		D			E			F			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	45.0		31.8	12.0	41.0		10.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	3.0	40.0		27.0	7.0	36.0		5.0				
Max Q Clear Time (g_c+I1), s	5.2	41.7		26.7	9.8	39.0		8.0				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	62.1
HCM 6th LOS	E

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

104: S 32nd St/32nd St & OR 126

03/11/2019

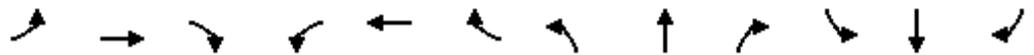


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	1130	660	105	740	10	220	150	70	15	5	40
Future Volume (veh/h)	15	1130	660	105	740	10	220	150	70	15	5	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1736	1750	1654	1695	1695	1736	1750	1750	1750	1750	1750
Adj Flow Rate, veh/h	16	1189	695	111	779	11	232	158	74	16	5	42
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	1	0	7	4	4	1	0	0	0	0	0
Cap, veh/h	28	1583	703	144	1802	25	308	210	98	107	10	85
Arrive On Green	0.02	0.48	0.48	0.09	0.55	0.55	0.19	0.19	0.18	0.06	0.06	0.06
Sat Flow, veh/h	1667	3299	1465	1576	3251	46	1654	1124	526	1667	157	1316
Grp Volume(v), veh/h	16	1189	695	111	386	404	232	0	232	16	0	47
Grp Sat Flow(s),veh/h/ln	1667	1650	1465	1576	1611	1687	1654	0	1650	1667	0	1472
Q Serve(g_s), s	0.9	26.3	42.1	6.2	12.6	12.6	11.9	0.0	11.9	0.8	0.0	2.8
Cycle Q Clear(g_c), s	0.9	26.3	42.1	6.2	12.6	12.6	11.9	0.0	11.9	0.8	0.0	2.8
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.32	1.00		0.89
Lane Grp Cap(c), veh/h	28	1583	703	144	893	935	308	0	308	107	0	95
V/C Ratio(X)	0.58	0.75	0.99	0.77	0.43	0.43	0.75	0.00	0.75	0.15	0.00	0.50
Avail Cap(c_a), veh/h	93	1583	703	158	893	935	581	0	580	567	0	501
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.8	19.0	23.1	39.8	11.7	11.7	34.5	0.0	34.6	39.6	0.0	40.8
Incr Delay (d2), s/veh	13.4	2.1	31.2	18.1	0.3	0.3	2.8	0.0	2.8	0.5	0.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	9.6	19.1	3.1	4.1	4.3	4.9	0.0	4.9	0.3	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.2	21.0	54.3	58.0	12.0	12.0	37.3	0.0	37.4	40.1	0.0	43.7
LnGrp LOS	E	C	D	E	B	B	D	A	D	D	A	D
Approach Vol, veh/h		1900			901			464				63
Approach Delay, s/veh		33.5			17.7			37.3				42.8
Approach LOS		C			B			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.2	47.0		20.7	5.5	53.7		9.8				
Change Period (Y+Rc), s	4.5	4.8		4.5	4.5	4.8		4.5				
Max Green Setting (Gmax), s	8.5	42.2		31.0	4.5	46.2		30.0				
Max Q Clear Time (g_c+I1), s	8.2	44.1		13.9	2.9	14.6		4.8				
Green Ext Time (p_c), s	0.0	0.0		1.3	0.0	3.4		0.2				
Intersection Summary												
HCM 6th Ctrl Delay				29.9								
HCM 6th LOS				C								

HCM 6th Signalized Intersection Summary

109: 42nd St & OR 126

03/11/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	870	235	120	565	210	160	265	95	265	430	200
Future Volume (veh/h)	160	870	235	120	565	210	160	265	95	265	430	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1723	1723	1736	1709	1709	1723	1723	1723	1723	1736	1695
Adj Flow Rate, veh/h	163	888	240	122	577	214	163	270	97	270	439	204
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	1	3	3	2	2	2	2	1	4
Cap, veh/h	183	879	237	136	735	272	182	300	108	284	541	587
Arrive On Green	0.11	0.35	0.34	0.08	0.32	0.31	0.11	0.25	0.25	0.17	0.31	0.30
Sat Flow, veh/h	1667	2541	686	1654	2312	855	1641	1204	432	1641	1736	1417
Grp Volume(v), veh/h	163	571	557	122	405	386	163	0	367	270	439	204
Grp Sat Flow(s),veh/h/ln	1667	1637	1591	1654	1624	1544	1641	0	1636	1641	1736	1417
Q Serve(g_s), s	10.4	37.1	37.1	7.8	24.3	24.5	10.5	0.0	23.3	17.5	25.0	10.6
Cycle Q Clear(g_c), s	10.4	37.1	37.1	7.8	24.3	24.5	10.5	0.0	23.3	17.5	25.0	10.6
Prop In Lane	1.00		0.43	1.00		0.55	1.00		0.26	1.00		1.00
Lane Grp Cap(c), veh/h	183	566	550	136	516	491	182	0	408	284	541	587
V/C Ratio(X)	0.89	1.01	1.01	0.90	0.78	0.79	0.89	0.00	0.90	0.95	0.81	0.35
Avail Cap(c_a), veh/h	208	566	550	136	516	491	187	0	450	284	581	619
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.1	35.1	35.3	48.8	33.3	33.6	47.1	0.0	39.0	43.9	34.0	21.6
Incr Delay (d2), s/veh	29.6	40.3	41.3	47.3	7.5	8.0	36.2	0.0	18.4	39.4	7.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	20.5	20.1	5.0	10.4	10.0	6.1	0.0	11.3	10.1	11.4	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.7	75.4	76.6	96.1	40.8	41.6	83.3	0.0	57.4	83.3	41.2	21.8
LnGrp LOS	E	F	F	F	D	D	F	A	E	F	D	C
Approach Vol, veh/h		1291			913			530				913
Approach Delay, s/veh		76.1			48.5			65.4				49.3
Approach LOS		E			D			E				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.8	41.1	22.6	30.8	15.8	38.1	15.9	37.5				
Change Period (Y+Rc), s	3.5	5.0	3.5	4.5	3.5	5.0	3.5	4.5				
Max Green Setting (Gmax), s	9.3	36.1	19.1	29.0	13.9	31.5	12.7	35.4				
Max Q Clear Time (g_c+I1), s	9.8	39.1	19.5	25.3	12.4	26.5	12.5	27.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.4	0.0	1.4	0.0	1.2				

Intersection Summary

HCM 6th Ctrl Delay	60.9
HCM 6th LOS	E

Notes

User approved changes to right turn type.

HCM 6th Signalized Intersection Summary

112: 54th St & OR 126

03/11/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	1150	25	20	630	65	40	5	15	65	5	35
Future Volume (veh/h)	35	1150	25	20	630	65	40	5	15	65	5	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1750	1709	1709	1750	1750	1750	1750	1750	1750
Adj Flow Rate, veh/h	39	1278	28	22	700	72	44	6	17	72	6	39
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	3	3	0	0	0	0	0	0
Cap, veh/h	56	1290	28	579	2100	216	176	30	48	169	23	64
Arrive On Green	0.03	0.39	0.38	0.35	0.71	0.70	0.12	0.13	0.12	0.12	0.13	0.12
Sat Flow, veh/h	1667	3325	73	1667	2970	305	874	239	378	828	182	505
Grp Volume(v), veh/h	39	639	667	22	382	390	67	0	0	117	0	0
Grp Sat Flow(s),veh/h/ln	1667	1663	1736	1667	1624	1652	1491	0	0	1515	0	0
Q Serve(g_s), s	2.1	34.4	34.4	0.8	8.1	8.2	0.0	0.0	0.0	2.8	0.0	0.0
Cycle Q Clear(g_c), s	2.1	34.4	34.4	0.8	8.1	8.2	3.6	0.0	0.0	6.4	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.18	0.66		0.25	0.62		0.33
Lane Grp Cap(c), veh/h	56	645	673	579	1148	1168	246	0	0	247	0	0
V/C Ratio(X)	0.69	0.99	0.99	0.04	0.33	0.33	0.27	0.00	0.00	0.47	0.00	0.00
Avail Cap(c_a), veh/h	126	645	673	579	1148	1168	660	0	0	665	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.76	0.76	0.76	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	43.0	27.4	27.4	19.4	5.1	5.1	36.1	0.0	0.0	37.3	0.0	0.0
Incr Delay (d2), s/veh	5.5	33.2	32.7	0.0	0.6	0.6	0.2	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	18.6	19.3	0.3	2.3	2.4	1.4	0.0	0.0	2.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.5	60.6	60.1	19.4	5.6	5.7	36.3	0.0	0.0	37.8	0.0	0.0
LnGrp LOS	D	E	E	B	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1345			794			67				117
Approach Delay, s/veh		60.0			6.0			36.3				37.8
Approach LOS		E			A			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	35.8	38.9		15.3	7.0	67.6		15.3				
Change Period (Y+Rc), s	5.0	* 5		4.5	4.5	5.0		4.5				
Max Green Setting (Gmax), s	5.1	* 34		37.0	6.3	32.7		37.0				
Max Q Clear Time (g_c+I1), s	2.8	36.4		8.4	4.1	10.2		5.6				
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	3.2		0.1				

Intersection Summary

HCM 6th Ctrl Delay	39.8
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

113: Bob Straub & OR 126

03/11/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	120	825	325	115	380	505	220	380	55	1160	795	155
Future Volume (veh/h)	120	825	325	115	380	505	220	380	55	1160	795	155
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1668	1736	1573	1736	1695	1668	1736	1736	1736	1736	1736
Adj Flow Rate, veh/h	129	887	349	124	409	0	237	409	59	1247	855	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	6	1	13	1	4	6	1	1	1	1	1
Cap, veh/h	129	887	597	110	889		201	365	52	1347	729	
Arrive On Green	0.08	0.28	0.28	0.07	0.27	0.00	0.13	0.13	0.12	0.42	0.42	0.00
Sat Flow, veh/h	1667	3169	1465	1498	3299	1437	1589	2880	412	3208	1736	1471
Grp Volume(v), veh/h	129	887	349	124	409	0	237	233	235	1247	855	0
Grp Sat Flow(s),veh/h/ln	1667	1585	1465	1498	1650	1437	1589	1650	1643	1604	1736	1471
Q Serve(g_s), s	11.6	42.0	27.8	11.0	15.5	0.0	19.0	19.0	19.0	55.3	63.0	0.0
Cycle Q Clear(g_c), s	11.6	42.0	27.8	11.0	15.5	0.0	19.0	19.0	19.0	55.3	63.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.25	1.00		1.00
Lane Grp Cap(c), veh/h	129	887	597	110	889		201	209	208	1347	729	
V/C Ratio(X)	1.00	1.00	0.58	1.13	0.46		1.18	1.11	1.13	0.93	1.17	
Avail Cap(c_a), veh/h	129	887	597	110	889		201	209	208	1347	729	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.84	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	69.2	54.0	34.7	69.5	45.7	0.0	65.5	65.5	65.7	41.3	43.5	0.0
Incr Delay (d2), s/veh	72.9	27.6	3.5	124.8	1.7	0.0	119.6	96.2	101.9	11.0	91.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	20.0	12.9	8.0	6.6	0.0	14.2	13.4	13.7	22.6	43.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	142.1	81.6	38.2	194.3	47.4	0.0	185.1	161.7	167.6	52.3	135.3	0.0
LnGrp LOS	F	F	D	F	D		F	F	F	D	F	
Approach Vol, veh/h		1365			533	A		705			2102	A
Approach Delay, s/veh		76.2			81.6			171.5			86.0	
Approach LOS		E			F			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.0	46.0		67.0	16.6	44.4		23.0				
Change Period (Y+Rc), s	4.5	5.5		6.0	5.5	* 5.5		5.5				
Max Green Setting (Gmax), s	10.5	39.5		61.0	11.1	* 39		17.5				
Max Q Clear Time (g_c+I1), s	13.0	44.0		65.0	13.6	17.5		21.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	2.1		0.0				

Intersection Summary

HCM 6th Ctrl Delay	95.5
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

114: 58th St & OR 126

03/11/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗	↗	↖	↗	↖
Traffic Volume (veh/h)	220	1350	55	145	755	55	150	200	240	115	100	60
Future Volume (veh/h)	220	1350	55	145	755	55	150	200	240	115	100	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1709	1709	1750	1695	1695	1709	1736	1709	1723	1736	1736
Adj Flow Rate, veh/h	229	1406	57	151	786	57	156	208	250	120	104	62
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	3	3	0	4	4	3	1	3	2	1	1
Cap, veh/h	284	1439	58	165	1138	83	169	333	418	143	178	106
Arrive On Green	0.17	0.45	0.44	0.10	0.37	0.36	0.10	0.19	0.19	0.09	0.18	0.17
Sat Flow, veh/h	1667	3180	129	1667	3043	221	1628	1736	1430	1641	1013	604
Grp Volume(v), veh/h	229	717	746	151	416	427	156	208	250	120	0	166
Grp Sat Flow(s),veh/h/ln	1667	1624	1685	1667	1611	1653	1628	1736	1430	1641	0	1618
Q Serve(g_s), s	17.8	58.4	58.8	12.1	29.4	29.5	12.8	14.9	20.3	9.7	0.0	12.7
Cycle Q Clear(g_c), s	17.8	58.4	58.8	12.1	29.4	29.5	12.8	14.9	20.3	9.7	0.0	12.7
Prop In Lane	1.00		0.08	1.00		0.13	1.00		1.00	1.00		0.37
Lane Grp Cap(c), veh/h	284	735	762	165	602	618	169	333	418	143	0	284
V/C Ratio(X)	0.81	0.98	0.98	0.91	0.69	0.69	0.92	0.62	0.60	0.84	0.00	0.59
Avail Cap(c_a), veh/h	296	735	762	165	602	618	169	421	490	143	0	365
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.9	36.2	36.4	60.2	35.7	35.8	60.0	50.1	41.1	60.7	0.0	51.2
Incr Delay (d2), s/veh	14.6	27.7	27.8	45.5	6.4	6.2	47.7	1.9	1.5	33.0	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	28.0	29.2	7.2	12.5	12.8	7.5	6.7	7.3	5.4	0.0	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.4	63.9	64.2	105.7	42.0	42.0	107.7	52.0	42.6	93.7	0.0	53.1
LnGrp LOS	E	E	E	F	D	D	F	D	D	F	A	D
Approach Vol, veh/h		1692			994			614				286
Approach Delay, s/veh		64.7			51.7			62.3				70.2
Approach LOS		E			D			E				E
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.4	65.1	15.8	29.9	28.0	54.5	18.0	27.7				
Change Period (Y+Rc), s	4.5	5.5	4.5	4.5	5.5	* 5.5	4.5	4.5				
Max Green Setting (Gmax), s	12.9	59.6	11.3	32.2	23.5	* 49	13.5	30.0				
Max Q Clear Time (g_c+I1), s	14.1	60.8	11.7	22.3	19.8	31.5	14.8	14.7				
Green Ext Time (p_c), s	0.0	0.0	0.0	1.5	0.3	3.4	0.0	0.5				

Intersection Summary

HCM 6th Ctrl Delay	61.1
HCM 6th LOS	E

Notes

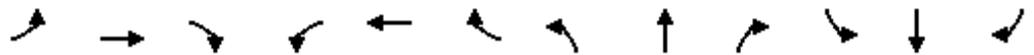
User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

116: 69th St & OR 126

03/11/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	115	1110	90	10	680	35	45	10	5	50	20	100
Future Volume (veh/h)	115	1110	90	10	680	35	45	10	5	50	20	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1709	1750	1750	1695	1750	1709	1750	1750	1750	1750	1750
Adj Flow Rate, veh/h	122	1181	96	11	723	37	48	11	5	53	21	106
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	3	0	0	4	0	3	0	0	0	0	0
Cap, veh/h	470	1651	750	265	1456	667	327	239	108	441	52	264
Arrive On Green	0.08	0.51	0.51	0.02	0.45	0.45	0.21	0.21	0.20	0.21	0.21	0.20
Sat Flow, veh/h	1667	3247	1476	1667	3221	1475	1242	1134	515	1402	249	1255
Grp Volume(v), veh/h	122	1181	96	11	723	37	48	0	16	53	0	127
Grp Sat Flow(s),veh/h/ln	1667	1624	1476	1667	1611	1475	1242	0	1649	1402	0	1504
Q Serve(g_s), s	1.8	12.9	1.6	0.2	7.3	0.6	1.6	0.0	0.4	1.4	0.0	3.4
Cycle Q Clear(g_c), s	1.8	12.9	1.6	0.2	7.3	0.6	5.0	0.0	0.4	1.8	0.0	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		0.83
Lane Grp Cap(c), veh/h	470	1651	750	265	1456	667	327	0	347	441	0	317
V/C Ratio(X)	0.26	0.72	0.13	0.04	0.50	0.06	0.15	0.00	0.05	0.12	0.00	0.40
Avail Cap(c_a), veh/h	471	2194	997	360	2176	996	837	0	1024	1017	0	934
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.8	8.7	5.9	8.7	8.9	7.1	17.8	0.0	14.5	15.2	0.0	15.8
Incr Delay (d2), s/veh	0.3	0.8	0.1	0.1	0.3	0.0	0.2	0.0	0.1	0.1	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.7	0.3	0.0	1.6	0.1	0.4	0.0	0.1	0.4	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.1	9.5	6.0	8.8	9.1	7.1	18.0	0.0	14.6	15.3	0.0	16.6
LnGrp LOS	A	A	A	A	A	A	B	A	B	B	A	B
Approach Vol, veh/h		1399			771			64				180
Approach Delay, s/veh		9.0			9.0			17.1				16.2
Approach LOS		A			A			B				B
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.9	27.3		13.7	7.5	24.7		13.7				
Change Period (Y+Rc), s	4.5	6.0		4.5	4.5	6.0		4.5				
Max Green Setting (Gmax), s	3.0	29.0		28.0	3.0	29.0		28.0				
Max Q Clear Time (g_c+I1), s	2.2	15.9		7.0	3.8	9.3		5.4				
Green Ext Time (p_c), s	0.0	5.2		0.2	0.0	3.3		0.7				

Intersection Summary

HCM 6th Ctrl Delay	9.8
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.



MAIN STREET SAFETY PROJECT | 20th Street to 72nd Street

TECHNICAL MEMORANDUM #3: BUSINESS AND PROPERTY OWNER IMPACT LITERATURE REVIEW

DATE: April 22, 2019

TO: Molly Markarian | City of Springfield
Bill Johnston | ODOT Region 2

FROM: Matthew Kitchen | ECONorthwest
Ryan Knapp | ECONorthwest

SUBJECT: Task 3.2.1 Literature Review
Tech Memo #3: Final

DKS Project No. 14180-023

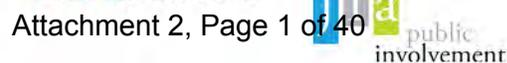
SUMMARY

As part of the Oregon Department of Transportation's (ODOT) Main Street Safety Project in Springfield, Oregon, ODOT and the City of Springfield contracted ECONorthwest to conduct a literature review of the potential effects possible infrastructure safety solutions for Main Street might have on nearby businesses and property owners. As a small part of the larger evaluation framework¹, the purpose of this literature review is to summarize the potential economic impacts to businesses and commercial property owners from various kinds of possible corridor safety infrastructure solutions.

Redesigning urban arterial streets to improve traffic and safety conditions is a common urban transportation investment strategy. A safety redesign may include a reconfiguration of motor vehicle traffic lanes along with other traffic management measures such as turn restrictions, raised medians, and crosswalks. The primary focus of most arterial redesigns is to improve safety, decrease travel times, and manage traffic speeds. In general, ex-post² studies of arterial redesign efforts, which are based on actual results rather than forecasts, confirm such investments often reduce speeds and crashes while increasing typical travel times. The benefits from speed and crash reductions are often found to outweigh, in economic terms, the costs of increased travel times, but these net gains are subject to context-specific factors and conditions and are influenced by average

¹ This refers to the larger framework for evaluating solutions being considered as part of the Main Street Safety Project.

² based on knowledge and retrospection and being essentially objective and factual





daily traffic (ADT) levels. A Federal Highway Administration report³ specifically links such arterial reconfigurations with reductions in crashes and injuries. ECONorthwest reviewed the available literature⁴ on the business impacts of access management⁵ with a specific focus on identifying studies with an empirical basis. Such studies attempt to measure the direct effect of the redesign on businesses in the form of customer visits or sales information. Ideally, those studies also attempt to control for other factors influencing business performance by collecting information before and after the redesign is implemented and measuring similar business performance in other corridors where no design or operational changes were implemented.

However, there are few studies that attempt to measure the effect of arterial street reconfigurations on retail sales and business performance, and are often survey-based and/or have been implemented in larger cities. Well-designed studies that control for a wide range of factors influencing business performance are difficult and expensive to implement. As a result, rigorous studies on this topic are scarce. Below is a summary of findings from a review of the available literature.

The Impact of Raised Medians and Roundabouts

A few studies focused specifically on the effects of new raised medians or roundabouts. These studies suggest impacts to businesses will likely not be significant⁶ and may be positive overall:

- Businesses near these types of investments performed (in terms of sales) as well as, or better than, their counterparts in corridors where no investments occurred.
- Business owner perceptions of roundabouts are generally positive; stemming in part from the impression of improved traffic flow.
- Business impressions of raised medians appear to be less positive, and harder to shift. Even in cases where sales data demonstrates business performance has improved, businesses perceive the raised medians as a potential impediment to customer and delivery access.

³ US Department of Transportation - Federal Highway Administration. 2004. "Evaluation of Lane Reduction "Road Diet" Measures and Their Effects on Crashes and Injuries."

⁴ See Appendix A.

⁵ A suite of strategies that are designed to improve safety and traffic conditions by managing access to properties adjacent to the corridor, including: restricted turn movements, center turn lanes, raised medians, and roundabouts.

⁶ Most studies focus on near-term business results (within a year of the investments).



General Business Impacts

The broader literature on business impacts of access management and arterial corridor redesigns is dominated by before-and-after studies and surveys of commercial businesses about their perceptions of business performance after access management treatments have been implemented. Key findings include:

- Overall, there is no clear indication from the literature that access management, safety projects, and corridor operational investments lead to declines in business performance. To the contrary, there is some evidence that such investments may improve business performance as a result of addressing underlying traffic congestion and safety deficiencies.
- The above finding does not suggest that no single business in a redesigned corridor could experience business losses due to changes in accessibility. There is some evidence that businesses in mid-block locations may be more susceptible to lower customer visitation as a consequence of access restrictions (restricted turn movements, limitations in sight lines, etc.). Also, businesses that more heavily rely on pass-by traffic (where the business is not a primary customer trip destination) may be affected by access restrictions should their business become less accessible to pass-by traffic.
- Some literature suggests business losses during construction may be the primary negative effect on business performance. However, such construction impacts would occur from any corridor reconstruction, independent of the final configuration of the project.
- General urban economic theory⁷ dictates that should street investments change business site accessibility and gross sales, those changes should eventually be captured in the value of the underlying property as opposed to the profitability of a specific business⁹. So while changes in land values may be observed, those changes may not indicate business gains or losses in terms of sales or profits.
- Finally, investments that change how individual corridors perform, and influence business site accessibility within those corridors, are unlikely to have any influence on the broader regional economic productivity. As site values in the affected corridor change, they do so relative to site values elsewhere in the broader urbanized area.

⁷ Der Isolierte Staat in Beziehung auf Landwirtschaft und Nationalökonomie, oder Untersuchungen über den Einfluss, den die Getreidepreise, der Reichtum des Bodens und die Abgaben auf den Ackerbau ausüben, Vol. 1

⁸ Weber, Alfred "Theory of the Location of Industries", Translated in 1929.

⁹ As site accessibility improves property owners will adjust lease rates until business profits return to what are considered "normal" economic profits. This in turn may result in business turnover, or other business adjustments. The time frame for such adjustments is subject to many local conditions, contractual commitments, and market constraints.



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INTRODUCTION AND PURPOSE

As part of the Oregon Department of Transportation's (ODOT) Main Street Safety Project in Springfield, Oregon, ODOT and the City of Springfield contracted ECONorthwest to conduct a literature review of the potential effects that the range of possible infrastructure safety solutions for Main Street might have on nearby businesses and property owners. In this memorandum, we¹⁰ summarize the findings from a literature review of existing studies about the business impacts of street design changes that influence how businesses are accessed within commercial corridors.

The purpose of the Main Street Safety Project is to select infrastructure solutions that will make Main Street safer for people walking, biking, driving, and taking transit. The selected safety improvements will provide for the movement of goods and people, support the economic viability of the corridor, accommodate current bus service and future transit solutions, and complement safety education and traffic enforcement. This memorandum focuses on only a small subset of those objectives: the potential impacts to corridor businesses from street redesigns (such as roundabouts or medians) that may impose restrictions on vehicle movements.

This literature review is intended to contribute to the general understanding of potential economic impacts to businesses from various kinds of corridor safety infrastructure solutions, and in this manner is only a small part of a larger evaluation framework.

METHODS

In our review of literature, we sought evidence of the link between street redesign and business performance by focusing on the literature that reflected best practices in research design. An ideal analysis would isolate the effects of a policy or action by controlling for changes in factors unrelated to the policy or action of interest. This ideal is rarely achieved. Often, the many other factors that influence the outcome of business impacts cannot be isolated given available analytical tools and budget constraints. In the social sciences, the "gold standard" for experiments includes all of the following elements:

- An examination of results from settings with and without the policy or "treatment" (in other words, an experimental case and a control case).
- An examination of results both before and after the policy or "treatment" is applied.
- The collection of data that represents revealed behaviors.

In cases where the above conditions are not practical, selected features of the ideal analysis may be retained while others are abandoned. For example, it is common for before and after studies to be performed when the

¹⁰ Throughout this memo, the terms "we," "our," and "us" refer to Matthew Kitchen, Ryan Knapp, and Emily Picha at ECONorthwest <<http://www.econw.com/>>.



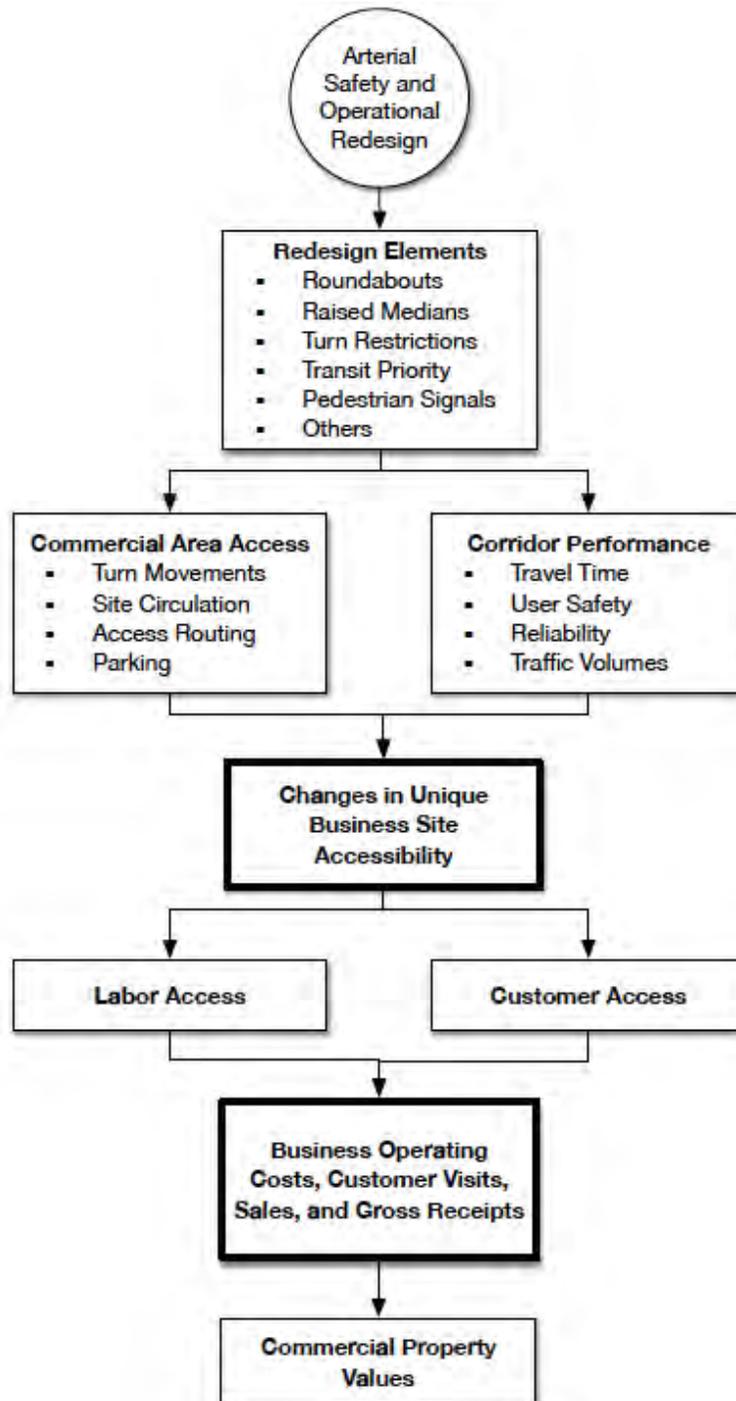
researcher finds it is not feasible to identify a suitable control condition. In other cases, researchers use carefully designed survey methods in lieu of revealed preferences (or purchasing behavior) to understand perceptions, preferences, and other qualitative factors that help establish general magnitudes or relative magnitudes of effects.

In our review of the available literature, we have looked for evidence of the means by which corridor safety and redesign projects (as characterized in more detail below) have effects on business performance.

FACTORS THAT INFLUENCE BUSINESS IMPACTS

Figure 1 is a diagrammatic representation of how street redesigns influence business performance. Street redesign investments change the performance of a corridor as well as dictate how vehicles, bicyclists, and pedestrians access specific business sites. These changes in accessibility are unique to each business location.

Figure 1: Street Redesign, Changes in Site Accessibility, and Business Performance



Source: ECONorthwest



The above diagram shows employees, vendors and service providers and customers must access business sites during the normal course of business, and changes in accessibility will influence their willingness to do so. Changes in customer visits ultimately translate to changes in spending, business gross receipts, and profits. As individual sites become more or less profitable to businesses (due to the changes in accessibility), some or all of the changes in profitability will be captured in the underlying value of the property.

Businesses choose locations that support their primary operational objectives. Employees must access business locations to perform their work tasks, and businesses with a strong customer focus (e.g. retail) choose locations that maximize their exposure to customers. Business accessibility operates at multiple geographic scales. Businesses care about broad access to their customer and labor markets (regional and sub-regional location), the performance of transportation infrastructure that provides connections to the business location (corridor location relative to final markets), as well as specific details of site accessibility (turn movements, site circulation, driveways, parking and transit stop locations). At specific sites, businesses make tradeoffs about these factors of accessibility. Traffic capacity, speeds, and reliability at one location may come at the expense of parking capacity, or a larger customer catchment area may be associated with more traffic congestion and slower arterial speeds. Different businesses (types and sizes) will have different preferences, and different willingness to pay for or accommodate various accessibility factors.

In the context of the Main Street Safety Project, there are substantial safety concerns associated with the current roadway configuration. Like many communities, Springfield is considering a redesign of the corridor to meet broad community objectives of increasing safety, supporting the vitality of the community and its vision for Main Street, and creating a multimodal environment that connects people and destinations. Communities consider an array of facility improvements, including:

- turn restrictions;
- driveway consolidations;
- raised medians;
- pedestrian crossing controls; and
- roundabouts.

Arterial redesign efforts may focus on supporting people walking, biking, and taking transit, or may emphasize improving safety, while at other times the emphasis is on traffic calming, or a combination of all three. Independent of the focus, specific features of an arterial redesign will influence **how properties are accessed** and also have some impact on how the broader **corridor performs in terms of traffic volumes, speeds and reliability**.

There are several types of businesses that will have unique needs, including:



- **Destination businesses** are businesses with a customer base familiar with the business and seeking its location as a destination. These businesses will be concerned about the general performance (e.g. travel speeds and perceived safety) of the transportation infrastructure.
- **Opportunity businesses** are businesses that rely on incidental patronage by customers passing by and will also be concerned about other, very localized, factors such as business visibility, ease of access to the specific site, parking, pedestrian accessibility and amenities.

For any business, the general logic is the same: the higher the level of accessibility to a business, the more customers there are who may patronize that business, and the more easily businesses manage total transportation costs of their supply chain. Additional customers translate to additional business revenue and owner and employee income. However, if a specific location is made more accessible (or less), that location, or site, will eventually command higher (or lower) rents in the real estate market. In this manner, higher business revenue will, in part, translate into higher lease rates, and not entirely be associated with higher business profits. This final point is important – in competitive markets, any unique value associated with the characteristics of a specific parcel of land will eventually accrue to that land in the form of higher land values. Businesses that own the land upon which they are located will see direct gains or losses from changes in accessibility. Businesses that lease or rent their locations may, or may not, enjoy the benefits from changes in accessibility. This means that transportation’s influence over business performance is in part determined by whether the business owns the property on which it operates.

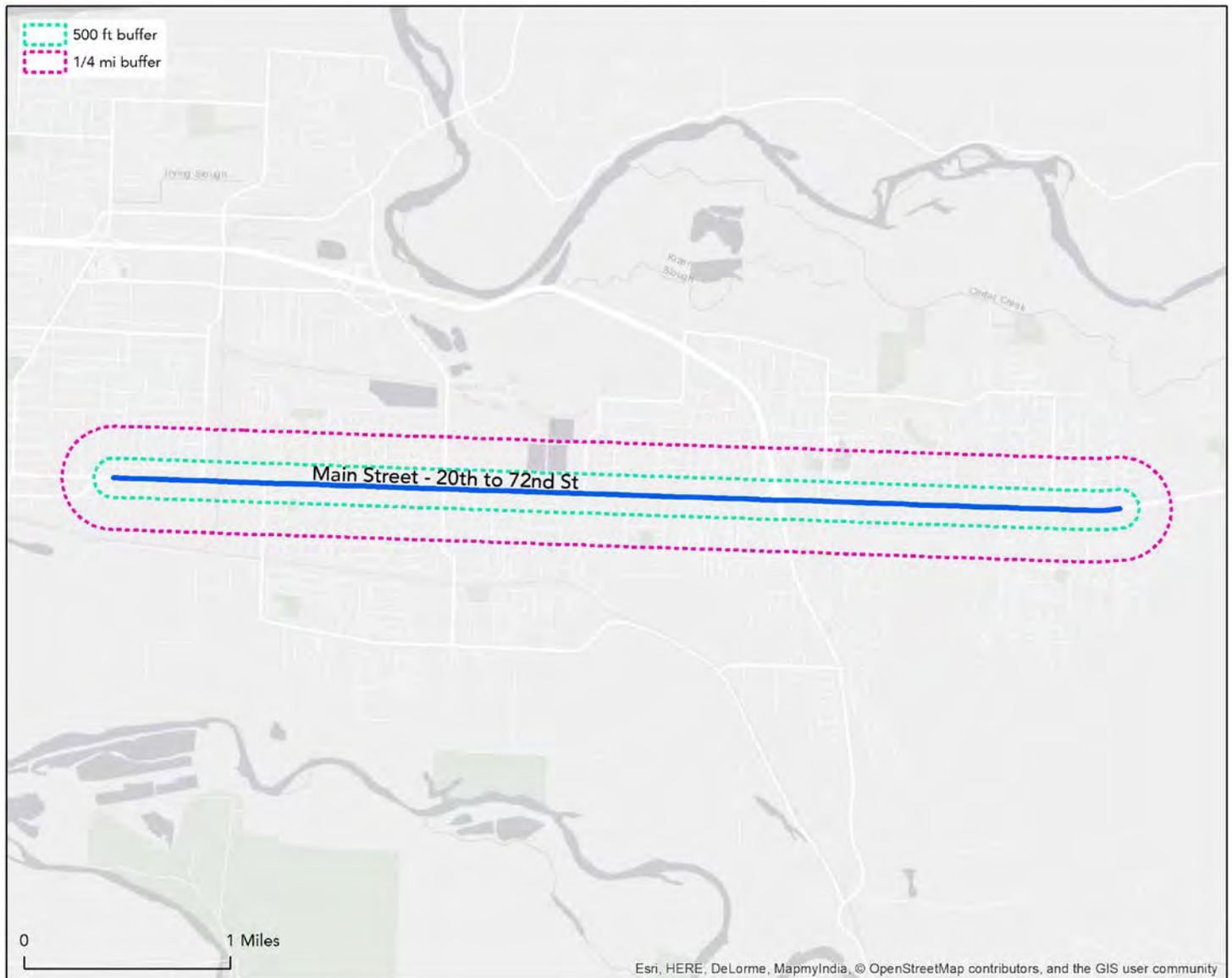
EXISTING BUSINESS MIX

Within the Springfield Main Street corridor, ECONorthwest acquired Quarterly Census of Employment and Wages (QCEW) data to support the development of an inventory of existing businesses¹¹. We summarized employment and average wages by business category¹² within a quarter mile buffer of the Main Street corridor, as well as for a 500-foot buffer designed to capture businesses most directly affected by the corridor redesign. The larger buffer captures businesses likely impacted by accessibility from Main Street, while the smaller buffer captures businesses most impacted by visibility from the Main Street corridor. Figure 2 displays the corridor and the buffer geographies.

¹¹ This process examines only the existing inventory of businesses in the corridor and does not reflect any expectation of future business mix.

¹² Categorization of businesses are limited by non-disclosure requirements placed upon the distribution of QCEW data.

Figure 2: Springfield Main Street Business Mix Study Area

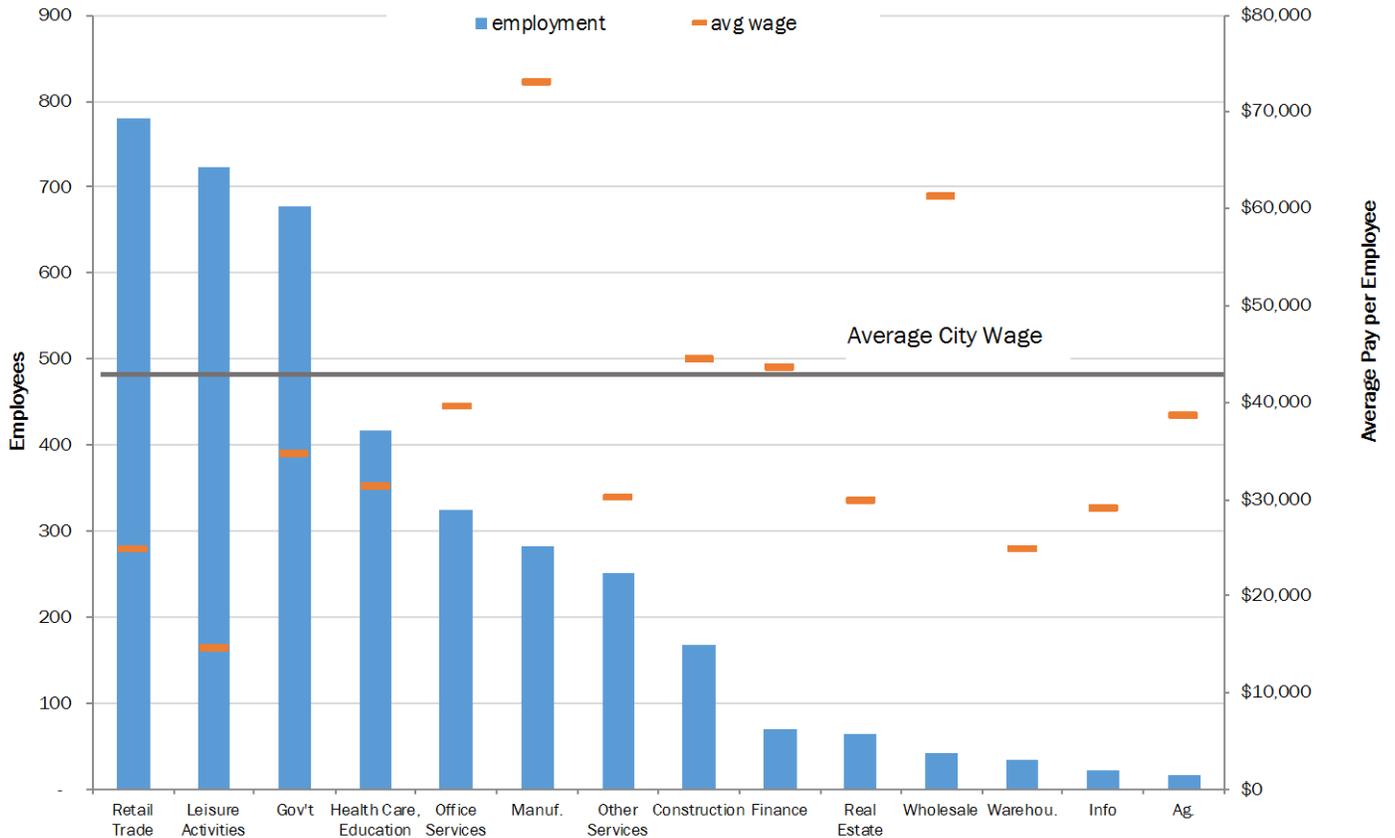


Source: ECONorthwest

Within a quarter mile of the Main Street corridor, there are 418 businesses employing 3,789 persons (14% of the citywide total employment). Total payroll in this area is 10% of the citywide total. Retail and leisure activities constitute about a quarter of the buffer area businesses and 40% of the area employment. Other primary employment sectors include government, healthcare, private education, and office services. Figure 3 displays employment and average wages by business category within the quarter mile buffer.



Figure 3: Employment and Wages by Category within ¼ Mile of Main Street

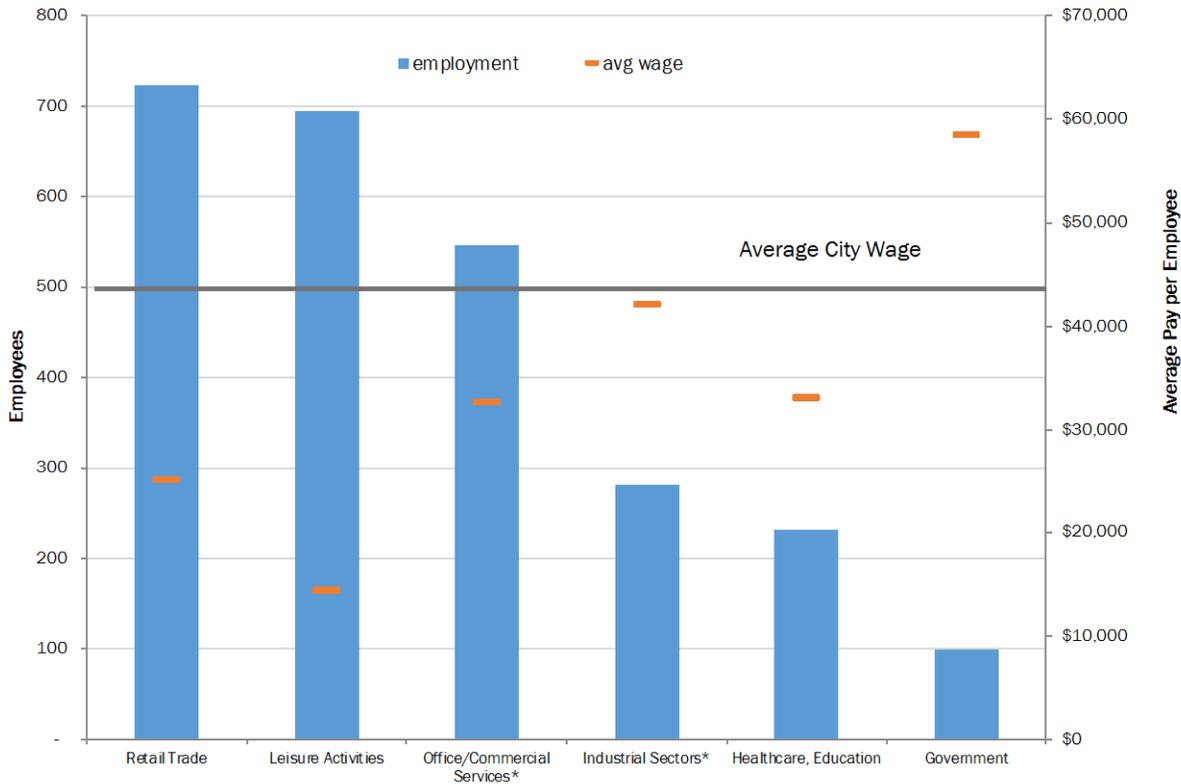


Source: ECONorthwest, Oregon Department of Employment, and Quarterly Census of Employment and Wages Data

Within the 500-foot buffer of the Main Street corridor, there are 282 businesses employing 2,577 persons (9% of the citywide total employment). Total payroll in this area is 6% of the citywide total. Retail trade and leisure activities constitute about a third of the buffer area businesses and 55% of the area employment. Other primary employment sectors include office services, healthcare, private education, and government. Figure 4 displays employment and average wages by business category within the 500-foot buffer.



Figure 4: Employment and Wages by Category within 500 Feet of Main Street



Source: ECONorthwest, Oregon Department of Employment, and Quarterly Census of Employment and Wages Data.

*ECONorthwest grouped businesses in several sub categories into the Office/Commercial Services and Industrial Sectors due to confidentiality requirements for the data.

The inventory of current businesses confirms that those businesses (e.g. retail and leisure activities) most dependent on incidental passer-by customers self-select for business locations that are most visible and accessible (within the 500-foot buffer) to the arterial traffic. Those businesses are likely most susceptible to changes (both positive and negative) in business access that may result from redesigning the Main Street corridor.

BUSINESS IMPACT OF SPECIFIC INVESTMENTS

Medians

Raised medians serve to control access to commercial properties by restricting left turn movements to select locations. Various turn movement configurations can be provided. The potential benefits from raised medians



are overall traffic flow in the corridor can be improved and intersections can be managed for more efficient movements and lower queueing conditions. If the general efficiency of the corridor allows for more volume of traffic, then businesses in the commercial district should benefit overall. Business concerns arise if restricted turn movements present challenges for vehicles when accessing specific business sites.

Generally, medians with turn restrictions will result in improved performance at controlled intersections (i.e. signalized or roundabouts) and easier access to business sites that are located nearer to those intersections with U-turns available. Access to mid-block business sites could, under certain circumstances, involve more circuitous routing. Paired with roundabouts, raised medians may lead to improved access overall for most business sites within a corridor. In advance of implementation, however, many businesses may be concerned about access restrictions, sharing access points or allowing cross access with adjoining properties for effective circulation. As is true for the general literature, there were just a few specific studies found that involve the exacting standards necessary to provide empirical evidence of how raised medians affect business performance.

South Carolina DOT, researchers¹³ studied the sales tax history of businesses in corridors where access management changes ((1) driveway consolidation, (2) providing sufficient corner clearance distance from an intersection, (3) access restriction near signalized intersections, and (4) raised median implementation) were implemented. The six corridors studied had average daily traffic volumes ranging between 17,000 and 37,000¹⁴. The study used both surveys of businesses and an examination of three years of sales tax records to evaluate the economic impacts of the changes in the corridor. While a majority of the businesses surveyed believe raised medians had a negative effect on customer visits and sales, the analysis of sales volumes indicated that the decrease in sales for the affected businesses was similar to the performance of businesses in the control group.

The Utah DOT sponsored research¹⁵ examining corridors where raised medians were implemented as a safety and access management strategy. The research focused on three arterial corridors and examined before and after implementation taxable sales records. For each study corridor a suitable control corridor was identified. Taxable retail sales (measured both as a gross value and as a value per square foot of building space) in all three corridors increased post implementation of the raised medians. Additionally, all study corridors performed as well or better than the control corridors in terms of growth in retail sales.

In Utah surveys of business's impressions were also conducted. These surveys found businesses in the corridors where raised medians were built had a more negative impression, both pre- and post-construction, of

¹³ https://www.scdot.scltap.org/wp-content/uploads/2018/07/SPR-715_Final-Report-6_29_2018_V2-3.pdf

¹⁴ Approximately 20,000 vehicles per day use the Main Street corridor, of which truck traffic accounts for approximately two to four percent.

¹⁵ <https://www.udot.utah.gov/main/uconowner.gf?n=4511209509821664>



customer access and delivery than did their counterparts in corridors where no raised medians were present. These impressions appeared to be in contrast with the taxable sales data collected during the study, highlighting the challenges associated with addressing strongly held business concerns about potential degradation of business access. A report by Eisele and Frawley found business perceptions of the effects of a new raised median were more negative, even during construction, than the actual effects.¹⁶

A study of raised medians for Texas Department of Transportation provides useful insights based on extensive application of business surveys across five separate street locations where medians were implemented. Specific findings include:

- Businesses perceived that after implementation of raised medians traffic volumes increased, property values increased, and the frequency of accidents decreased.
- Businesses generally perceived that gross sales increased after installation of medians within the affected corridor.
- Businesses overall perceived that customer visits increased after median installation, however gas stations and auto repair businesses were the exception – perceiving fewer customer visits.

Roundabouts

As with the case of the broader literature on business impacts of arterial redesigns, the literature on business impacts of roundabouts is limited and qualitative. Two reports^{17,18}, summarizing a single effort at characterizing how roundabouts impact nearby businesses, involved a combination case study review and business surveys.

The study concentrated on the literature, surveys to businesses, and case studies that showed roundabouts' ability to move traffic more efficiently. Conclusions were based on the widely accepted assumption that businesses and business areas that have good vehicle and pedestrian access and traffic flow should prosper and grow and, conversely, businesses that do not have good access and good traffic flow will not.

No empirical information on business performance was included in these reports, but rather survey tools were used to capture business impressions of their own performance across a number of locations throughout Kansas as well as Carmel, Indiana. Survey responses from nearby businesses were generally positive about roundabouts. Traffic simulation of converting a number of intersections in the Topeka business area to

¹⁶ Eisele, William and William Frawley. 2000. "A Methodology for Determining Economic Impacts of Raised Medians: Final Project Results." Texas Transportation Institute, Texas A & M University System.

¹⁷ Godavarthy, R. P., Mirzazadeh, B., Russell, E. R., and Landman, D. 2016. "Roundabout's Impact on Nearby Businesses". Journal of Transportation Technologies, 6, 181-191.

¹⁸ Russell, E. R., Landman, D., and Godavarthy, R. P. 2012. "A Study of the Impact of Roundabouts on Traffic Flows and Business." Kansas State University Transportation Center; Report No. K-TRAN: KSU-09-10



roundabouts confirmed substantial traffic flow benefits in the form of less vehicle delay and queueing at intersections. Based on this combination of findings, it was concluded that roundabouts have a positive impact on traffic flows and business activity. Without empirical substantiation, however, these conclusions must be considered qualitative. And the pairing of roundabout and raised medians may offer opportunities to provide good access to corridor business. This facility type also allows for reduced corridor cross-section width associated with wider turning movements at signalized intersections, thus preserving space for parking, circulation and business frontages.

BROADER LITERATURE ON BUSINESS IMPACTS OF ACCESS CHANGES

The relationships between traffic, traffic congestion, and economic performance are well documented. Street reconfigurations may affect business bottom lines in several ways: longer queues and slower travel times may lead some consumers to opt for a more accessible alternative; longer travel times and narrower lanes may make it more expensive for delivery trucks to deliver goods to a business and thereby increase the cost to the business; and traffic delays may increase the cost incurred by employees when traveling to work. As a result, street reconfigurations may lead to changes in transportation costs, which could change the cost of production and the quantities produced.¹⁹ Alternately, road reconfigurations designed to improve access and safety may result in overall improved performance of the corridor in terms of speeds and travel reliability. There are a couple of key conclusions from the literature:

- Business location and performance are linked to transportation costs, which is consistent with the basic principles of location theory.^{20,21} In the case of retail businesses, transportation costs are borne in part by customers as they access retail businesses.²²
- Researchers of Chicago and Philadelphia found that traffic congestion shrinks business market areas and reduces the chances of “agglomeration economies,” in turn raising production costs. This research,

¹⁹ The economic literature on this topic is summarized in Goodwin, Phil. 2004. "The Economic Costs of Road Traffic Congestion." *ESRC Transport Studies Unit – University College London*.

²⁰ Thünen, Johann Heinrich von. 1783–1850. *Der Isolierte Staat in Beziehung auf Landwirtschaft und Nationalökonomie, oder Untersuchungen über den Einfluss, den die Getreidepreise, der Reichtum des Bodens und die Abgaben auf den Ackerbau ausüben, Vol. 1., and Der Isolierte Staat..., Vol II: Der Naturgesesse Arbeitslohn und dessen Verhältnis zum Zinsfuss und zur Landrente, Part 1* (Partial translation into English by Carla M. Wartenberg in 1966 as *Isolated State*. New York: Pergamon Press.)

²¹ Weber, Alfred. 1929. (translated by Carl J. Friedrich from Weber's 1909 book). *Theory of the Location of Industries*. Chicago: The University of Chicago Press.

²² Hotelling, Harold. 1929. "Stability in Competition." *The Economic Journal*, 39 (March), 41-57.



however, looked at large-scale, highway traffic congestion as opposed to increased traffic on a single, urban arterial street like Springfield's Main Street.²³

The general framework that treats transportation costs as an input into the production process is the basis for understanding the potential economic consequences of adopting arterial redesigns. If an arterial redesign impedes travel times for people driving then shoppers who travel by car may choose to patronize an alternative, more car-accessible retailer. Likewise, the accessibility of driveways through left turn lanes may increase visits to businesses. The direct empirical evidence for these effects on business performance is impeded by the challenges associated with accurately measuring the cause and effect of business performance given all the many other factors that contribute to business performance over time.

A few studies use sales tax data to try to measure the effect of arterial reconfigurations on retail performance. For example, recent research in New York City attempted to develop new metrics to measure the economic impacts and effects of street reconfigurations. These studies found that protected bike lanes, dedicated bus lanes, and other traffic reconfigurations were positively associated with sales tax revenues and negatively associated with commercial vacancies.²⁴ Oregon, unfortunately for research purposes, does not have sales tax data with which to complete this type of research.

The empirical evidence for access management effects on traffic and safety has been systematically documented in the engineering literature. There is strong evidence from the literature that access management projects can produce safety benefits. The magnitude of these traffic and safety effects is typically modest for urban arterials with less than 20,000 ADT.

There is also evidence that supports the use of access management as a tool for traffic flow management, improving speeds and reliability, but results are highly context- and design-specific. Traffic flow benefits may come with or without overall reductions in ADT. The specific design of intersections and management of turn movements will have an influence on traffic patterns.

Adjusting infrastructure and amenities for people who walk and bike may change visits from pedestrians and bicyclists. There is some evidence that walk and bike trips are associated with different business patronage and spending behavior than is associated with vehicle trips. In a number of studies bike and walk trips are associated with more frequent business patronage but with smaller per trip expenditures²⁵.

²³ Weisbrod, Glen et al. 2003. "Measuring Economic Costs of Urban Traffic Congestion to Business." *Transportation Research Record: Journal of the Transportation Research Board* 1839, no. 1.

²⁴ New York City Department of Transportation. 2013. "Measuring the Street: New Metrics for 21st Century Streets."

²⁵ In these studies per visit expenditures declined but frequency of visits increased leading to comparable total expenditures per patron independent of mode of access.



If automobile ADT is reduced by an arterial reconfiguration or implementation of access management policies, then visits to retailers along the street may also be reduced. Retailers may, however, sustain visits if ADT reductions are primarily amongst through-travelers or in the case where ADT reductions are matched by increases in bicycle and pedestrian visits²⁶.

Access Management Changes

The implementation of access management strategies that support roadway and safety improvements, (such as speed zone changes that succeed in reducing observed travel speed, channelization, turn restrictions, and driveway consolidation) are increasingly common arterial street design elements in urban and suburban commercial settings. The primary objectives of the collection of access management strategies are to improve safety and traffic operations. The literature related to how property accessibility and access management directly influence business performance is limited by the challenge of isolating cause and effect associated with business performance.

A report prepared for the Washington State Transportation Commission examined the relationship between business perceptions of access management and business perceptions of their own performance.²⁷ Findings from this study include:

- Retail services²⁸ establishments are less inclined than other retail establishments to perceive a relationship between access management and business performance.
- Businesses that already have good access from the main corridor are more likely to perceive a relationship between access restrictions and business performance.
- Larger businesses (more than 10 employees) are more likely to perceive a relationship between access management and business performance. Larger businesses are also more likely to be concerned about access restrictions.
- Two-way turn lanes, as compared with factors that directly affect site accessibility, such as turn restrictions and driveway removals, are not perceived to have an influence on business performance.
- The overall level of congestion within the corridor is perceived to be a more influential factor for business performance than site accessibility and access management.

²⁶ This memo makes not claims about future trips, or model shares of trips after safety improvement are implemented.

²⁷ Vu, Patrick et al. 2002. "Economic Impacts of Access Management." Washington State Department of Transportation and TRAC.

²⁸ Retail services are businesses with a retail customer orientation classified as part of the services sector.



A national study of left turn restrictions was conducted for the National Cooperative Highway Research Program²⁹ and examined the economic effects of restricting left turns using survey methods and empirical based sales and revenue data from 9,200 businesses. The study found:

- *Gas stations, non-durable goods retailers, and service businesses appear to be the most likely to be adversely affected; where restricted, these businesses showed the largest sales declines, and the highest rates of business failures. By contrast, grocery stores and restaurants appeared to benefit from the restrictions, showing increased sales and decreased business failures.*
- *The survey and interview results present a mixed picture. In some instances, business owners believed that the left-turn restrictions reduced access to their stores and resulted in lost business. In other cases, business owners reported the turn restrictions decreased congestion and improved traffic flow to the point where their market areas actually expanded. These business owners felt that customers were traveling to their stores from farther away than prior to the restrictions.*
- *Businesses at mid-block locations (i.e., away from intersections) perceived the left-turn restrictions as more detrimental than did businesses at intersections or other points where left turns were permitted. In some cases, left turn restrictions appeared to cause a portion of sales to shift from the restricted to the unrestricted business locations within the study corridor.*

For the North Carolina Department of Transportation, a research team undertook survey-based research³⁰ on the effects of access management on North Carolina businesses. The team surveyed nearly 800 businesses located in “treatment” sites as well as “control” sites (similar locations where no access management treatments had been implemented). The research coincided with the 2007-09 economic recession within the state and the nation as a whole, so attempts were made to control for the broader economic conditions. The study concluded:

- There was no statistically significant difference in self-reported revenue changes between comparison and treatment sites, even when looking at individual treatment/comparison pairs.
- Within the treatment site locations over 70% of businesses felt that traffic conditions had improved or stayed the same as before the access management installations. And businesses in treatment site responded more favorably than control site businesses to questions of safety, traffic operations, and business access.

²⁹ NCHRP Project 25-4, "Economic Effects of Restricting Left Turns." Mr. Glen E. Weisbrod and Ms. Roanne Neuwirth.

³⁰ Cunningham, C., Schroeder, B., Findley, D., Foyle, R., Katz, D., Smith, S., Carter, D., and Miller, M. 2010. *Economic Effects of Access Management Techniques*. The Institute for Transportation Research and Education; NCSU.



A study³¹ for the Iowa Department of Transportation studied three access management treatment sites in Iowa to understand how traffic, safety and business vitality were affected. Business trends at the treatment sites were compared with other similar commercial settings where no access management treatments were implemented:

- The case studies showed that access management projects are rather benign in terms of business impacts. Access managed corridors generally had lower rates of business turnover than other areas of their communities. They had more rapid growth in retail sales once projects were completed. Far more business owners, when surveyed, indicated that their sales had been stable or increased following project completion than reported sales losses.

Before and After Studies

Most studies of arterial reconfigurations focus on the traffic statistics on a stretch of road before and after implementation. And some studies attempt to describe the effects the arterial redesign had on business performance or economic conditions if all other things are held constant.

In one study, qualitative and quantitative data allowed researchers to determine the effects from arterial reconfiguration on York Boulevard in Los Angeles. They found that there were no “meaningful linkages between the presence of a road diet and changes in economic conditions.”³²

A report on the performance of Main Street in Ashland, Oregon found that the road reconfiguration outperformed what was projected in terms of traffic speeds, queue lengths and intersection Level of Service (LOS) and in many instances represented an improvement over the baseline conditions.³³

Stantec collected economic data of businesses along two corridors in downtown Vancouver, BC where single bike lanes were converted to separated bike lanes³⁴. In each case, business owners reported reductions in sales (-10%, -4%) and customers reported similar reductions in visits to the area. The reasons customers reported for the reductions were traffic congestion, less parking, turning restrictions, and reduced pedestrian safety.³⁵ The dense Vancouver downtown area is likely not directly comparable to Springfield Main Street but this study does illustrate the potential relationship between traffic volume, arterial design and business impacts.

³¹ Maze, T. and Plazak, D. 1999. *Access Management Research and Awareness Program Phase IV Final Report*. Iowa Department of Transportation. CTRE Management Project 97 -I, University of Iowa.

³² McCormick, Cullen. 2012. "York Blvd: The Economics of a Road Diet." University of California Los Angeles.

³³ Faught, Mike. 2013. "Re: Post Road Diet Assessment - January through October." City of Ashland - Public Works.

³⁴ To implement the separated bike lanes, road space was reallocated, parking spaces were moved or eliminated, the illegal use of some loading zones was eliminated, and turning restrictions were introduced.

³⁵ Stantec Consulting Ltd. 2011. "Vancouver Separated Bike Lane Business Impact Study."



A Vancouver, WA study³⁶ attempted to describe the economic impacts or effects of the arterial redesign project. The Vancouver study found that businesses along the redesigned street “faired [sic] no worse than its peer areas” in 2002-2003, when the city experienced a general recession. The reconfigured Fourth Plain Street had a 4.7% decrease in “taxable retail sales” compared to 9.8% and 25.0% reductions at two comparison commercial zones. The two customer complaints to the city that referred to the reconfiguration concerned traffic signal timing.

Case Studies

Much of the literature found detailing business effects from arterial redesigns was case studies. These case studies depicted robust business and job growth in relation to arterial redesign efforts.

A cautious conclusion of these largely positive case study results is that investments in arterial reconfigurations can be shown to be part of broader area development initiatives that have ultimately led to more localized economic activity. Urban economies are complex and dynamic environments. An increase of jobs and businesses after the implementation of a street investment does not, by itself, give any indication of how much of that increase is attributable to any one specific investment. In addition, many of the case studies focus only on post-implementation benefits (e.g., new jobs or sales) and fail to describe the net benefits (is the value of the benefits greater than the value of the costs). While case studies are excellent tools to confirm or challenge a theory, or to investigate phenomenon with limited literature,³⁷ only limited generalization of their results into implementable policies can be supported.

In Barracks Row, Washington D.C., District Department of Transportation “made \$8 million public investment in streetscape improvement in 2003–2004. [Through 2005], and an additional \$8 million in private investment has been made in the corridor. Thirty-two new business establishments, including nine new outdoor cafes, have opened since the completion of the street enhancements and private investments have been completed.”³⁸

In Lancaster Boulevard in Lancaster, CA, after a nine-block revitalization project, the area saw “50 new businesses” and “800 new jobs.”³⁹

³⁶ 2004. "Nickerson Street Rechannelization before and after Report."; City of Orlando - Transportation Planning Bureau. 2002. "Edgewater Drive before & after Re-Striping Results."; City of Vancouver - Transportation Services, "Fourth Plain Boulevard Demonstration Re-Striping Project - Post Implementation Report."

³⁷ Tellis, W. 1997. “Application of a Case Study Methodology.” *The Qualitative Record* 3 (3).

³⁸ Transportation Research Board. 2006. *Linking Transportation and Land Use*. Transportation Research Circular, Number E-C100.

³⁹ National Complete Streets Coalition. 2013. “The Many Benefits of Complete Streets.”



In San Diego, after complete street initiatives, “a survey of tax receipts among 95 businesses along the corridor showed a 20 percent boost in sales. Numerous new businesses opened during construction, including a CVS with a 40-year lease⁴⁰”

A recent study found that pedestrian and bicycle infrastructure projects created more design and construction jobs than automotive-focused projects, as pedestrian and bicycle projects have a higher labor intensity (the ratio of labor to capital).^{41 42}

We found no studies that tried to document a link between arterial redesigns and changes in regional incomes, or regional production. Such changes are a standard measure used by economists to measure the performance of a regional economy.

Surveys and Opinion Research

Other studies attempt to understand business’s performance through the use of business or consumer surveys. Surveys can be used to understand a respondent’s impressions of the usefulness of street improvements, business performance, and consumer behavior.

- A survey study of North Main Street in Ashland found that $\frac{3}{4}$ of businesses said that the road reconfiguration had no effect on their business. The majority of the remaining $\frac{1}{4}$ mostly reported that deliveries to their location were negatively affected.⁴³
- Eisele and Frawley found that business perceptions of what the effects of a new raised median improvement would be before the addition were larger than the actual effects of the new median.⁴⁴
- A survey study completed in the Portland, OR area found cyclists spent more than automobile consumers at restaurants, drinking establishments, and convenience stores. Motorists spent more than cyclists at supermarkets.⁴⁵
- Survey research completed in New York’s East Village found that pedestrians and cyclists spent more per capita per week than motorists.⁴⁶

⁴⁰ McCann, B, A Meyer, J Wood, C Morfas. 2012. *It's a Safe Decision: Complete Streets in California*. National Complete Streets Coalition, Local Government Commission.

⁴¹ Garrett-Peltier, Heidi. 2011. *Pedestrian and Bicycle Infrastructure: A National Study of Employment Impacts*. Political Economy Research Institute, University of Massachusetts, Amherst.

⁴² Some jurisdictions prioritize job creation, and would see this as benefit. Others would see the additional jobs as an additional cost. In either case, these results are primarily distributional.

⁴³ Faught, Mike. 2013. "Re: Post Road Diet Assessment - January through October." City of Ashland - Public Works.

⁴⁴ Eisele, William and William Frawley. 2000. "A Methodology for Determining Economic Impacts of Raised Medians: Final Project Results." Texas Transportation Institute, Texas A & M University System.

⁴⁵ Clifton, Kelly et al. 2013. "Consumer Behavior and Travel Mode Choices." Oregon Transportation Research and Education Consortium.



- A survey study of Polk Street in San Francisco found that motorists spent more per trip, but pedestrians and cyclists spent more per week by taking more trips to retailers than drivers.⁴⁷

There is also some qualitative evidence of increased consumption after arterial reconfigurations.⁴⁸ In several surveys, merchants who operate businesses in areas with arterial reconfigurations report that complete street-type policies had improved their bottom lines—although these feelings were not unanimous.⁴⁹ Consumers may respond to improved urban streetscapes by viewing stores and products more positively, traveling and staying longer at stores, and by being willing to pay more for parking and products.⁵⁰ A study that moved from the hypothetical behavior of surveys to observed behavior relating to street improvements in New York City found that “assessed collectively, street improvement projects do not detract from commercial activity at the site of implementation. They may contribute positively.”⁵¹ This study, however, did not answer whether these contributions were net increases or re-distributions from other locations.

PROPERTY ACCESS, BUSINESS PERFORMANCE, AND PROPERTY VALUES

Transportation investments influence property values as a result of changing the costs of accessing property. Property gets its value from being accessible to economically valuable activities that take place on that property. Arterial reconfigurations that address existing traffic congestion and safety deficiencies can reduce transportation-related costs for customers and employees as they access business sites. Lowering the costs of accessing property, all else being equal, will eventually translate into higher property values. Similarly, specific access management strategies may improve overall corridor performance even while restricting access to specific businesses. It is this complex interplay of factors, along with other factors in the broader economy that makes identifying the specific contribution to property values from changes in accessibility difficult to isolate.

⁴⁶ Transportation Alternatives. "East Village Shoppers Study."

⁴⁷ San Francisco Municipal Transportation Agency. 2013. "Polk Street Intercept Survey Results."

⁴⁸ See, for example, the case studies of Transportation Research Board. 2006. *Linking Transportation and Land Use*. Transportation Research Circular, Number E-C100.; National Complete Streets Coalition. 2013. "The Many Benefits of Complete Streets."; Bleier, A, K Ferrier, A Hamilton, G Konar, B Peterson, D Sorenson, and S Torma. 2012. *Implementing Complete Streets in the San Diego Region*. American Planning Association, WalkSanDiego.

⁴⁹ Drennen, E. 2003. *Economic Effects of Traffic Calming on Urban Small Businesses*. Department of Public Administration, San Francisco State University.; Forkes, J and NS Lea. 2010. *Bike Lanes, On-Street Parking and Business - Year 2 Report: A Study of Bloor Street in Toronto's Bloor West Village*. Clean Air Partnership.

⁵⁰ Wolf, KL. 2005. "Business District Streetscapes, Trees, and Consumer Response." *Journal of Forestry* 103 (8): 396-400.

⁵¹ Lee, ES and B Sprung. 2013. *Bike and pedestrian street improvements and economic activity in NYC*. State Smart Transportation Initiative, New York City Department of Transportation.



There are case studies that demonstrate investments in access management and streets redesigned for safety and efficiency increase property values,⁵² but the analysis tends to be simple before-and-after studies, with little control for other causal variables. Many studies are specific to pedestrian and transit accessibility. A report⁵³ cited often examined the relationship between the sale prices of houses and their walk scores⁵⁴ in 15 different cities; after controlling for housing and neighborhood characteristics, the study found property values rose with walkability. One needs to be careful, however, about inferring arterial reconfigurations that improve walkability will increase property values. Such studies seldom control for self-selection or account for other factors contributing to both walkability and property values.

Improving transit and walk accessibility will not yield benefits uniformly in all settings. For example, making a five-lane road servicing commercial strip more walkable may have little effect on walking, transit, and auto travel, while making a desirable shopping district more walkable could raise property values. Ultimately, if people demand various street amenities (bicycle infrastructure, street trees, setback sidewalks, traffic calming), then we would expect properties served by these streets to have somewhat higher property values when compared to properties that are other-wise identical but served by a less complete transportation system.

One study found that when traffic calming restraints reduced vehicle volume by several hundred per day, property values increased by 18% on average.⁵⁵ Other studies have found similar results.⁵⁶ Similarly, several studies suggest consumers are willing to pay more for properties that are walkable, low-traffic, quiet, have bicycle infrastructure, etc.⁵⁷ Some analyses make inferences about the unique effects of complete streets difficult by not controlling for other public funding.⁵⁸

While the literature on the property value impacts of street redesigns is modest, general urban economic theory dictates that should investments change business site accessibility and gross sales, those changes should eventually be captured in the value of the underlying property rather than the profitability of a specific

⁵² See, for example, National Complete Streets Coalition. *Complete Streets Spark Economic Revitalization.*; Rush, N, L Actman, P McMahon, H Renski. *Street Redesign for Revitalization: West Palm Beach, FLA.* Accessed June 27, 2013, from http://pedbikesafe.org/PEDSAFE/casestudies_detail.cfm?CM_NUM=5&CS_NUM=16; National Complete Streets Coalition. *Economic Development.* Accessed June 26, 2013.

⁵³ Cortright, J. 2009. *Walking the Walk: How Walkability Raises Home Values in U.S. Cities.* CEOs for Cities.

⁵⁴ A “walk score” is one index of walkability. It awards points based off the distance between a property and nearby destinations. Shorter the distances produce higher the walk scores, and, as the logic goes, greater walkability. For more information, see <http://www.walkscore.com/methodology.shtml>

⁵⁵ Bagby, DG. 1980. “The Effects of Traffic Flow on Residential Property Values.” *Journal of the American Planning Association* 1: 88-94.

⁵⁶ Litman, T. 1999. *Traffic Calming Benefits, Costs and Equity Impacts.* Victoria Transport Policy Institute.

⁵⁷ Synder, R. *The Economic Value of Active Transportation.*

⁵⁸ See, for example, *Street Redesign for Revitalization: West Palm Beach, FLA.* Accessed June 27, 2013, from http://pedbikesafe.org/PEDSAFE/casestudies_detail.cfm?CM_NUM=5&CS_NUM=16.



business⁵⁹⁶⁰. But if consumers shift demand toward properties on redesigned streets, property values elsewhere must decrease. Additionally, increases in property values are a mixed bag: a benefit to some, a cost to others. Increased property values are a benefit to landowners, but would be a cost to currently operating businesses, that do not own the underlying property, in the form of higher lease rates.

DESIGN IMPLICATIONS

The arterial redesign literature is largely silent with respect to guidance on specific design implications that will minimize impacts to nearby businesses. There is clearly a potential trade-off between various arterial performance objectives such as safety and site accessibility. Achieving other performance objectives while minimizing any accessibility restrictions to properties will be most likely to support business visibility and accessibility. In other words, business performance is tied to the general transportation (speed, reliability, traffic flow) and site accessibility performance of the arterial redesign. Designing individual projects and investments to achieve those transportation and accessibility objectives will also support continued business vitality.

The most common business concerns relate to restricted turn movements, delivery accessibility, reduced business visibility from the arterial, and potential restrictions to circulation or business frontage associated with corridor rights-of-way expansion. All of these factors can be addressed in some manner during the design process. For example, the impacts from turn restrictions can be minimized through careful design of U-turn opportunities both at intersections and mid-block where right-of-way is sufficient. Florida DOT Median Handbook evaluated the midblock U-turn, which can serve as a reference⁶¹. And right-of-way needs can be kept to a minimum through a comprehensive corridor design. Combining roundabouts with medians may reduce the cross-section of street segments; thus preserving more property for fronting businesses, parking spaces, and site circulation.

EFFECT OF SHORT-TERM CONSTRUCTION DISRUPTION ON BUSINESS PERFORMANCE

The general literature on how infrastructure construction affects nearby business performance is fairly extensive and is beyond the scope of this review. Typically, larger infrastructure projects will develop a detailed construction staging and business impact mitigation strategy. Features of such strategies may include:

- Staging and phasing strategies that maintain access to businesses during primary business hours.

⁵⁹ Der Isolierte Staat in Beziehung auf Landwirtschaft und Nationalökonomie, oder Untersuchungen über den Einfluss, den die Getreidepreise, der Reichtum des Bodens und die Abgaben auf den Ackerbau ausüben, Vol. 1

⁶⁰ Weber, Alfred "Theory of the Location of Industries", Translated in 1929.

⁶¹ "2014 Median Handbook, Florida Department of Transportation," 2014



- Rerouting of traffic and pedestrian access to maintain best access to the most affected businesses.
- Communication and advertising campaigns to prepare businesses for disruption and alert customers of businesses still in operation.
- Signage and wayfinding to assist customers as they access business locations.

It is still often the case that disruptions during construction will have some detrimental influence over customer visitation and sales on businesses that are most impacted by the construction activities and road restrictions or closures. In the literature on street redesigns that address safety and congestion deficiencies, only the study by Eisele and Frawley⁶² examined the construction impacts as well as the post completion impacts on businesses. Based on their survey of affected businesses even as the median installations were seen to lead to increases in customer visits and gross sales after completion, the construction impacts were considered to be universally negative.

The reviewed literature suggests construction impacts will be experienced most profoundly by businesses dependent on passer-by traffic (e.g. retail as opposed to services).

LONG-TERM ECONOMIC DEVELOPMENT BENEFITS

Long-term gains to the economy reflect some underlying change in the productivity of resources available to advance economic activities. Investments in transportation can make other resources (labor and other inputs) more productive and can lower the costs of acquiring goods and services. The reconfiguration of arterial streets to address underlying safety and congestion deficiencies are no different from any other investment in transportation infrastructure. If the value of the safety and mobility benefits of the investments is greater than the costs of implementation, then there will be gains to the economy. Those gains may be capitalized in the form of income, business product, and property values.

Unless street redesigns alter productivity functions⁶³ in some material way, these kinds of changes will be primarily distributional. Areas that have been redeveloped (such that speeds, reliability, and safety are improved) may see more consumer activity and spending, but the total spending in the region is unlikely to change in any measurable way.

⁶² Eisele, William and William Frawley. 2000. "A Methodology for Determining Economic Impacts of Raised Medians: Final Project Results." Texas Transportation Institute, Texas A & M University System.

⁶³ An example could be increases in extra-regional tradable production.



We found nothing in the literature we reviewed regarding how businesses outside of a redesigned arterial area are affected by the implementation of the transportation infrastructure investment (the distributional issue). Our conclusion, based on a substantial literature in urban economics, is that unless regional economic conditions are changed in a sudden and notable way, then local policies that affect business operations lead to effects that are primarily distributional. Locations that receive new investment will probably do better economically than those that do not. Unless new development is of a scale and type that draws investment from outside the region, then the economic gains will be economic activities that would otherwise have gone elsewhere in a region.

In terms of consumers and consumption patterns, for arterial redesigns to change aggregate consumption they would need change the number of consumers, their incomes, preferences, rates of spending/saving, or the cost of goods. On the one hand, the cost of consuming goods may decrease because the transportation costs to the consumer of purchasing the good may decrease. On the other hand, higher densities and land values may work in the direction of higher rents and higher prices.

Based on the literature it is unlikely that arterial redesigns decrease consumption overall, or to any substantial degree. Some types of arterial redesigns lead to modest changes in mode of access. Some literature reviews the consumption patterns of customers that use different modes (auto versus bike or walk) of accessing businesses. “When demographics and socioeconomics are controlled for, mode choice does not have a statistically significant impact on consumer spending at convenience stores, drinking establishments, and restaurants.”⁶⁴ In fact (excluding supermarkets) pedestrians and cyclists may consume more. “When trip frequency is accounted for,⁶⁵ the average monthly expenditures by customer modes of travel reveal that bicyclists, transit users, and pedestrians are competitive consumers and for all businesses except supermarkets, spend more, on average than those who drive.”⁶⁶

The land development impacts of arterial redesigns are also very difficult to evaluate or predict. Even if a redesigned street produces notable gains from addressing congestion and safety issues, leading to increased consumer spending and gross business receipts, and finally higher land values – the development outcomes are still not necessarily obvious. Higher land values result in a higher residual value of land in the property development process. This can represent a barrier to redevelopment. Often investments in infrastructure alone are not sufficient to induce new property development and other factors such as zoning, development

⁶⁴ Clifton, K. J., Muhs, C., Morrissey, S., Morrissey, T., Currans, K., and Ritter, C. 2012. *Consumer Behavior and Travel Mode Choices*. Oregon Transportation Research and Education Consortium.

⁶⁵ Previous studies that did not control for trip frequency found that automotive-based consumers spent more per trip. Though automotive consumers spend more per trip, non-automotive consumers have greater frequencies of trip. Clifton et al., 2012.

⁶⁶ Clifton, K. J., Muhs, C., Morrissey, S., Morrissey, T., Currans, K., and Ritter, C. 2012. *Consumer Behavior and Travel Mode Choices*. Oregon Transportation Research and Education Consortium.



regulations and parking regulations must be altered before the dynamics of the development process are altered sufficiently to result in changes in the built environment.

CONCLUSION

The literature reviewed consisted of studies that attempt to measure the effect of arterial street reconfigurations on retail sales and business performance. Well-designed studies that control for a wide range of factors influencing business performance are difficult and expensive to implement and, as a result, are scarce. A review of the available literature concluded that there is no evidence that the implementation of access management strategies, and raised medians and roundabouts in particular, result in broad negative impacts to businesses. To the contrary, a number of studies identified positive business outcomes. Improved business performance results from addressing underlying traffic congestion and safety deficiencies. General urban economic theory dictates that should investments change business site accessibility and gross sales, those changes should eventually be captured in the value of the underlying property rather than the profitability of a specific business. While changes in land values may be observed, those changes may not indicate business gains or losses in terms of sales or profits.

There is some evidence that auto-oriented businesses (e.g. gas stations, auto servicing) and businesses in mid-block locations may be more susceptible to lower customer visitation as a consequence of access restrictions (restricted turn movements, limitations in sight lines, etc.). Also, businesses that rely upon opportunistic visitation (where the business is not a primary customer trip destination) may be affected by access restrictions should their business become less visible to pass-by traffic. And some literature suggests that business losses during construction may be the primary negative effect on business performance. Such construction impacts would occur from any corridor construction, independent of the final configuration of the project.



APPENDIX A: LITERATURE REVIEWED

This appendix contains the literature cited in the memo above as well as literature reviewed and considered throughout our research process.

Appendix A: Literature Reviewed

Title	Author(s)	Year	Summary
Nickerson Street Rechannalization Before and After Report	(see DKS report)	2004	DKS Case Study. Speeding and collisions down significantly after the road diet. Change in total average weekday volume was negligible, about a 1% reduction. No business impacts are discussed.
The Relationship of Transportation Access and Connectivity to Local Economic Outcomes: A statistical Analysis	Alstadt et al	2011	This article asks the right question: how does transportation infrastructure affect delivery of product inputs, labor market access, and customer access? But the analysis is on a county-level rather than street or neighborhood level, so it isn't useful when looking Main Street.
Complete Streets	American Planning Association	2010	200-page review with excerpts from several sources
The Effects of Traffic Flow on Residential Property Values	Bagby, DG	1980	This article presents an empirical study of the effects of traffic flow on residential property values in the community of Grand Rapids, Michigan. Residential values in two identical neighborhoods are compared over a 25-year period. One neighborhood serves as a control for the measurement of the impact of changes in traffic flow upon residential values in the other. The results show that residential property values exhibit a surprisingly high elasticity with respect to reductions in traffic flow.
Trends in Local Business Sales, Building Values, and Office Rents at NYCDOT Street Improvement Project Sites	Bennett Midland	N.d.	Evaluated the effects on business sales following various types of street improvements including medians, bike lanes, traffic pattern alterations, and creation of new public spaces. At 8 of 11 sites (73%) business sales increased at a greater rate than at comparison areas. At 9 of 11 sales increased in the first year after improvements. The projects may have promoted economic growth. Commercial building values increased at 4 of the 6 sites with available data.
From Policy to Pavement: Implementing Complete Streets in the San Diego Region	Bleir, A., Ferrier, K., Hamilton, A., Konar, G., Peterson, B., Sorenson, D., and Torma, S.	2012	Mostly advocating for Complete Streets in San Diego, but this article does lay out the range of benefits that stem from Complete Streets including branding and revitalization of commercial districts
Final Report for Secretary Department of Transportation and	Burk-Kleinpeter, Inc.	2010	Summarizes the costs and benefits of complete streets. Economic benefits: houses with higher walkability command higher prices; 66% of San Fran Mission District businesses believed that bike lane had positive

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Title	Author(s)	Year	Summary
Development			impact on business or sales; bike friendliness
Edgewater Drive Before & After Re-Striping Results	City of Orlando - TPB	2002	DKS Case Study. 34% reduction in crashes. 68% reduction in injuries. Significant reductions in speeding. 9-12% reduction in daily traffic volume (depending on segment). Pedestrian traffic increased by 23%, bicycle by 20%. Side street traffic reduced by 4%, on average. Travel times increased from about 3.3 minutes to 4.2 in the AM, and a mix of increases and decreases depending on direction in the PM.
Fourth Plain Boulevard Demonstration Re-Striping Project - Post Implementation Report	City of Vancouver - Transportation Services	2004	DKS Case Study. A study was commissioned to estimate "taxable retail sales" in the area. The study found that the area fared no worse than its peers and in 2002-2003, the last year of the study, the area faced a 4.7% decline in revenues versus 9.8% and 25.0% declines in other nearby commercial zones. 2 consumer complaints were made that regarded traffic signal timing.
The Path to Complete Streets in Underserved Communities	Clifton et al	N.d.	Conducted four case studies about getting complete streets in underserved communities.
Consumer Behavior and Travel Mode Choices (see also, Clifton et al Business Cycles....)	Clifton, K. J., Muhs, C., Morrissey, S., Morrissey, T., Currans, K., and Ritter, C.	2012	Research based in the Portland metro area. Supermarkets had the highest share of private vehicle use, 86%. Drinking places have the lowest, 43%. High-turnover restaurants, 64%. Convenience Stores, 59%. Automobile consumers were found to spend more per trip, but not statistically different amounts on a monthly basis (fewer trips). Bikers spend more each month than automobile drivers at restaurants, drinking establishments, and convenience stores (table 4-2). Several other useful results relate to directness and connectivity as significant predictors of someone choosing bicycle mode of transportation.
Complete Streets Spark Economic Revitalization	Complete Streets Steering Committee Organization	N.d.	2-page summary pamphlet of the economic revitalization that many areas have experienced after implementing complete streets programs
Portland's Green Dividend	Cortright - CEOs for Cities	2007	Makes the argument that Portlanders save money by not using cars as much, which leaves them with more money to spend in the local economy. Car and Gas money also leaves Oregon immediately.
Walking the Walk: How Walkability Raises Home Values in U.S. Cities	Cortright, J.	2009	In this report, Cortright linearly regresses property values against a measure of walkability and finds that properties with higher walkability scores are associated with higher property values. As explained in our white paper, though this is an encouraging finding, we are reluctant to rely on it to understand the potential effects of complete streets. We bring it up, in part, because in our survey of the literature, Cortright's article was widely

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Title	Author(s)	Year	Summary
			cited.
Economic Effects of Access Management Techniques	Cunningham, C., Schroeder, B., Findley, D., Foyle, R., Katz, D., Smith, S., Carter, D., and Miller, M.	2010	This study employs a perception-based survey technique with the use of comparison sites to create a pseudo before-after study. Owners of businesses along treatment corridors viewed access management techniques in a more positive light than the perceptions of those on comparison sites. Their similar performance in terms of business revenues indicates that there is no direct evidence of negative economic impacts due to access management installations.
Road Diet Seminar	Daisa	N.d.	Provides an overview of road diet practices, where the policies are best implemented, and the typical effects on traffic patterns and accidents. Not much on businesses
Economic Effects of Traffic Calming on Urban Small Businesses	Drennen, Emily	2003	Drennen interviewed 27 merchants in the Mission District about Valencia Street bike lanes. 44.4% said economic revitalization was "Better", 0% said it was "Worse." 46.2% said reduced auto speeds had a "Better" effect on sales, 7.7% said it was "Worse." 37% said sales were "Better," 0% "Worse" and several other useful results (page 46). 65.4% said it had a better general impact on business and sales, 3.8% said worse. Categorizes the benefits that small businesses get from "traffic calming" efforts and provides examples from the literature for each: Economic Revitalization and Property Values; Attractiveness and Safety; Sales and Attracting Customers; Parking; Impact on Employees; Construction and Costs. Customers who drive less have more disposable income.
Economic Impact of the Public Realm	ECOTEC	2007	Includes several case studies of public realm projects and their economic impacts in Europe.
A Methodology for Determining the Economic Impacts of Raised Medians: Final Project Results	Eisele, William and Frawley, William	2000	Survey-based research. Found that business perceptions of business impacts prior to the project were worse than actuals. There were negative impacts during the construction phase
Re: Post Road Diet Assessment - January through October	Faught, Mike	2013	A post implementation assessment of the engineering outcomes of a road diet investment as well as a survey of household attitudes about the road reconfiguration; showing slightly positive attitudes overall.

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Title	Author(s)	Year	Summary
Evaluation of Lane Reduction "Road Diet" Measures and Their Effects on Crashes and Injuries	FHWA	2004	Looked at 24 comparison sites in California and Washington. "On average, crash frequencies at road diets in the after period were approximately 6 percent lower than at the corresponding comparison sites." Road diets, however, did not have an effect on crash type or crash severity, but this study did not account for speed at the time of crash.
A Comparative Analysis of Bicycle Lanes Versus Wide Curb Lanes: Final Report	FHWA	1999	Summarizes the trade-offs between wide sidewalks and bike lanes.
Bike Lanes, On-Street Parking and Business	Forkes, J. and Lea, NS	2009, 2010	Survey research of drivers, pedestrians, and cyclists to a commercial neighborhood in Toronto. Mostly focuses on the transition from parking spaces to bike lanes and/or sidewalk space. Finds that most businesses and customers consider the shift towards more walkability and bikability to be advantageous.
Post Road Diet Assessment - January through October	Fraught, Mike	2013	North Main St in Ashland, OR. Mostly a traffic and crash analysis, but also surveyed 552 residents and interviewed 38 of 50 businesses. 3/4 of business said that the reconfiguration had no impact on business. For most of the other 1/4, deliveries to their location were negatively affected. Businesses were evenly split on whether they wanted to keep the new configuration or go back to the 4 lane configuration
Pedestrian and Bicycle Infrastructure: A National Study of Employment Impacts	Garrett-Peltier, Heidi	2011	In this article, Garrett-Peltier uses IMPLAN to evaluate the direct, indirect, and induced employment that is created through the design, construction, and materials procurement of bicycle, pedestrian, and road infrastructure. She found that these projects created more design and construction jobs than automotive projects, and attributed this to pedestrian and bicycling projects' higher labor intensity.
Roundabout's Impact on Nearby Businesses	Godavarthy, R. P., Mirzazadeh, B., Russell, E. R., and Landman, D.	2016	A folio summarizing the results of the 2012 study. See Russell.
The Economic Costs of Road Traffic Congestion	Goodwin, Phil	2004	An economic text outlining the economic consequences of road congestion, including the role of travel time unreliability.
Stability in Competition	Hotelling, Harold	1929	Theoretical text on the role of product differentiation on the optimal location of firms.

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Title	Author(s)	Year	Summary
How Much Do You Lose When Your Road Goes on a Diet?	Huang et. al.	2003	Focuses on crashes. Finds no significant impact on crash rates
Maximizing the Economic Returns of Road Infrastructure Investment. Chapter 3: The Relationship Between Road Infrastructure Investment and Economic Development	Joynt, Hubert	2009	Theoretical, as described in the title.
Economic Impact of Traffic Incidents on Businesses	Khattak et. al.	2008	Focused on North Carolina's interstate highways. Found a significant cost per hour of delay for accidents, but this cost varied by type of business. Did not focus on demand-side delays, just supply-side. Retail cost was \$156/hr of delay.
RE: Fire/EMS Input on "Road Diet" Projects	Kingsbury, Dwight	2013	Kingsbury is the FDOT Safety Officer in Tallahassee, FL. This memo argues that a 3-lane reconfiguration may improve EMS response over 4-lane configurations.
Urban Minor Arterial Four-Lane Undivided to Three-Lane Conversion Feasibility: An Update	Knapp et. al.	2003	Researches the traffic effects of 4-3 lane conversion. Based on simulations, recommends that areas with peaks under 750 vphpd will see few impacts. Those from 750-875 require caution in implementing a conversion. The authors express a lot of concern for those about 875 vphpd. Most simulations had a significant reduction in speeders.
The Economic Impact of Investments in Bicycle Facilities: A Case Study of the Northern Outer Banks	Lawrie et al - NCDOT	2004	Survey research to measure the impact of significant investment in bicycling infrastructure. Investment in bicycling infrastructure has paid dividends. Mostly focuses on tourists and found that bicycle access was much of the reason some tourists visited an area
Bike and pedestrian street improvements and economic activity in NYC	Lee, BS and Sprung, B.	2013	In this study of New York City street improvements, Lee and Sprung find that the improvements—which included bicycle infrastructure, street trees, sidewalk improvements—in some cases led to higher sales tax revenues, which indicates greater consumption. In other cases, the revenue was lower or was not significantly different than it was previously.

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Title	Author(s)	Year	Summary
Walk this Way: The Economic Promise of Walkable Places in Metropolitan Washington, DC	Leinberger & Alfonzo	2012	Findings start on page 9 with summary table. Found that a 1-level increase in the walkability index (IMI) resulted in higher average office and retail rent per sq. ft., higher retail sales, higher res rents, and average home values.
Evaluating Transportation Economic Development Impacts	Litman, Todd	2010	Mostly theoretical guidance on how to measure the economic impacts of transportation projects. On page 52 is the "Impacts on Specific Industries and Businesses" section. This discussion includes how "old" industry tends to favor automobile traffic and "new" industry does not. Since new industry tends to be where expansion is possible, public policy should support programs that support newer types of industries. Page 78 has an example of shift from vehicle spending to general consumer spending that occurs if there's a shift from car travel to other types of travel.
Generated Traffic and Induced Travel	Litman, Todd	2010	See other Litman articles. This mostly is about how to value consumer surplus of transportation shifts and does not touch on the effect on businesses.
Evaluating Complete Streets	Litman, Todd	2013	Mostly advocacy, but Table 7 provides a guide to quantification of often overlooked impacts, which the city might be interested in seeing at some point.
Traffic Calming Benefits, Costs and Equity Impacts	Litman, Todd	1999	Provides a framework for doing a cost benefit analysis or road diet projects. Monetizes many costs and benefits (e.g. crashes) that aren't monetized elsewhere. Provides an example of Bridgeport Way where tax revenues increased in the years after a road diet relative to tax revenues from the whole city. Unfortunately, doesn't cover this topic anywhere else in the paper.
Safety and Operational Analysis of 4-lane to 3-lane Conversions (Road Diets) in Michigan	Lyles et. al.	2012	Finds that diets for areas with ADTs over 10K face significant delays, but this mostly applies to sites with peak hour volumes above 1000. 4L4W doesn't point this out. Nor do they point out that the study said all the effects are almost entirely corridor-specific. 4L4W also neglects to point out that the study found that road diets resulted in lower crash frequencies, but again have a lot of site-to-site variation. One appendix has a detailed literature review.
Access Management Research and Awareness Program Phase IV Final Report	Maze, T. and Plazak, D.	1999	Case studies. As seen with previous case studies in this series, these two projects had positive impacts on traffic safety and operations and do not appear to have adversely impacted the vitality of businesses along the managed corridor.

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Title	Author(s)	Year	Summary
It's a Safe Decision: Complete Streets in California	McCann, B., Meyer, A., Wood, J., and Morfas, C.	2012	This report compiles complete street case studies in California to argue that their implementation should be more widespread. The case studies collectively provide a fairly comprehensive picture of the effects of complete streets. However, in discussing economic activity, other factors are not controlled for.
York Blvd: The Economics of a Road Diet	McCormick, Cullen	2012	York Blvd, Los Angeles. Relies on qualitative and quantitative data. Most businesses presumed that their customers arrived by car, but these notions were mistaken. Business turnover road diet v non-road diet 55% v 62%; did not find statistically different property values; non-road diet areas had a higher growth rate in revenues, but road diet portions had a higher absolute increase in revenues. In sum, "The quantitative analyses in this report do not reveal meaningful linkages between the presence of a road diet and changes in economic conditions."
Willamette Street Traffic Analysis	McKenney Engineering	2001	Previous evaluation of improvement alternatives for same stretch of Willamette
The Many Benefits of Complete Streets	National Complete Streets Coalition	2013	A communication piece outlining the benefits of complete streets without a discussion of the costs or tradeoffs.
Complete Streets Spark Economic Revitalization	National Complete Streets Coalition	N.d.	This brief on complete streets argues that complete streets lead to transformative economic changes. Though much of it is informative, it operates as advocacy, and not rigorous analysis. We cite it as such.
Economic Development	National Complete Streets Coalition	N.d.	In this article, the National Complete Streets Coalition argues that complete streets lead to transformative economic development, raising property values and investment. We cite it as advocacy, and not as rigorous analysis.
Washington's Complete Streets and Main Street Highways Program: Case Studies and Practice Resource	Nicholls et. al.	2011	Mostly advocacy and general description of what the WA Complete Streets program does.
Measuring the Street: New Metrics for 21st Century	NYDOT	2013	Meant to be a pamphlet. For the first protected bike lane in the US, 8th and 9th avenues in Manhattan, says that locally-based business on 9th from 23rd-31st had "up to 49% increase in retail sales" compared to a 3%

Appendix A: Literature Reviewed

Title	Author(s)	Year	Summary
Streets			increase borough wide. There was also "49% fewer commercial vacancies" compared to 5% borough-wide. Dedicated lanes for buses and bike on 1st and 2nd Avenues in Manhattan: 47% fewer commercial vacancies compared to 2% borough-wide.
The Economic Benefits of Sustainable Streets	NYDOT	2013	Follows up on the 2012 Measuring the Street study to update metrics to accurately measure the impacts of street revitalization. Has a good lit review and makes the case that street improvements and traffic calming increase the number of shoppers, revenue, and property values. Also points out that businesses are typically opposed to projects beforehand. Provides a summary of the biases present in the 2011 Stantec report. NYDOT, with consultants, developed their own metric which includes retail sales tax filings, commercial leases and rents, and city-assessed market value. Methods included paired comparisons between sites and boroughs, and other comparisons between sites other similar sites within the neighborhood. Evaluated the addition of street corridors and plaza on retail trade and food businesses over two years before and after a project. Offers several lessons for doing this type of research in the future. Includes 3 Manhattan, 2 Bronx, and 2 Brooklyn Case studies
New York City, New York Municipal Forest Resource Analysis	Peper et. al.	2007	Mostly irrelevant - cited in NYDOT 2013 paper - but p. 59 has a discussion of the effect that additional trees have on property values and other factors. People are willing to pay 3-7% more for properties with ample trees versus no trees.
Road Diet Handbook - Overview	Rosales, Jennifer	N.d.	Provides a number of case studies of road diets. Does not include much information on effects on businesses, but does cite a Vancouver case where sales increased when compared to similar, non-road diet sites in the area.
Bikenomics: Measuring the Economic Impact of Bicycle Facilities on Neighborhood Business Districts	Rowe, Kyle	2013	Concludes that the addition of bicycle lanes did not have a negative impact on business districts.
Street Redesign for Revitalization: West Palm Beach, FLA	Rush, N., Actman, L., McMahon, P., and Renski, H.	N.d.	This case study of West Palm Beach Florida attributes the area's transformative economic change to complete streets, but fails to control for other factors (i.e., it does a before/after analysis, where a with/without would be more telling).
A Study of the Impact of Roundabouts on Traffic	Russell, E. R., Landman, D.,	2012	This study reviewed the literature and all sources where national data or reliable case studies addressed the issue of the impact of roundabouts on business to serve as a basis for Kansas studies. The most relevant

Appendix A: Literature Reviewed

Title	Author(s)	Year	Summary
Flows and Business	Godavarthy, R. P.		study found in the literature was a study of South Goldman Road in Golden, Colorado, where four roundabouts were built in a business corridor with many positive results which led to the conclusions that “yes, roundabouts are good for business.” Survey results were generally positive albeit mixed. The simulation study of the Topeka business area, assuming several intersections were replaced with roundabouts, showed significant reductions in delay and queuing for most all significant traffic movements. Based on the authors’ assumption that better traffic flow and access are good for business, it was concluded that the addition of roundabouts in this corridor would have been good for business. The overall conclusion of the study was that roundabouts have a positive impact on traffic flows and business.
Transportation and The Economy	SACTRA	N.d.	298-page document that provides a lot of theoretical guidance. Euro-centric, but still useful. Chapter 7 is all about how traffic reductions may affect economies, some highlights. Unfortunately, it focuses on taxation and other policies as means to reduce congestion "The external costs arising from road transport provide a rationale for traffic reduction, insofar as this arises from the alignment of marginal benefit with marginal social cost." (p 129)
Polk Street Intercept Survey Results	San Francisco Municipal Transportation Agency	2013	Focuses on consumer spending by mode of transportation to the region. Cars spent more per TRIP than cyclists, pedestrians, and transit, but had lower per WEEK spending than all three types.
Curbing Cars: Shopping, Parking and Pedestrian Space in SoHo	Schaller Consulting	2006	Conducted 1000 interview, pedestrians and motorists. Concluded that most visitors, residents, and workers wanted less parking space and more pedestrian space. Also asked respondents about spending patterns.
38th Avenue Corridor Plan Implementation	Showalter, Sarah	2012	38th avenue in Wheat Ridge, CO. At the very end does a simple before and after measure of sales tax revenue
The Economic Value of Active Transportation	Snyder, R.	N.d.	In this fact sheet, Snyder reviews the literature and finds that homeowners are willing to pay more for walkable, bikable, low-traffic, quiet streets. The author supports his conclusions largely with case studies. Since this is a fact sheet, it does not lend itself to great scrutiny.
Vancouver Separated Bike Lane Business Impact Study	Stantec Consulting	2011	Collected business economic data to measure impacts of 2 bike lanes. The net impact on sales at business adjacent to the bike lanes was -10% and -4%, respectively. Business owners estimated losses to be between -6% to -9%. These loses were found to be insufficient to create persistent vacancies. Customers reported comparable reductions in visiting the two areas; the reasons for these reductions were traffic congestion, less parking, turning restrictions, and reduced pedestrian safety. Provides a list of recommended mitigation

Appendix A: Literature Reviewed

Title	Author(s)	Year	Summary
			measures, but many of these are specific to a dense downtown area.
Methodology for Determining the Economic Development Impacts of Transit Project	TCRP - TRB	2012	Focuses on travel time savings, costs of construction, environmental impacts, effects on land development, and effects on agglomeration economies. It is one of the first studies to look at the later, or so it claims. Does not focus on business impacts
Application of a Case Study Methodology	Tellis, W.	1997	A methods document on the design, role and limitations of the case study approach to research.
Der Isolierte Staat in Beziehung auf Landwirtschaft und Nationalökonomie, oder Untersuchungen über den Einfluss, den die Getreidepreise, der Reichtum des Bodens und die Abgaben auf den Ackerbau ausüben, Vol. 1	Thünen, Johann Heinrich von	Translated in 1966	Classic text in economics on land rents and transportation.
Der Isolierte Staat..., Vol II: Der Naturgeässe Arbeitslohn und dessen Verhältnis zum Zinsfuss und zur Landrente, Part 1	Thünen, Johann Heinrich von	Translated in 1966	Classic text in economics on land rents and transportation
East Village Shoppers Study	Transportation Alternatives		420 surveys with pedestrians. Pedestrians and bikers spend more per capita per week at local businesses and visit the neighborhood more often than car and subway users. Recent additions of bike lanes increased bike use dramatically. 73% of respondents said the lanes had a positive or very positive impact on the neighborhood.
Linking Transportation and Land Use	Transportation Research Board	2006	State of the evidence on the relationships between lane use and transportation. This report is essentially a compilation of case studies of transportation and land use projects. Though none of the projects examined are explicitly complete streets, the projects share many things with complete streets (traffic calming, streetscape improvements, etc.). Many of the case studies describe increased retail and consumer activity after a project,

Appendix A: Literature Reviewed

Title	Author(s)	Year	Summary
			though these descriptions are too brief to lend themselves to greater scrutiny
New Tool for Estimating Economic Impacts of Transportation Projects: Transportation Project Impact Case Studies	TRB	2012	Like the study above, focuses on highway expansion. Not relevant to impacts of changes to city streets.
Economic Impacts of Access Management	Vu, Patrick	2002	A report prepared for the Washington State Transportation Commission examined the relationship between business perceptions of access management and business perceptions of their own performance.
Theory of the Location of Industries	Weber, Alfred	Translated in 1929	Alfred Weber formulated a theory of industrial location in which an industry is located where the transportation costs of raw materials and final product is a minimum.
Progress and Challenges in the Application of Economic Analysis for Transport Policy and Decision Making	Weisbrod & Alstadt	2007	Discussion paper on the interaction between transportation and economic modeling.
Economic Effects of Restricting Left Turns	Weisbrod, Glen E. and Neuwirth, R.	1998	The objective of this research was to determine the economic effects on adjacent businesses and property owners because of restricting left-turn movements. The statistical analyses conducted with the available data indicate that left-turn restrictions affect different types of businesses differently. Gas stations, non-durable goods retailers, and service businesses appear to be the most likely to be adversely affected; where restricted, these businesses showed the largest sales declines, and the highest rates of business failures. Businesses at mid-block locations (i.e., away from intersections) perceived the left-turn restrictions as more detrimental than did businesses at intersections or other points where left turns were permitted. In some cases, left turn restrictions appeared to cause a portion of sales to shift from the restricted to the unrestricted business locations within the study corridor.
Measuring the Economic Costs of Urban Traffic Congestion to Business	Weisbrod, Glen et. al.	2003	Uses data from Chicago and Philadelphia, and is explicit that their findings are specific to "large urban areas." Each sector is affected in different ways by congestion, as each relies on freight, customer, etc. road use to different degrees. Impacts also depend on location (e.g. industrial v. downtown). Losses are not put in a /minute drive time or /daily visits measure.

Appendix A: Literature Reviewed

Title	Author(s)	Year	Summary
Raised Median Economic Impact Study	Utah DOT; Matt Riffkin, C. Allen, M.Baker, C.Richman, J. Dorwart	2013	In this study businesses sales tax records in three corridors (plus control corridors) where raised medians were implemented were examined to evaluate the economic impacts of the corridor operational changes. The affected businesses performed as well as, or better than, the control group corridors. Business perceptions were also assessed through surveys. In spite of no evidence for poorer business performance business perceptions of raised medians was that they impeded customer access.
Operational and Economic Analysis of Access Management	South Carolina DOT	2018	This study examined both operational and economic impacts of access management in six corridors in South Carolina. The perception of customers and businesses located along corridors with raised medians were surveyed. Economic impacts were examined using data about sales volumes over a three year period. Analyses indicated that the sales volume decrease of the affected businesses was similar to that of businesses in the control group. This finding suggests that the installed raised median was not the reason the affected businesses experienced a reduction in sales volume.
Business District Streetscapes, Trees, and Consumer Response	Wolf, KL	2005	In this study, Wolf surveyed consumers to examine how they respond to forested urban streetscapes. She found that on forested streetscapes, consumers viewed stores and products more positively, travelled and stayed longer at stores, and were willing to pay more for parking and products.
PPS Right Sizing Case Studies			There are several case studies here. None address economics. They all address volumes, crashes, etc.



MAIN STREET SAFETY PROJECT | 20th Street to 72nd Street

TECHNICAL MEMORANDUM #10: GOALS & OBJECTIVES

DATE: May 28, 2019

TO: Molly Markarian | City of Springfield
Bill Johnson | ODOT Region 2

FROM: Jean Senechal Biggs, Kayla Fleskes, Garth Appanaitis and Lacy Brown | DKS Associates
Jeanne Lawson and Allison Brown | JLA Public Involvement

SUBJECT: Task 7.1 Problem Statement, Goals & Objectives
Tech Memo #10: Final

DKS Project 14180-023

This memorandum describes the project purpose, goals and objectives for the Springfield Main Street Safety Project. To develop the purpose, goals and objectives, the project team reviewed previous planning studies in the corridor and gathered the input of agency stakeholders and community members. As work on the project continues and infrastructure solutions are developed for the corridor, the goals and objectives will be used to evaluate each and help guide decision-making. The goals will shape the actions and transportation improvements that will be recommended to create a safer Main Street.

Project Purpose Statement

The project team developed the project purpose statement in spring 2018 to describe the overarching problem the project seeks to address and a vision for the plan outcomes. The project team reviewed the City's Transportation System Plan (TSP) and previous corridor-specific studies to ensure consistent goals and objectives. Previous studies along the corridor include the Main-McVay Transit Study (MMTS) and the Springfield Main Street Corridor Vision Plan (MSVP). Some goals that consistently appeared within these documents include:

- Safe and efficient vehicle travel including access to properties fronting the street (MSVP)
- Multi-modal transportation balance appropriate to the land use environment (MSVP, MMTS, TSP)
- Address the mobility and safety needs of motorists, transit users, bicyclists, pedestrians, freight, and the needs of emergency vehicles when planning and constructing roadway system improvements (TSP)



Attachment 3, Page 1 of 7





- Support economic development, revitalization and land use redevelopment opportunities for the corridor (MMTS, TSP)
- Improved pedestrian safety crossing of Main Street (MSVP, MMTS)
- Reduced vehicle speeds (MSVP)

The Springfield City Council provided input on a draft purpose statement and the Main Street Governance Team provided further refinement. The final purpose statement endorsed by the Governance Team reads as follows:

Springfield's Main Street is consistently ranked as one of the most unsafe city streets in Oregon based on the severity and frequency of traffic crashes. ODOT and the City must address this problem to save lives, reduce injuries, and lessen property damage due to crashes. The purpose of the Main Street Safety Project: Planning Phase is to select infrastructure solutions that will make Main Street safer for people walking, biking, driving, and taking transit.

The selected safety improvements will provide for the movement of goods and people, support the economic viability of the corridor, accommodate current bus service and future transit solutions, and complement traffic safety education and enforcement.

Community Values

In fall 2018, the project team conducted four focus groups and held an online open house to gather input on a set of six values derived from City's TSP and prior corridor studies. Participants were asked to vote on or rank the values, and those results were used to develop a framework for the project specific goals.

The values presented to participants were:

- Safety: I value solutions that reduce the risk of fatalities and serious injuries
- Local Business Access: I value solutions that support the viability of the businesses on Main Street by providing access and minimizing other impacts
- Traffic Mobility: I value solutions that minimize congestion and maintain the flow of traffic
- Cost: I value solutions that are cost-effective and make good use of public funds
- Main Street Character: I value solutions that improve the appearance of Main Street and make it a vibrant place for those who live, work, shop, and travel through the corridor
- Transit: I value solutions that support reliable and frequent transit service that is accessible from destinations along Main Street



Focus Groups

The project team did targeted outreach to four community groups in November-December 2018 and heard input from community members who access the corridor, including youth, seniors, low-income individuals, and Spanish-speaking individuals. Summaries of each of the four focus groups (Downtown Languages¹, Briarwood Senior Living², Catholic Community Services³ and Willamalane Two50 Club⁴) provide further detail about each activity and are posted on the project’s website⁵.

As part of each meeting, participants were given three plastic coins to ‘vote’ on their top three values by placing them into labeled ‘values’ jars. Staff clarified that participants could put multiple coins into one jar, if they felt strongly about that value. A total of 86 individuals participated and Table 1 shows the number of participants in each focus group.

Table 1: Focus Group Participation

Community Group	Environmental Justice (EJ) Population	# of Values Exercise Participants
Downtown Languages	Latinx/Spanish-speaking	26
Catholic Community Services	Low-income	24
Briarwood Senior Living	Seniors	20
Willamalane Two50 Club (youth)	n/a	16

Figure 1 summarizes and provides a comparison of the results across each of the four focus groups. Safety was the highest ranked value across all groups. Transit and traffic mobility scored well across all groups, with cost, local business access and main street character nearing the bottom of the rankings.

¹ http://ourmainstreetspringfield.org/wp-content/uploads/2019/02/Downtown-Languages-Summary_FINAL.pdf

² http://ourmainstreetspringfield.org/wp-content/uploads/2019/02/Briarwood-Summary_FINAL.pdf

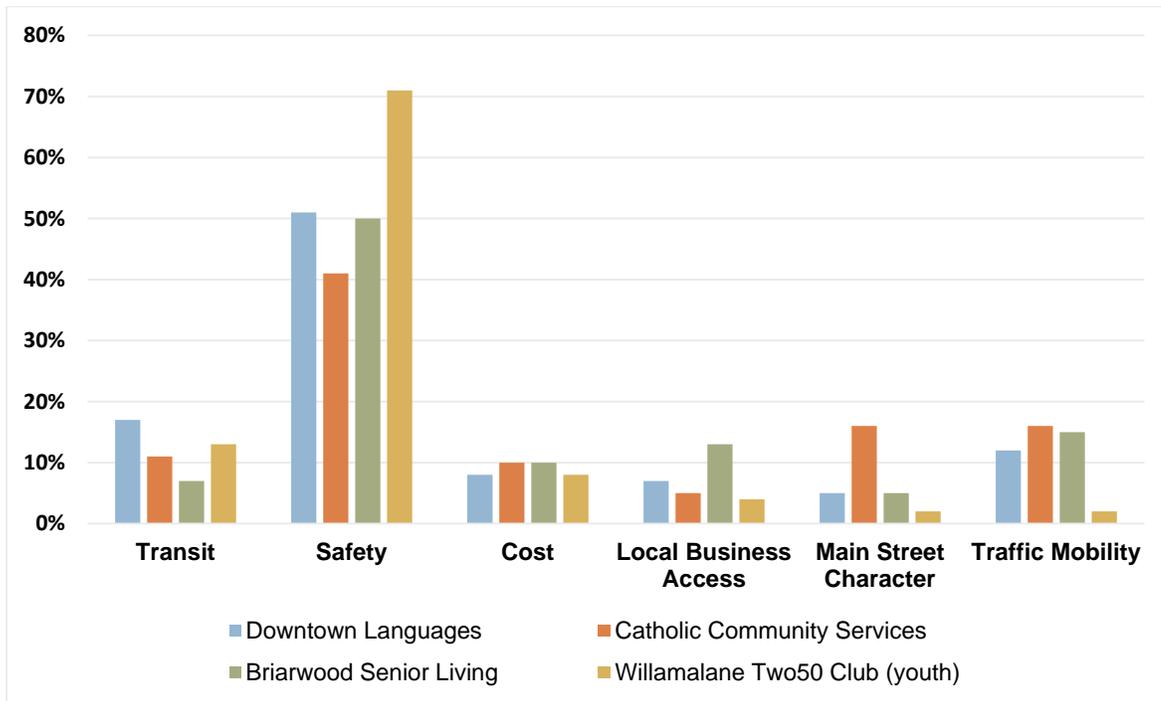
³ <http://ourmainstreetspringfield.org/wp-content/uploads/2019/02/CCS-Summary- FINAL.pdf>

⁴ http://ourmainstreetspringfield.org/wp-content/uploads/2019/02/Youth-Focus-Group-Summary_FINAL-.pdf

⁵ <http://ourmainstreetspringfield.org/main-street-safety-project/>



Figure 1: Focus Groups Values Rating



Online Open House

The Online Open House launched on November 7, 2018 and a total of 450 new (first-time) users viewed the site and provided input. A summary of the results⁶ are on the project website⁷.

The open house included a values exercise; participants were given 21 points and asked to assign up to six points to each of the various community values based on priority – the highest number of points indicates the highest priority, while the least amount of points indicates the lowest priority. A total of 170 people participated in this section of the Online Open House. Participants showed the strongest support for safety which garnered over twice the number of participants assigning six points than the next highest ranked values, local business access, and traffic mobility. The community value with the least support for Main Street was transit.

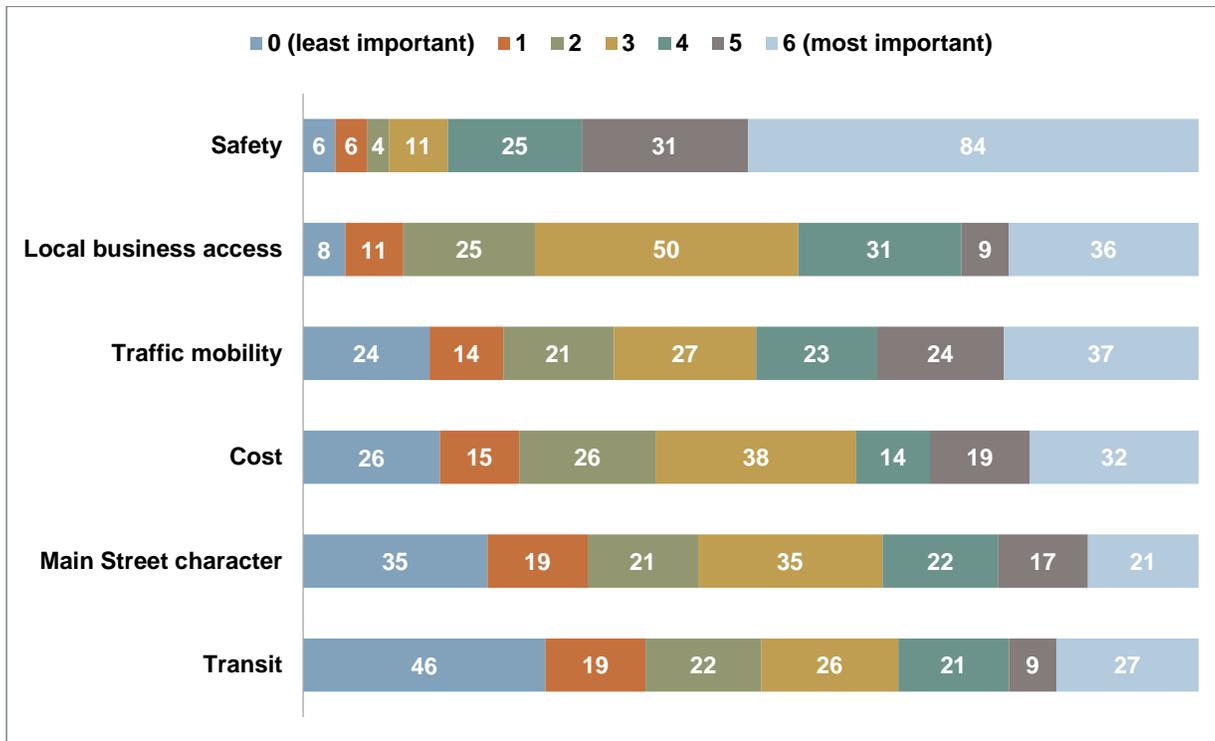
Figure 2 illustrates how participants assigned their points (0-6 points) to each community value and are listed based on the aggregate total of the assigned points. For instance, while one less person assigned six points to local business access than to traffic mobility, the total number of points for local business access is greater than that for traffic mobility.

⁶ http://ourmainstreetspringfield.org/wp-content/uploads/2019/02/Online-Open-House-Outreach-Summary_FINAL.pdf

⁷ The project team also received 26 total inquiries/comments related to the project from 25 individuals outside of the online open house, focus groups, and SAC Meeting #1 forums and documented them in a summary that can be found on the project website. http://ourmainstreetspringfield.org/wp-content/uploads/2019/02/Other-Comment-Submission-Summary_FINAL.pdf



Figure 2: Online Open House Values Responses



Project Goals and Objectives

With the results of the values exercises, the project team further refined applicable goals and objectives from the City’s TSP and prior corridor studies into a set of goals and objectives specific to the project. A goal is an overarching principle or a broad statement of intent that informs the range of possible transportation solutions and guides decision-making. Objectives are specific, measurable, and relevant steps that are taken to meet the goal.

As transportation infrastructure solutions are developed, these six goals and associated objectives will be used to evaluate each solution.

Safety – Increase the safety of Main Street for all users

Objectives: Identify infrastructure solutions that:

- ✓ Have been demonstrated to result in reducing fatalities and serious injury crashes so that Main Street is not on the statewide high crash list
- ✓ Have been demonstrated to result in reducing the frequency of all crashes so that Main Street is not on the statewide high crash list

Note: The primary purpose of the Main Street Safety Project is to improve safety. For a design solution to advance, it must demonstrate an improvement to safety above all other goals.



Business Community – Support the viability of existing and future businesses

Objectives: Identify infrastructure solutions that:

- ✓ Provide viable ways for customers and deliveries to patronize/serve businesses along Main Street corridor
- ✓ Support the visibility and economic viability of Main Street businesses
- ✓ Support the potential for future businesses to locate on Main Street

Mobility – Ensure people and goods travel efficiently and reliably through the corridor

Objectives: Identify infrastructure solutions that:

- ✓ Maintain or improve the efficiency and reliability of passenger vehicle operations through the corridor
- ✓ Maintain or improve the efficiency and reliability of transit operations through the corridor
- ✓ Maintain or improve emergency response times for police, fire and life safety operations
- ✓ Meet ODOT's freight vehicle mobility standards along Main Street

Transportation Choices – Create a multimodal environment that connects people and destinations

Objectives: Identify infrastructure solutions that:

- ✓ Ensure access to services and destinations along Main Street for all members of the community.
- ✓ Create safe, comfortable, efficient, and continuous pedestrian and bicycle travel and access along Main Street.
- ✓ Support existing transit service and provide flexibility to accommodate enhanced transit service in the future

Vital Community – Support the vitality of the community and its vision for Main Street

Objectives: Identify infrastructure solutions that:

- ✓ Enhance the built and natural environment and stimulate implementation of the Main Street Vision Plan to make it a vibrant place for those who live, work, shop and travel through the corridor
- ✓ Connect neighborhood residents to Main Street destinations and services; and transportation options to access the broader region



Feasibility – Develop a plan with a clear and achievable approach to implementation

Objectives: Identify infrastructure solutions that:

- ✓ Can be implemented starting within five years and maintained with foreseeable resources
- ✓ Can be implemented incrementally as funding is secured
- ✓ Ensure the cost-effective use of resources

Note: For a solution to advance, it must be feasible to implement along Main Street.

AGENDA ITEM SUMMARY

Meeting Date: 6/4/2019
Meeting Type: Regular Meeting
Staff Contact/Dept.: Andy Limbird
Staff Phone No: 541-726-3784
Estimated Time: 30 Minutes
Council Goals: Encourage Economic Development and Revitalization through Community Partnerships

**SPRINGFIELD
PLANNING COMMISSION**

ITEM TITLE: REQUEST FOR METRO PLAN DIAGRAM AMENDMENT AND ZONE CHANGE FOR 13.6 ACRES OF PROPERTY AT 3522 & 3530 GAME FARM ROAD, CASES 811-19-000065-TYP4 AND 811-19-000066-TYP3

ACTION REQUESTED: Consider the written record for the proceedings, as extended, and public testimony from the public hearing, deliberate toward an Order and Recommendation to City Council or provide staff direction on next steps on the proposal to amend the adopted *Metro Plan* diagram, *Gateway Refinement Plan* diagram, and Springfield Zoning Map.

ISSUE STATEMENT: At the conclusion of the Public Hearing on May 21, 2019 the Planning Commission held the written record open for additional public submittals for 7 days, concluding on May 28, 2019. The Commission also allowed an additional 7 days for the applicant to respond in writing prior to or at the June 4, 2019 meeting.

ATTACHMENTS:

1. Staff Response to Questions Posed During May 21, 2019 Public Hearing
2. Public Comments Received During Open Record Period Concluding May 28, 2019
3. Draft Meeting Minutes from May 21, 2019 Planning Commission Meeting (*for reference only*)

DISCUSSION: Submittals received during the open record period have been collected and are attached hereto for the Planning Commission's consideration. The information has also been forwarded to the Applicant and the Applicant's Counsel for consideration. The applicant's written rebuttal and response, if any, will be provided to the Planning Commission at or before the June 4, 2019 meeting. Other public comments and testimony received after May 28, 2019 will be forwarded to the City Council and are not part of the Planning Commission record.

Staff has prepared brief responses to questions posed during the May 21, 2019 hearing in Attachment 1 of this packet. Brief summaries of the verbal and written testimony submitted into the record up to May 21, 2019 were included in the packet on May 21. Depending upon the direction provided by the Planning Commission, staff will prepare additional findings to support the Planning Commission's Recommendation to City Council that can be reviewed and approved by the Commission at an upcoming meeting.

The minutes from the May 21, 2019 Planning Commission meeting are being provided in Attachment 3 as a reference to aid the Commission in recalling the testimony received at that meeting. The minutes are in draft form only and will come to the Commission for formal approval at a later meeting.

Q.1 What City tax dollars and resources will be used to assist residents with relocation when the park closes, or to provide welfare assistance and cover medical expenses for residents?

A. *The City has not set aside funds to directly assist residents with a mobile home park closure. The City recognizes that many of our residents in manufactured homes face a strong risk of displacement. In 2016, with assistance from Oregon Solutions the City convened local, state, and federal partners in developing a coordinated response which resulted in the creation of a Local Agency Toolkit and a Declaration of Cooperation that memorializes the commitments made by the participants and aligning available resources. If there is a closure of a park, the City would draw on the resources and technical assistance of the Manufactured Home Park Solutions Collaborative. Patrick Wingard, a member of the Governor's Regional Solutions Team, provided testimony that there may be financial resources available from the State of Oregon to help the City.*

Q.2 Why haven't the residents been given the right of first refusal to purchase the park? There are local agencies that can assist with park conversion from a landlord-owned facility to a resident-owned cooperative.

Oregon Revised Statutes (ORS) 90.842 through 90.850 requires owners of manufactured dwelling parks to provide notice of an owner's interest in selling the park before the owner places the park on the market. This provision applies if the owner offers the park for sale or otherwise attempts to transfer ownership; residents would have an opportunity to compete to purchase the park. The statute does not provide for a true "right of first refusal," but allows residents the opportunity to compete to purchase the park. The requirements in ORS 90.842 et seq. were adopted in 2014 and took effect on January 1, 2015, after the property was purchased by the current owner. Therefore, the statutory requirements were not in effect when the park was last offered for sale.

In this case, the property is proposed for redevelopment, not resale. The owner would still be required to comply with ORS 90.842 through 90.850 upon sale of the property, even if the plan designation and zoning of the park change from Low Density Residential to Mixed Use/Commercial Mixed Use.

Q.3 If the park is to close, consider adding the following conditions: 1) provide more than 365-day notice to the residents; 2) owner developer to provide fair market compensation to home owners; 3) park management to stop increasing rent each year thereby allowing residents a chance to save for future relocation costs; and 4) re-examine the traffic study that does not account for problems that would occur with the rezoning, and it does not account for existing and future traffic problems on Game Farm Road.

A. *The City Council may impose conditions of approval on the final decision as long as the conditions are the minimum necessary to ensure compliance with the criteria of approval and do not conflict with state or federal law, including constitutional requirements. As explained in more detail in the Commission Briefing Memorandum in the May 21, 2019 packet, the types of conditions described in (1) and (2) are not legally permissible: (1) the notice of park closure is unrelated to the criteria of approval, and already governed by state law, and (2) requiring the owner to pay a sum of money to residents would likely be an unconstitutional exaction in exchange for development approval. Condition (3) constitutes rent control, which is prohibited under ORS 91.225. Regarding Condition (4) and the traffic issues, queueing analysis for traffic lights is not a capacity or performance variable in determining whether a zone change has a significant effect on an intersection. Also, the perceived traffic issues on Game Farm Road is a pre-existing condition for a non-conforming driveway that does*

not meet current Code requirements for setback from an intersection of a collector and arterial street. More on the Traffic Study is found in Questions 7 and 8 below.

Q.4 Does Springfield have adequate numbers of housing units at price ranges that are commensurate with the financial capabilities of Patrician residents?

- A. *According to the City's Residential Land and Housing Needs Analysis conducted in 2011, there were available housing units in all demographic and income categories and sufficient buildable land to accommodate needed housing at all income levels during the planning period through 2030. Since that time, various housing projects have been completed including low-income, multi-family, and single-family developments. The numbers of housing units and the overall population increase has not met forecasts. The City's affordable housing strategy developed over the last 2 ½ years has identified a lack of available housing throughout the housing continuum. However, this analysis is not part of the City's acknowledged comprehensive plan and does not alter the City's acknowledged compliance with Goal 10 through the City's adopted comprehensive plans and land use regulations.*

Public testimony has provided self-reported information about the income levels and financial capabilities of Patrician residents; in addition to anecdotal information provided in written testimony and at the public hearing. Based on the self-reported testimony, at least 22 out of 81 households currently residing at the Patrician are low-, very-low, or extremely-low income. Affordable housing is defined as housing that is priced so that these households pay not more than 30 percent of gross total income on housing and utilities. There is only anecdotal evidence in the record that the cost of housing and utilities at the Patrician meets the 30 percent affordability level.

Q.5 Does Springfield have flexibility of housing location, type, and density for residents with the same financial capabilities as those Patrician residents?

- A. *There was anecdotal testimony that Patrician residents believe there is not suitable substitute housing currently available. Self-reported information about Patrician residents' financial capabilities state that within in the Patrician there are at least 3 extremely-low income households, 11 very-low income households, and 8 low-income households.*

The maps provided in the May 21, 2019 regular session packet show the City's most recent analysis of affordable housing options in the City as of September, 2016. As explained above, these maps were not adopted as part of the City's Goal 10 inventory and are not part of the acknowledged comprehensive plan. The 2011 Residential Land and Housing Needs Analysis determined that there was an adequate supply of housing and buildable land to meet the City's need for housing at all income levels through the end of the planning period in 2030. Chapter 5 of the Residential Land and Housing Needs Analysis determined the need for housing for all income levels through 2030, and Chapter 6 compared the needs to the existing supply of housing and buildable land, which found that there was enough land within the UGB to accommodate needed housing through 2030. Land supply does not automatically translate into housing units as the construction of housing units depends on property owners willing and able to develop the land. The City zones land to encourage a variety of housing locations, types, and densities, but again, the actual housing built depends on developers' preferences and capabilities. As explained in the Staff Report, the proposed redesignation and zone change retains enough surplus Low Density Residential (LDR) land within the City's UGB to accommodate needed housing for low-income households.

The Springfield Development Code does provide the opportunity for development in a variety of locations, types, and densities. Changes to the Springfield Development Code were adopted in 2013 to implement the Springfield 2030 Refinement Plan Residential Land Use and Housing Element to

ensure that the land use regulations were consistent with the City's obligation to provide needed housing for all income levels. Both the Residential Land and Housing Needs Analysis and the City's implementing land use regulations adopted in 2013 have been acknowledged to comply with the statewide planning goals, including Goal 10. Manufactured dwelling parks, mobile homes, and residential trailers are permitted uses within LDR-zoned property.

Q.6 Why does it make sense to remove existing affordable housing from the City's inventory and from the existing housing stock?

A. The applicant is not required to maintain the current manufactured dwelling park even if the existing zoning is retained. The applicant's planner testified that the property owner plans to redevelop the site. It is a matter of which zoning scenario the site redevelopment occurs under: Low Density Residential or Mixed Use Commercial. As pointed out in the prior staff report, and echoed by the applicant and several people providing testimony opposing the rezoning, whether the plan designation and zone change are approved is a matter of prioritizing policies that support maintaining the low-density residential designation or adopting a designation that allows for more of a mix of uses.

Q.7 At the May 7 meeting, questions were posed about the Traffic Study and the reliance on future transportation projects by the City or ODOT. Some roads don't meet the City's and state's standards at the present time, for traffic jams, and if the applications are approved and any type of development goes ahead, [and] then the [transportation] projects aren't completed what would be the impacts on traffic? Reasonable assumption would be that it would degrade the transportation system.

A. Contrary to drivers' and residents' perceptions of the Gateway area, the proposal would not degrade intersection standards below acceptable performance standards with the proposed zone change, as shown by the applicant's "Day of Opening" traffic analysis. The intersections in the Gateway area are currently operating at acceptable performance standards. Based on the applicant's traffic analysis, overall traffic volume would increase with site redevelopment under a mixed use commercial scenario, but it does not trigger state Transportation Planning Rule findings of significant affect.

Both the City and ODOT have reviewed and accepted the applicant's traffic study which relies on projects identified for completion within the 20 year planning horizon of the City's Transportation System Plan (TSP), in full conformance with the requirements of the Transportation Planning Rule (TPR). The applicant's traffic analysis addresses the requirements of the TPR. The overall assumptions also are consistent with provisions of the TPR. Staff advises that queueing analysis at signalized intersections is not a capacity or performance variable in determining whether a zone change has a significant effect on an intersection. Within the 20-year planning horizon of the City's adopted TSP, improvements called for in the Plan will ensure that intersections will continue to operate within acceptable performance standards. The City and ODOT have made an affirmative finding that the projects relied upon by the applicant in the TSP's planning horizon are likely to be built. In the event that the rezoning goes through and the site redevelops, the City and/or ODOT would be responsible for mitigation measures if the supporting transportation system is degraded or local intersections fall below acceptable performance standards.

Q.8 Under the [prior] amendment to the Gateway Refinement Plan (Ord. 6109) there is a direct call for transportation improvements to be open to travel by the motoring public at the time they are needed to support development. Is that still a requirement?

A. As stated above and discussed briefly at the May 21 meeting, the requirements for TPR analysis have changed since adoption of Ordinance 6109 in 2005. Ordinance 6109 was adopted after remand of an earlier City decision to approve plan amendments to facilitate development of the Riverbend Hospital

by the Oregon Court of Appeals in *Jaqua v. City of Springfield*, 193 Or App 573 (2004). The Oregon Court of Appeals held that the TPR required the City to ensure that the development would not cause or accelerate failure of a transportation facility within the planning period. The proposed Riverbend development was found to “significantly affect” a transportation facility during the planning period, and so mitigation measures were required to be constructed at the same time as development.

However, the current proposal is different than the context surrounding Ordinance 6109: the TPR was amended in 2005 directly as a result of the *Jaqua* decision. Currently, the TPR only requires governments to assess whether planned facilities (those expected to be constructed during the planning period) are adequate to meet needs at the end of the planning period. Thus, the applicant can rely upon projects that are identified for likely completion within the TSP planning horizon instead of ensuring the improvements are constructed prior to the site opening or commencing operations.

Q.9 Implementation of Goal 10: methods and devices of implementation and impacts to lower income households should include discussion of zoning, land use controls, etc. Is a consideration of impact to lower income households a precursor to any zoning changes?

- A. *Goal 10 does not specifically require the City to evaluate the impact of a plan amendment and zone change on lower income households, provided the redesignation and rezoning action analyzes the potential impact to the City’s overall residential land inventory (at the time of comprehensive plan amendment). The language cited above from Goal 10 is part of the Goal 10 Guidelines, which are intended to be instructive, directional, and positive suggestions for implementing Goal 10, but are not a binding part of the Statewide Planning Goals.*

Lower income households are assumed to comprise a proportion of the overall existing and future residential dwelling units in all three residential zoning districts (Low Density Residential - LDR, Medium Density Residential - MDR and High Density Residential - HDR). Based on the analysis done in 2011, the City’s overall residential land inventory can accommodate housing units suitable for all income levels and dwelling types - provided there are adequate amounts of LDR, MDR, and HDR land suitable for development or redevelopment maintained in the inventory. However, according to Table 5-29, “Estimate of needed dwelling units by income level, Springfield, 2010-2030” in the Springfield Housing Needs Analysis, manufactured dwellings in parks are the only ownership option available to households with an income at 50% or less of the Median Family Income and manufactured dwellings in parks are only allowed on property zoned LDR.

Q.10 [The Gateway Refinement Plan] calls for residential development on remaining vacant land and there should be a maintenance of approximate balances among LDR, MDR and HDR lands. Has the balance changed significantly between the LDR, MDR and HDR since 1992? Is there an analysis of the ratios and at what point is there a significant change in the ratios making things not necessarily in compliance with the [Refinement Plan]?

- A. *Prior to 2005, part of Goal 2 of the Residential Element of the Gateway Refinement Plan stated that it was a goal of the refinement plan to “[m]aintain approximately the existing balance among LDR-, MDR-, and HDR-designated lands is a goal of the Residential Element of the Gateway Refinement Plan.” However, Goal 2 was amended by Ordinance 6109 to now state that the refinement plan goal is to “[e]nsure availability of adequate supplies of land appropriate for low-, medium-, and high-density residential development, while allowing for an appropriate mix of commercial, employment, and residential uses.” Thus, the Gateway Refinement Plan no longer calls for maintaining the balance that existing in 1992, as long as an adequate supply of LDR, MDR, and HDR land is maintained.*

There have been several redesignation and rezoning actions undertaken since the Gateway Refinement Plan was adopted in 1992 affecting the availability of residentially-designated lands within the Refinement Plan area. Ordinance 5708 adopted in 1993 changed the designation of approximately 3 acres from MDR to Community Commercial. Ordinance 6060 adopted in 2003 changed the designation of 1.2 acres from MDR to Neighborhood Commercial. Of most significance is the adoption of Ordinance 6109 in 2005 that changed approximately 99 acres of MDR to Community Commercial and Mixed Use to allow for development of a hospital, associated medical, office retail and residential uses to preserve the potential for nodal development. Ordinance 6395 adopted on January 22, 2019 redesignated and rezoned 1 acre of land from LDR to MDR. Ordinance 6400 adopted on April 15, 2019, redesignated and rezoned approximately 3.4 acres of LDR just east of the subject property along Deadmond Ferry Road to 0.63 acres of MDR and 2.78 acres of HDR. Overall, the City still has available vacant or partially-developed LDR, MDR, and HDR designated land within the Refinement Plan area.

Q.11 Is a single family residential area considered an anomaly in an area of more intensive development? Or, should intensive new development need to be revised, mitigated or denied if it presented a conflict, and is that a reasonable conclusion to the statements that require mitigation, etc.?

A. This question raises a matter of policy and plan interpretation that is for the Planning Commission and City Council to determine. Any new development in the Gateway Refinement Plan area, especially sites within the Campus Industrial zoning district, would be evaluated for potential impacts at the time of land use approval. The nature of the Campus Industrial zoning district provides some mitigation of impacts compared with other industrial districts because it prohibits outdoor storage and displays, activities that generate noise or odors, and activities that require active transport of materials such as manufacturing, resource processing, and fabrication.

Q.12 Is a finding needed on preservation of existing trees?

A. According to the Gateway Refinement Plan and other City inventories, there are no significant historic or natural resources identified on the subject property. Preservation of existing trees would be at the discretion of the property owner based on future redevelopment plans. Removal of more than five trees greater than 5-inches in diameter over any 12-month period would require a Tree Felling Permit.

Q.13 We've heard testimony of residents from Patrician Park describing themselves as mostly low income including seniors and people with disabilities. Has there been a survey of the actual income and expenses for these residents to see if they are part of a low income demographic? Applicant has access to rental and lease documents so would they be able to get that information to the Commission to assist us in our decision making.

A. The applicant has advised that financial information obtained as part of the residents' lease application process is kept confidential. Any details on the income demographic would need to be volunteered by the residents themselves. Public testimony includes the results of a survey conducted by residents that provided some self-reported information about incomes as explained in the responses to Questions 4 and 5, above.

Q.14 Residential Land and Housing Policies: Patrician Park is in compliance with the densities. Foster housing choice and affordability – talks about some type of inventory and collection of baseline data. I'm not sure if we have that inventory given to us.

A. As discussed briefly at the meeting on May 21 and outlined in Question 4 above, the City has available baseline data in the 2011 study by ECONorthwest (Residential Land and Housing Needs Analysis) attached to Ordinance 6168 as Exhibit B.

Q.15 Have we heard from the four property owners in the northeast corner of the neighborhood? Can we get testimony from them or have we received testimony from them?

A. As discussed briefly at the meeting on May 21, notification was provided to the property owners along the northeast edge of the Patrician Mobile Home Park and no verbal or written responses were received. Another round of notification will be sent to the subject properties in August for the City Council public hearing meeting scheduled for September 3, 2019. The City cannot individually solicit testimony from specific members of the public for this type of quasi-judicial land use decision.

To: City of Springfield Planning Commission
City of Springfield City Council
Department of Public Works

From: Patrician Residents Jo Manning, Joelle Sherman, Kris O'Driscoll, Susan Stoltenborg, Rita Baird

Date: May 28, 2019

Re: ADDITIONAL Testimony
Patrician Mobile Home Park Planning Case 811-19-000065-TYP4

As residents of the Patrician, we would like to provide ADDITIONAL testimony in response to the application submitted to the City by Urban Transitions LLC seeking to amend the Metro Plan and the Gateway Refinement Plan from Low Density Residential (LDR) to Mixed Use Commercial (MUC). The approval of the proposed change would undermine many of the goals Springfield is trying to achieve to meet the housing needs of ALL of its citizens. Additionally, there are questions that demand answers before a final decision is made.

GOAL 10 – Cities must have plans that encourage the availability of adequate numbers of needed housing units at price ranges and rent levels which are commensurate with the financial capabilities of Oregon households and allow for flexibility of housing location, type and density.

We ask that the city provide findings that demonstrate minimal impact on low income households before a decision can be made. In addition, we would urge the PC to require the City to produce an inventory report to show there are feasible alternative options at different income levels for Patrician residents.

The 2011 Springfield Residential Land and Housing Needs Analysis (RLANA), states that Springfield will need to provide 3,552 dwelling units of single-family types. According to the Oregon Housing Community Services, there are significant deficits of affordable housing for people at lower income levels. Is there an updated version of these statistics and how would dissolving an existing park with 130 residents impact these statistics?

For households below 50% AMI (Average Monthly Income), there is a shortage of 17,595 units in Lane County. Eliminating the Patrician MHP without replacement will increase this number. According to Springfield's Housing Needs Analysis or households with AMI's between 30-50%, manufactured homes in parks is the ONLY affordable housing type for homeownership.

Residents of the Patrician will not be able to find a living situation comparable with what we currently have. Over 55+ MHP homes listed for sale in Springfield/Eugene range in price from 54,900 for a 1979, 2 bed, 2 bath, to \$159,000 for a 1996, 3 bed, 2 bath and \$135,900 for a 2018, 3 bed, 2 bath home. The park rents range from \$525 to \$658 per month without utilities.

We cannot afford to purchase land and buy a new home because most of us invested our life savings into our forever homes which are now worthless. This forces us to start over - in our retirement. Are we supposed to go back into the workforce in our 60s, 70s, 80s and 90s and work minimum wage jobs to try and maintain a new residence that we didn't want to move to in the first place? The housing that Mr. Boyles may build will not be affordable for most of us because of our fixed incomes. There are other

mobile home parks, but with waiting lists of up to two years to get into if we could even afford to buy a home in. Many have already invested in a home with whatever savings we had.

METRO PLAN - Residential Land Use and Housing Element

Provide viable residential communities so all residents can choose sound, affordable housing that meets individual needs. Nothing in the Metro Plan suggests that this be accomplished by eliminating existing affordable housing in established neighborhoods especially those with access to services.

Policy A.20 Encourage home ownership of all housing types, particularly for low-income households. Changing the land use designation to mixed use/commercial is in conflict with Policy A.20, which states As demonstrated in the RLANA, the only housing type that is possible for home ownership for households below 50% of AMI is mobile homes. Eliminating these homes will reduce homeownership opportunities and discourage others at low income levels from purchasing mobile homes in Springfield in the future.

Affordable, Special Need, and Fair Housing This section of the Metro Plan acknowledges the housing problems experienced by special needs populations, which includes elderly and disabled. Many of us are at a monetary disadvantage in addition to being elderly, disabled and dying – literally. We live from social security check to social security check and many would not eat if not for food stamps and other public assistance programs. We have already heard stories of some who will be forced into homelessness and they are experiencing stress-related illness and hopelessness.

THE SPRINGFIELD 2030 REFINEMENT PLAN– Residential Land Use and Housing Element

HG-2 Foster Housing Choice and Affordability - to provide a range of housing choices for people of all income and household types. Availability of affordable housing choices for different household types is a key component of a livable community. The owner’s intent to develop this park into a conference center/hospitality/tourist attraction is opposed to Policy H-10 and since development would eliminate affordable housing options, his intent is also inconsistent with HG-2.

Policy H-10 encourages the development of affordable housing in locations with transit, employment, shopping, health care, recreational services. Where in the application does the applicant mention an interest in creating housing, let alone affordable housing? Is his only plan in making money without consideration for the well-being of the current residents and their needs?

HG-3 To minimize displacement of low-income residents as neighborhoods develop. Your approval of rezoning will cause ALL of us to abandon our homes and leave us with 0 value for our investments. There is no mention of affordable housing for lower income levels in the application for rezoning. To get into another park, we would need 3x the space rent to qualify and monthly rent is supposed to be one-third of income. Who are we kidding? Many will not qualify.

Policy H-10.3 The City must continue to develop strategies to repair, preserve and improve the existing supply of affordable housing and enhance existing affordable neighborhoods. Bulldozing 13 acres and 75+ affordable houses eliminates an entire existing neighborhood that meets this criteria –This is not a trailer park where homes are dilapidated and beyond repair. We take care of our investments. How does this meet your strategies?

Policy H-2 To protect and enhance existing single-family neighborhoods

We are currently near shopping, a hospital, a memory center and there will soon be an assisted living center built within a block of our 55+ park. Why would you want to approve of a convention center or trendy housing/shopping redevelopment in this area? It makes no sense. We have everything we need including beautiful old trees, a large variety of local birds, gardens and accessible transportation to local shopping. Springfield is in a network of age-friendly communities and has no draw for tourists unless they want to watch elders with oxygen tubes make their way in ambulances, wheelchairs and walkers to the hospital. Why not let us grow old in a place where we feel safe or extend a helping hand above and beyond the monies currently offered?

GATEWAY REFINEMENT PLAN GOAL 5 1.0 of the Policies and Implementation Actions is about maintaining and enhancing the livability of existing area neighborhoods. A change in land use/zoning that eliminates our neighborhood is contradictory with this goal. There is no replacement for our neighborhood.

HOUSING AND URBAN DEVELOPMENT FUNDS Springfield uses Federal Community Development Block Grant (CDBG) funds and HOME Investment Partnership Program funds from HUD to assist with affordable housing development, housing-related services, neighborhood revitalization, public improvements and downtown redevelopment. The primary purpose IS TO BENEFIT LOW AND MODERATE INCOME PERSONS and to meet an URGENT need posing a serious and immediate threat to the health or welfare of the community where other resources are not available.

WE NEED ANSWERS We ask the city of Springfield to:

1. Provide findings to demonstrate minimal impact on low income households before a decision to rezone is considered.
2. Produce an inventory to show there are feasible alternative options at different income levels for Patrician residents.
3. Regarding how many homes are built on developed land through redevelopment, we want to know what that really means. How many had existing neighborhoods that were demolished and inhabitants displaced?
4. Include conditions of approval to compensate residents for their homes above and beyond the current amount(s). We urge the Planning Commission/City Council to require the City to adopt findings that prove the required payment is “roughly proportional to the impact of the plan amendment and zone change” as part of this application and evaluation process.

SURVEY TO DETERMINE NUMBER OF LOW-INCOME RESIDENTS At the public hearing on May 21, questions were raised about how the City would assist low-income residents at the Patrician if the park were to close while those residents were still on a long waiting list for low income housing. Commissioners themselves wanted to know more about the low-income issue, and how many Patrician residents might be in that category.

Potential low-income status of individuals within our park is a private matter. Whatever financial information exists with property management becomes inaccurate at the first household death and/or space rent increase. Therefore, we undertook a last-minute anonymous income survey of all residents of the Patrician over the Memorial Day weekend.

See Appendix A for the survey to which residents responded.

Appendix B shows the results. Of 79 manufactured home households, we had 28 responses. The Appendix B chart draws income level data from Lane County, and the responses of our residents is color coded. The striking result is that 22 of the 28 responses (79%) fall into the Low Income, Very Low Income, or Extremely Low-Income categories. Of the seven respondents with higher incomes, one of the 1-person households volunteered additional information [that he/she wished they could help (with what we are doing), and that he/she is financially assisting three other households in the park]. This is certainly an unexpected demonstration of "community."

An additional financial stress component shown in Appendix B is that most of the people who are revealing their income levels are clearly relying on Social Security alone. The first death that occurs in a 2-person household is statistically likely to be the husband. This financial dynamic then catapults the surviving wife from a Low-Income category into a Very Low Income or Extremely Low-Income category.

The Patrician offers affordable housing to many, including those who are frugal but not necessarily needy. What our survey demonstrates is that while the Patrician represents affordable housing, it does so primarily for those who ARE needy, are at the very lowest income levels, and are the most threatened by the slightest change in their circumstances.

We urge you, as public servants, to deny the rezoning of the Patrician MHP because rezoning is in direct conflict with the plans already in place by the City of Springfield as we have detailed above.

Thank you for your consideration.

Attachments:

Appendix A – Anonymous Income Survey form

Appendix B – Results of Anonymous Income Survey

Do YOU Want an Easy Way to HELP?

Dear Fellow Residents of Patrician Mobile Home Park:

At the last Planning Commission Public Hearing, several people offered opposition testimony about the impact on **low income households** (as distinct from those seeking "affordable housing"). The question was asked, "What assistance would the City provide to low income residents if the park closed while those residents were still on waiting lists for low income housing?" More than one commissioner was concerned about that issue. The term "low income" varies in meaning depending on the service being sought. Income is confidential information, and no one knows what anyone else's income is, including the Patrician management. Specifically, no one knows how many of our residents might currently fall into the "low income" category due to household changes. This information could be very important as it might motivate the Planning Commission to consider this before making their decision.

Would you be willing to participate in an **anonymous survey** to help us all save our homes? If yes, check the correct box below on the survey. On a separate piece of paper, please write your space number. Please return both sheets to the O'Driscolls, Space 18. There will be a bucket with a slot in the lid, labeled "Anonymous Survey", near our back door hand rail. Please put both sheets in the labeled container. This will allow us to know who participated, but maintain everyone's privacy. If you can't get to Space 18 with the completed survey, call Jo Manning or Joelle Sherman for assistance. Thank you!

ANONYMOUS INCOME SURVEY:

My total household monthly income is:

- Between \$1,000 and \$1,200, for _____ people
- Between \$1,201 and \$1,400, for _____ people
- Between \$1,401 and \$1,600, for _____ people
- Between \$1,601 and \$1,800, for _____ people
- Between \$1,801 and \$2,000, for _____ people
- Between \$2,001 and \$2,200, for _____ people
- Between \$2,201 and \$2,400, for _____ people
- Between \$2,401 and \$2,600, for _____ people
- Between \$2,601 and \$2,800, for _____ people
- Between \$2,801 and \$3,000, for _____ people
- Over \$3,000, for _____ people

Please return the survey by Monday,
as we have a Tuesday deadline to submit information to the City

APPENDIX B

The Patrician Mobile Home Park

Anonymous Income Survey of Residents

5/25/2019 thru 5/27/2019

Income level data taken from <https://lanecounty.hosted.civiclive.com/common/pages/DisplayFile.aspx?itemId=15344480>

Total Responses:		28		35.44% of 79 total manufactured home households								
# of 1-person households:		18										
# of 2-person households:		9										
# of 3-person households:		1										
1-Person Households												
Annual Median Income (AMI), Lane County, 2018-2019:				\$44,937.50								
Low Income = 80% of AMI, or				\$35,950.00								
Very Low Income = 50% of AMI, or				\$22,450.00								
Extremely Low Income = 30% of AMI, or				\$13,500.00								
800-1000	1001-1200	1201-1400	1401-1600	1601-1800	1801-2000	2001-2200	2201-2400	2401-2600	2601-2800	2801-3000	>3000	
\$12,000.00	\$14,400.00	\$16,800.00	\$19,200.00	\$21,600.00	\$24,000.00	\$26,400.00	\$28,800.00	\$31,200.00	\$33,600.00	\$36,000.00		
2	2	5	0	2	4	0	0	0	0	1	2	
2-Person Households												
Annual Median Income (AMI), Lane County, 2018-2019:				\$51,312.50								
Low Income = 80% of AMI, or				\$41,050.00								
Very Low Income = 50% of AMI, or				\$25,650.00								
Extremely Low Income = 30% of AMI, or				\$16,460.00								
800-1000	1001-1200	1201-1400	1401-1600	1601-1800	1801-2000	2001-2200	2201-2400	2401-2600	2601-2800	2801-3000	>3000	
\$12,000.00	\$14,400.00	\$16,800.00	\$19,200.00	\$21,600.00	\$24,000.00	\$26,400.00	\$28,800.00	\$31,200.00	\$33,600.00	\$36,000.00		
	1	0	0	2	0	2	0	0	1	1	2	
3-Person Households												
Annual Median Income (AMI), Lane County, 2018-2019:				\$57,750.00								
Low Income = 80% of AMI, or				\$46,200.00								
Very Low Income = 50% of AMI, or				\$28,850.00								
Extremely Low Income = 30% of AMI, or				\$20,780.00								
800-1000	1000-1200	1201-1400	1401-1600	1601-1800	1801-2000	2001-2200	2201-2400	2401-2600	2601-2800	2801-3000	>3000	
\$12,000.00	\$14,400.00	\$16,800.00	\$19,200.00	\$21,600.00	\$24,000.00	\$26,400.00	\$28,800.00	\$31,200.00	\$33,600.00	\$36,000.00		
	0	0	0	0	0	0	0	0	0	0	1	

May 21st 2019

Re. Patrician MHP Rezoning

The thought of loosing my home is so upsetting. I lived here since July 28, 2014. My little home is a comfort. I feel safe here. I have my oxy-en set up, and am able to live alone with minimal help. (960 sq ft.)

I have friends that gather every wed. we support each other & socialize, do crafts, & needle work.

My little yard gives me fresh air and exercise, I grow a few veg., Blue berries, strawberries, & flowers, great therapy, & positive medicine I'd say. I not on a lot of prescription drugs, I have a rescue inhaler for an emergency, I can wear my oxy in the yard.

I'm sad & upset at loosing all this. My home is in good shape. Lamant flooring through out, freshly painted through out, new tub surround, laundry area updated, a new 8' x 20' ft. deck, new steps & hand rails front & back, garden shed repaired & painted, always working on the land scaping. and it is a beautiful home.

Sincerely
Peggy Lady

P.S. a letter from my Doctor

Dear Planning Commissioners,

My name is Kris McAlister, and I reside at 1909 12th St, Springfield, Oregon.

I am writing you to express my concern on the rezoning of 3522 & 3530 Game Farm Road, Springfield.

Whereas I recognize the rights of the property owner; the permitted and stated use for the property; and the limited options for redress of the current residents;

I would like to ask you all to please consider the relative duplication of the community as it currently is populated, in a time, place, or manner that is conducive to maintaining affordable housing and sustaining the hometown feel that our city prides itself on.

The irony is not lost to me, that we are speaking about a landowner affecting the lives of their tenants, for a financial boon with their own land, on a site called the Patrician.

The average recipient on fixed income ranges from \$791-1,200 a month, from the persons I have worked with, in the area in question. The cost of utilities and local fees for infrastructure are part of the affordability and legal residency considerations of our housing regulations, which are not often considered by market analysts when talking about available housing. I reference Maps 2 & 5, when pointing out that these residents reside in a low density area, and is one of the few parks to not be fully in the lowest value areas of our town.

To pick up and relocate this population, expecting reasonable adjustment and ease, is not founded in any experience I have seen locally. Beyond accounting for the average age of the residents, the propensity for additional accommodation needed, and the cost to relocate and move, it could be more burdensome and create a public health issue, should the deemed accessible and affordable options be under-realized. Even with advanced notice, participating in strategies such as joining the coordinated waiting lists; the vacancy rate in our county is a middle and upper class market, and low income options are waiting for deaths or economic malady to create openings in our current inventory.

As the city's role does not require action, other than to insure the proper capacity, I am at a loss for the commission to say no, but would hope that the inventory would be maintained by either carving out the appropriate number of sites to relocate those who are unable to move to an equivalent setup as they are currently residing, or attaching a recommendation that the city add protective language that would preserve residency capacity of its elders and disabled, when addressing rezoning.

The recent efforts on the state level do very little to help people in the lower income sphere, and affordability is not fixed to the real incomes of the community, but rather the ratio of rent to desired tenants. It is because of this, that I have little faith in the housing need forecasts that make up parts of our plan. Hundreds of Springfielders are not accounted for, in their financial and housing realities, on our planning scope, due to the systems not being crafted with their outcomes and needs in mind. This unfortunate situation, is just the tip of an impending issue that will take more than a hearing here, or rent control there, to fix.

I fear many of the sick and elderly who are in inadequate and subpar housing at the moment, in our city limits and UGB, will not live to see the improved consideration of affordable housing and life quality professed, in the community efforts of today. These folks at least have something they can try to hold on to.

I would ask the owner, Mr. Boyles, to be open to non-conforming use, and working with the tenants for a long term solution that could fit with his plan, if the rezone is approved.

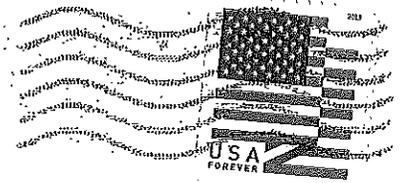
Please accept this to the record, and thank you for your service.

Kris McAlister

Jay McClain
2830 Harris St.
Eugene, OR 97405

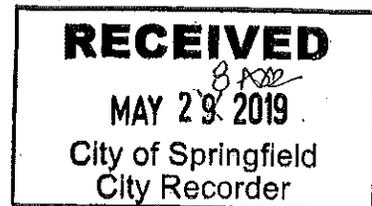
EUGENE OR 974

24 MAY 2019 PM #1



Planning Commission & City Council
225 Fifth St.
Springfield, OR 97477

97477-987199



Received @ approx. 3:40pm
AR

May 23, 2019

Dear Planning Commission & City Council —
Please show some love. Please do what you can
legally to protect the 130 seniors at Patrician Mobile
Home Park. They need to keep their home locations in
the Park. Retirees should not have to face
becoming homeless especially when it is no-fault
of their own.

Sincerely,

Jay McClain
541-912-9865

To: City of Springfield Planning Commission
Attn: Michael Koivula, Chair, mkoivula@springfield-or.gov

From: Kristin O'Driscoll, resident of The Patrician MHP

Date: May 24, 2019

Re: Patrician Mobile Home Park Planning Case 811-19-000065-TYP4

As a resident of the Patrician, I am submitting this written testimony in response to the application submitted to the City by Urban Transitions LLC seeking to amend the Metro Plan and the Gateway Refinement Plan for our park from Low Density Residential (LDR) to Mixed Use Commercial (MUC). This is a specific response to the final rebuttal by the applicant's consultant, Teresa Bishow, about the true choices that face the City of Springfield.

Ms. Bishow addressed the Planning Commission after the public testimony was complete. In her rebuttal, she encouraged the commissioners to view their decision through the lens of the long-term vision for this area of the City. The two "visions" that she laid out for the commissioners were single family residential or some form of commercial. The continued existence of Patrician MHP was not part of that future vision, and she went so far as to say that the park *would* be developed irrespective of the City's decision, therefore the true question was which of the two types of development the City preferred.

Her statement implied that all of the preceding public testimony was irrelevant. It also seemed deceptive because the City's final decision has the potential of two vastly different market values for our park, which will surely impact Mr. Boyles' future decisions. Mr. Boyles needs this rezoning to recoup the profits that he expected from his deal with the City more than a decade ago. Our residents need the protections that appear to exist in the City's Metro Plan and its Gateway Refinement Plan.

Ms. Bishow's assurance that the park will still be developed even if there is no zoning change appears questionable. There is no reason to assume that Mr. Boyles would develop this park if the rezoning application were to be denied. He has a cash cow at present, with monthly space rents providing reliable income. Closing the park to develop it into single family homes would come with its own set of financial challenges, and there is no guarantee that he would choose to develop under those more restrictive financial circumstances.

But we definitely know from his mid-March letter that Mr. Boyles will develop this park if the zoning application is approved. The result of rezoning would be an immediate increase in our park's market value, allowing him to quickly secure bank financing for a sizeable commercial project.

We ask you to remember that Mr. Boyles' land use attorney was sitting by Ms. Bishow's side throughout this hearing, and her final rebuttal was likely coached. We also ask you to reject the rezoning application based on the merit of opposition testimony and the inconsistencies within the application itself (identified in detail in other written testimony).

Thank you for your consideration.

Untitled

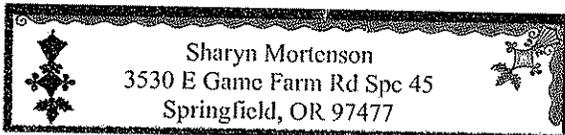
Re: Patrician Mobile Home Park in Springfield

My name is Sharyn Mortenson and my husband and I have lived in the Patrician Mobile Home Park for almost 7 1/2 years. We have enjoyed this neighborhood and the benefit of living in an area that has most everything we need, (such as doctors office, urgent care, hospital, labs for necessary bloodwork, physical therapy, pharmacy, pet care, grocery stores, shopping mall, gyms, etc.). We are able to have our pets which means so much to us and provides us with companionship and helps with stress. Those that enjoy walking can get out and stroll around the park at a comfortable pace using canes or walkers, if needed, and not be concerned with having to cross busy intersections, or children riding bicycles etc. During the summer we are able to swim at the pool that is at the club house. The club house is supplied with a kitchen area, a sitting area with t.v. connected to cable and internet is available. There is a small library available and several pool tables for the resident to enjoy. Once a month there is a potluck for the residents to enjoy some social time with other residents. All these things are important to our well being as we age and my fear is that all this would be hard to replace as we have a strong community and formed close friendships that would be lost should the court be rezoned and become a commercial area.

I would like to share my personal concerns also should we lose our home here. My 92 1/2 year old mother lives next door to me. She has been able to live in her own home because I have been able to help her with things she can no longer do without help because of her age. For her to find a new place to live and move would be an incredible hardship and I am not sure that she could survive this. My brother has been staying with her at night because she has fallen several times and feels safe having someone there in case she gets up at night and falls. My brother also suffers from Dupuytren's Contracture is losing the use of his hands. I am a part-time caregiver for him at this time and in the next 3 - 4 years will probably totally lose the use of his hands and need me to be a full time caregiver. My husband is a diabetic and has been diagnosed with Dementia so I also have become his caregiver. Should this property be rezoned and we have to move this not only would create a problem to continue with independent living that we have in our homes now because we may not find other homes close together but the financial burden finding affordable housing becomes a big issue. If we could not find affordable housing the most likely 3 of my family members would end up living in Assisted Living or a nursing home and probably having to go on state assistance because of the cost of these facilities. I am pretty sure others living in The Patrician also are concerned about losing their independence and needing a state assisted living area also.

Thank you for allowing me to share my concerns and please be mindful of these situations when deciding whether or not to allow the rezoning.

Sincerely,



May 26, 2019

To: Andy Limbird, Springfield City Planner

RE: The Rezoning/redevelopment of The Patrician Mobile Home Park

My daughter and I moved into the Patrician October 2018 after signing a 20 year mortgage. About 6 months later the letter arrived regarding rezoning and ultimately redeveloping. This is one of those situations where you think "how can this happen?" but *it is happening* and it is happening across the nation. I strongly recommend Googling "Ted Talks Mobile Homes" presented by sociologist, Esther Sullivan for a 15 minute "101" regarding how mobile home parks are being bought and redeveloped at the expense of not only the residents, but the impact on the surrounding community and the environment. We are in an **affordable home crisis**. As Esther Sullivan and many Springfield citizens pointed out, "Mobile Home" is a misnomer. It is a manufactured home that is transported, installed on land, and like any other home, settles; it is not an RV or camper.

Mobile homes have historically provided affordable housing from families with children to adult community parks. "Owning" your own home brings stability.

Bringing it back to Springfield, how is it possible, that while the need for affordable housing is addressed in the "Springfield 2030" plan, the rezoning and inevitable redevelopment of the The Patrician, will uproot 130 seniors that will live, where? Is that how affordable housing is addressed? Recognizing the need for affordable housing as part of Springfield 2030 plan, while simultaneously taking it away? That doesn't make sense to me. Can you imagine the impact on the mental and physical health of the residents, aged up to 90 years old, veterans and folks of varying disabilities, losing their social supports and how this will impact social services in our community? Can you imagine how it would feel to turn your back, and just walk away, abandoning your home?

To the City of Springfield, if this rezoning/redevelopment is allowed to move forward, uprooting 130 seniors, shame on you for turning your back on this vulnerable population.

Susan A. Stoltenborg
3530 East Game Farm Rd Space 2
Springfield, OR 97477

MINUTES OF THE REGULAR SESSION MEETING OF
THE SPRINGFIELD PLANNING COMMISSION HELD
Tuesday, May 21, 2019

The City of Springfield Planning Commission met in a regular session in the City Council Chambers, 225 Fifth Street, Springfield, Oregon, on Tuesday, May 21, 2019 at 7:00 p.m., with Commissioner Koivula presiding.

ATTENDANCE

Present were Chair Koivula, Vice Chair Sherwood, Commissioners Vohs, Landen, Bergen, Gill and McGinley. Also present were, Comprehensive Planning Manager Sandy Belson, Assistant City Attorney Kristina Kraaz and Management Specialist Brenda Jones and members of the staff.

ABSENT

None

PLEDGE OF ALLEGIANCE

The Pledge of Allegiance was led by Vice Chair Sherwood

ADJUSTMENTS TO THE REGULAR SESSION AGENDA

- None

APPROVAL OF MINUTES

- Commissioner Bergen noticed misspelling of her last name, Commissioner Koivula noticed misspelling of Commissioner Landen's name.
- Commissioner Bergen motioned to approve the minutes.
- Commission Landen seconded.
- All in favor.

BUSINESS FROM THE AUDIENCE

- None

QUASI-JUDICIAL PUBLIC HEARING

- CONTINUED FROM MAY 7, 2019
PH – 811-19-000065-TYP4 Metro Plan Amendment & 811-19-000066-TYP3 Zone Change
3522 Game Farm Rd. 17-03-15-40 TL03100 Urban Transition LLC
Staff: Andy Limbird

STAFF EXPLANATION OF QUASI-JUDICIAL HEARING PROCESS (ORS. 197.763)

- Assistant City Attorney Kristina Kraaz read the Explanation of Quasi-Judicial Hearing.

The hearing tonight is a continuation of a prior Public hearing and it is a quasi-judicial hearing. The applicant has the burden of proof to show all the applicable approval criteria have been met. The criteria are posted on the wall behind the

Planning Commission, outlined in the staff report and located in the Springfield Development Code in section 5.3-135 for the Metro Plan Amendment, Section 5.6-115A for a refinement plan amendment, and section 5.22-115 for a Zoning Map amendment.

PLEASE PAY ATTENTION TO THE FOLLOWING INFORMATION ABOUT YOUR RIGHTS IN THIS PUBLIC HEARING PROCESS:

- Testimony, arguments and evidence must be directed toward the criteria of approval that I just listed, or other criteria that you believe apply to the decision. If you believe that other criteria apply to the decision, please specify what the criteria are.
- If you raise an issue, the issue must be accompanied by statements or evidence that is sufficient to give the Planning Commission and the parties an opportunity to respond to the issue. If you fail to provide sufficient statements or evidence to the Planning Commission and to the City Council in the next phase of this process, you may be prohibited from raising those issues on appeal before the Oregon Land Use Board of Appeals.
- If you are the applicant, you must raise concerns regarding any proposed conditions of approval to preserve your right to appeal and/or to seek damages in Circuit Court. If you fail to raise constitutional or other issues relating to proposed conditions of approval with sufficient specificity to allow the Planning Commission and Council to respond to the issues, you will be precluded from seeking damages in Circuit Court.

For members of the public, if you would like to testify this evening, please pay attention to the following procedures. This hearing is being recorded on tape.

- First, please fill out a request to speak card located on the side table and give that card to the Planning Assistant.
- When you are called up to speak, please testify from the podium to my left (not from the citizen's seats).
- Begin your testimony by stating your name and address for the record.
- Finally, if you want a copy of the City Council's final decision, please provide your name and address to the Planning Commission Assistant.

The Planning Commission record will be forwarded to the City Council. The Planning Commission record includes the application and any supporting information, the staff report, documentary evidence and written testimony provided to Senior Planner Andy Limbird from the beginning of this procedure through tonight's hearing, and all testimony and documentary evidence submitted to the Planning Commission during tonight's hearing, as well as the testimony from the prior part of this Hearing on May 7th.

If you want an item entered into the record, please present that item to the Planning Commission assistant, orally or in writing. If there is any question in your mind whether any material is in the record, make a point of asking that it be accepted into the record.

This is a continuation of a prior Public Hearing, you may request that the record be held open or the Public Hearing be continued but those requests are discretionary with the Planning Commission.

Last, Oregon land use law requires that the Planning Commission act as an impartial decision-maker. Planning Commissioners must disclose any ex parte contacts or conflicts of interest related to this matter, and must allow any person to challenge the Planning Commission for bias.

- A conflict of interest is a situation in which the decision maker, his or her family, or their business would benefit or suffer by the decision-maker's choice.
- An ex parte contact is a communication to the decision maker that includes substantive issues regarding the application and occurs outside the public venue.
- Bias is an actual personal interest in the outcome of the decision, or a prejudgment by the decision-maker as to the outcome without regard to evidence and argument submitted to the decision-maker.

Chair Koivula, you may now continue the public hearing and declare ex parte contacts and conflicts of interest.

CHAIR OPENING OF THE PUBLIC HEARING PROCESS

- Chair Koivula Opened the Public Hearing

COMMISSION MEMBERS DECLARATION OF POTENTIAL CONFLICTS OF INTEREST, DISCLOSURE OF EX-PARTE CONTACT OR BIAS

- Commissioner Bergen, as previously stated, said she is a realtor but does not have any conflict of interest with this case.
- Commissioner Koivula asked if there is anyone who wishes to challenge the Planning Commission for bias. Heard none.

TESTIMONY FROM THE APPLICANT

Richard Boyles, Urban Transitions, LLC; 840 Beltline Road, Suite 202; Springfield, Oregon 97477.
No testimony.

QUESTIONS FROM THE COMMISSION

- None

TESTIMONY FROM THOSE IN SUPPORT

- None

TESTIMONY OF THOSE NEUTRAL

- None

TESTIMONY OF THOSE OPPOSED

- Kristin O’Driscoll, 3530 E. Game Farm Rd. Space 18, Springfield; Stated she has had two weeks to consider what the owner’s consultant had to say about the rezoning application as well as what members of the public had to say. There’s one thing that hasn’t been clearly pointed out yet. The owner’s consultant says that the loss of the low density residential park can be made up for by the presence of other low density acreage elsewhere within the City limits. That may be true and it may look good on paper, and it may look like a reasonable trade but it misses the entire point. Low density residential zoning is not the same as existing affordable housing. If the owner’s rezoning application is approved, yes the city will lose 13.6 acres of low density residential acreage at this location, but more importantly the city will lose 13.6 acres of existing affordable housing in a long standing community that can never be replaced. Once it’s gone, by definition, it’s gone. Two weeks ago a housing expert who’s spoken before Congress on housing issues spoke here at the Planning Commission Public Hearing about the long waiting lists that exist for all low income housing in the State. Eliminating our existing affordable housing at the Patrician Mobile Home Park will guarantee displacement of 130+ current residents when the park is closed. We know the park will be closed - we just don’t know when - if the rezoning application is approved. It will also guarantee additional stress on City resources designed to help the low income community. What City tax dollars will be used to assist residents who are stuck on waiting lists when the park closes? Or how will you provide welfare assistance to residents who can no longer make ends meet in the more expensive “affordable” housing outside of our park? Beyond

that, how will you assist with medical expenses? Stress is one of the things that causes medical problems which are developing because of very stressed out residents. There are downstream impacts that will directly affect city purse strings. Implore you to look beyond the immediate request for rezoning and see the long term negative effects on both the residents and the City and if the City determines that the additional tax revenue can't be resisted we really hope you can intercede and help negotiate a fair settlement for our residents.

- Joe Bando, 2586 Grand Vista Dr., Springfield; He stated that his residence is fairly close to the Gateway area. When he drives to the Post Office, it's not an easy drive because the traffic in Gateway is at an all-time full rate now. He also owns a mobile home park that houses 98 mobile homes, 186 people live there. The park is completely full and there are people on a waiting list to get in to the park. If these people lose their home, there is no room at the inn anyplace. There's no affordable land to build a mobile home park in spite that they said that there is affordable land someplace. It would be a crying shame to put these people on the street. He is offended by what is happening. He watched the forefathers on this Planning Commission a decade ago use that as a buffer zone for low density residential, and we are here a decade later with the same thing on the agenda. He hopes that it is ruled in favor of these residents and keep the mobile home park open.
- Susan Stoltenborg, 3530 E. Game Farm Rd. Space 2, Springfield; She stated she supports everything the other two speakers have said. She and her daughter moved into the park in October of 2018 after signing a 20 year mortgage. About 6 months later the letter arrived about the rezoning. This is a situation that is happening across the nation. She encouraged everyone to Google Ted Talk Mobile Homes, Esther Sullivan, sociologist gives a 15 minute 101 about how corporations across the nation are buying up mobile homes thereby eliminating affordable housing. Affordable housing is at the crux of this, it is crisis. Mobile home is a misnomer. It is a manufactured home that is transported and installed and like any other home, settles. It is not an RV or camper. Mobile homes have historically provided affordable housing for families with children to adult communities. Owning your own home brings stability. Bringing it back to Springfield; how is it possible that while affordable housing is addressed in the Springfield 2030 Plan, the rezoning and inevitable redevelopment of the Patrician will uproot 130 seniors that will go where? Is that how affordable housing is addressed, by taking it away? She can't imagine where everyone will go. The impact, as was mentioned, on their mental and physical health, losing social supports and impact on social services. Can you imagine how it will feel to turn your back and walk away, abandoning your home? City of Springfield, if this rezoning and redevelopment is allowed to move forward, shame on you for turning your back on this vulnerable population.
- Rev. Ron Meyers, 3530 E. Game Farm Rd. Space 23, Springfield. Submitted written document. Stated he submitted many emails to people all over the state of Oregon and it was put in the staff report, he requested that letter to be removed. He offered historical levity to this application. We all know God created the Garden of Eden. Scripture says it was a walled in community with a gate at the east end. Nobody knows how long these ancient ancestors lived there, or lived in bliss. What we know is the snake arrived to convince the residents they would be fine and would be better off when a hotel/conference center came in to the park. The ease with which they lived was relocated and they were relocated with much difficulty. They were grandparents, as many of us are and they were great grandparents. The devil is always in the details. The posted City of Springfield Planning video on YouTube from your site indicates the Planning Commission and the City Council have proposed to streamline and make the Planning Commission rules more understandable. He found it interesting that in many video presentations the City of Springfield indicates they are all about maintaining low income housing, affordable housing and low density residential. This application smacks of collusion. He has done a lot of research, and finds there is ancient history concerning the intention of the City to somehow add this lovely place into their crown jewel. He is asking, don't take away our first right of refusal that was put in the law to protect people from rabid developers and that is what you are doing if you approve this.

- Jo Manning, 3530 E Game Farm Rd. Space 29, Springfield; She stated that she and her husband chose Patrician because they needed a yard for dogs, even though it was in a 55+ park. There's more of the story about how they were honestly not aware of the intentions of the owner/developer to end all of this, but she only has three minutes. You've heard stories from some of the residents anxious about losing their homes. She shared stories about her neighbors. Planners, if you are leaning toward recommending the rezoning, consider adding conditions. Management has not been communicating with them and they're scared. If the rezone is favored by the Planning Commission they would like the following three conditions: 1) to know when the park will be closed beyond the 365 day notice, to be able to plan ahead. More information could allow them to sell their homes if the timeline was respectable. They'd be able to get some return on their investment and sell with full disclosure if they knew when the park would close. 2) They would like the owner/developer to give fair compensation. Six to 15 thousand dollars is not going to help those who paid \$30-50 thousand for their homes. They would like park management to stop raising lot rent every year so residents can save up for moving costs if the rezoning is passed. 3) Please reexamine the traffic problems the rezoning would create. Traffic studies do not reflect the current and future traffic flow on East Game Farm road. How will emergency vehicles get in and out to the memory center, assisted living center, to the hospital a few blocks away with the mixed use intention? Thank you in advance for your objective review, our fate is in your hands.
- Paul Willmore, 3530 E. Game Farm Rd. Space 33, Springfield; He and his wife moved to the park due to changing medical and financial needs. Purchased an affordable home with the intention of remodel and fixing it up. It was a challenge to find affordable housing. When they drove through the park it was obvious to them how well the residents take care of and have pride in their homes. Yards are kept and homes are maintained. Roads and common areas are clean and managed. The park community is close and they share many activities. Rezoning and the possible new development will only lead to displacing many vulnerable elderly. Keeping the zoning as it is will continue to allow future residents like himself to afford affordable housing. They moved in eight months ago and invested a sizeable amount of money in their home and now they are looking at having possibly no market value on this house and even eviction when it comes down to it. It is discouraging. The park is unique and it says something to community of Springfield. He would like to see it continue.
- Erica Willmore, 3530 E. Game Farm Rd. Space 33, Springfield; Her husband just spoke. They actually moved in about six months ago after looking for a home that would be affordable as her health is declining. They asked management directly what outlook of the future of the park was. They were assured enough to not only purchase the home but to remodel extensively to bring it up to current standards. They have reroofed, put in new floors, windows, kitchen, two bathrooms, lighting, electrical, plumbing, water heater, etc. They also moved a wall to accommodate future disability. The Patrician is conveniently located near shopping and other services, as well as the bus depot at Gateway. It seems to her the City of Springfield has spent a lot of time, effort and money to provide a place for Springfield residents to enjoy and access those services. However as new development keeps infilling those same residents are being pushed farther and farther away from those conveniences. Many of us will have nowhere to go if not fairly compensated for their homes. She doesn't think anyone there is fooled into thinking there are no current plans to develop the property. It is obvious by the presentation materials being referred to by both Urban Transitions representatives and the City of Springfield's traffic study a great deal of money has already been spent on this project. It was disconcerting to have surveyors in the park recently. She realizes Urban Transitions is a business, not a charity, but please do not ignore community needs for the citizens of Springfield. She is not sure what she and her husband will do when they receive notice of closure. They have already invested all they can into a home for their future. No manufactured home parks are taking used mobile homes, so moving them is not an option. On a side note, she will really miss the bald eagles that are nesting in the area.
- Laurie Hauber, 376 E. 11th Ave., Eugene 97401; She is a resident of Eugene and a staff attorney at Lane County Legal Aid. What precipitated this, several weeks ago, residents in the park reached out to people all

over the state. Several people reached out to her and to John Van Landingham, one of the State's preeminent affordable housing attorneys, who has been practicing in that area for 40 years. In response to the inquiries they both went to the park and spoke to residents about this issue because people have a lot of questions. In listening to what they have to say, which is gut wrenching to hear how this is going to impact people's lives, she was curious and began to look at Goal 10, the Metro Plan, Springfield's 2030 Comprehensive Plan, the Gateway Refinement Plan, trying to make sense of all the pieces. Without going into details, what struck her is the need to balance, as the Metro Plan states, on a case by case basis, what aspects of the proposed amendments are consistent with Goal 10 and with the plans, and also what is inconsistent. As we've heard, there are inconsistencies with policies set forth in the plans that all fall under Goal 10 which provides that framework for those policies. Things like preserving affordable housing. Obviously this will have the opposite impact; it will eliminate housing for 79 households. Encouraging home ownership at all income levels. As people have said, many if not most people in the park are lower income. She doesn't have the exact AMIs but we can assume 30-50 % AMI is where most residents fall. The only viable home ownership opportunity for residents at those income levels is a manufactured home in a manufactured home park, based on the data in the housing needs analysis from 2011. This eliminates a home ownership opportunity. Another policy is minimizing displacement. She urges you to balance all of these policies and procedures.

- Peter Hainley, 20508 SW Roy Rogers Rd., Suite 155 Sherwood, Oregon 97140, Executive Director at CASA of Oregon/Community and Shelter Assistance Corporation. CASA was mentioned at the last hearing as an organization that works with residents in manufactured home parks to convert them to resident ownership. He's going to enter a couple pieces into the record that talk about the work CASA does and the parks that have been converted throughout the state. For the last 12 years he has been doing this work. CASA got involved in this work during the during the spate of closures that happened in 2006-2009 when thousands of folks were kicked to the curb and had to basically go find new affordable housing options. A lot of those resulted in early deaths and folks being totally displaced from their communities because they had to be moved far away. He thinks you need to consider the impacts that will happen if this park closes. Another thing he'd like to comment on is a testimony from the last packet. There was neutral testimony related to the toolkit that the City formed. CASA provided some information for that toolkit and participated in a meeting that happened in September of last year where the findings to date of that toolkit was presented. The toolkit was designed to help cities in the event of a closure of a park. As he listened to the City staff and the Mayor talk about the outreach they had done, he was struck that the outreach was only to the owners and never engaged the residents. He thought that was interesting, making policy and solution without talking to people most impacted by the solution. He finds that to be reprehensible. How could you make a decision on behalf of other people, move them to some undetermined park? It doesn't square with how we should be operating. If we are going to look at highest and best use, we should consider the folks that are living there and consider that perhaps their homes and their lives are the best use for this.
- Shaw Radine, 1790 Alder Street, Eugene 97401; The first issue he wanted to bring forth is in the staff report on page 10 under Finding 20. This reads "the proposed Metro Plan diagram amendment will retain the existing surplus of low density residential buildable land within the UGB of Springfield which allows development of manufactured home dwelling units." While this gives you the idea that there is land for manufactured homes in Springfield, this is a little misleading because while this is true they are permitted in low density residential areas, very few of the homes in the Patrician qualify or are defined as manufactured home dwelling units. In fact, they are classified by the City as mobile homes because most of them were constructed before 1976. Therefore, even though there is land available for manufactured homes, these homes could not be moved. Even if they could be moved, as you've heard already, there are no vacancies for homes to go into these parks. He'd like to reiterate that Goal 10, the statewide planning goal, states "Municipalities shall encourage the availability of adequate numbers of needed housing units at prices ranges and rent levels which are commensurate with the financial capabilities of Oregon households and allow for flexibility of housing location, type and density." Similar language is put forth in the Metro Plan and on page 12 of the Gateway Refinement Plan it reads that "a diversity of sound affordable housing in the neighborhood is a

goal.” So he asked, does Springfield have adequate numbers of housing units at price ranges that are commensurate with the financial capabilities of the Patrician residents? Also, does Springfield have flexibility of housing location, type and density for residents with the same financial capabilities of those Patrician residents? His sense is that the answer to both of these is “no”, so why does it make sense to remove naturally occurring affordable housing from the City’s inventory? If the land is redeveloped, we lose the existing housing stock and this runs contrary to Goal 10 and plans developed by the City. What do the plans do if they can’t be carried out? While the development elicits visions of thriving economic developments, this is pure speculation. It is also speculation that a new development would include any trace of affordable housing. What is certain, however, is the park currently provides safe affordable housing for 131 seniors. The zoning change would be the first step in doing away with this crucial source of affordable housing which is why he encourages the Commission to vote against the zoning amendment.

- Elise Weldon, 1559 Walnut St., Eugene 97403; She first learned about this about a month ago. Her friend Susan sent an email telling her this was happening, she was appalled. She also has another good friend, Teresa Bishow, representing the owner. She didn’t know that until she came to the hearing on May 7th. She stated she thinks there is development and there’s development. There are ways to do development wisely and compassionately and ways to do it less wisely and less compassionately. Rezoning this property into Mixed Use Density is the latter. We heard from a gentleman that spoke about the mobile home park he owns in Springfield and had owned many in the area and how he cannot understand why the present owner of the Patrician isn’t happy with what he’s got; he makes good profits and has a reasonable living, why does he have to be so greedy. Her take also is that developers like to develop, it’s their right. But why does it have to be on the backs of our most vulnerable citizens? This is a community that is largely elderly, many are disabled. If they have to move they are not going to be compensated for these houses and mortgages they have invested in. These are their nest eggs. They don’t have the kind of buffer and backdrop or net to catch them. That is a really important consideration in your decision on how to go forward with this. We hear on the news how the wealth gap is getting greater and greater in our nation and across the globe. You as individuals and we as individuals can do something about that right now. This is your opportunity to do some good for the City of Springfield and not lose a community that works well together and provides good low income housing. It is basically an assisted living community in some ways. She and her husband listened to all the testimony from residents and were devastated. She doesn’t think these people are devious, they are telling you how it is. The tactics of the property owner are reprehensible.

SUMMATION BY STAFF

- Andy Limbird stated, in your packets this evening, staff has summarized the themes that have been apparent in the testimony provided up to this point. He would suggest that those themes have been echoed this evening: concerns about loss of homes, the lack of opportunity as a fall back measure, no place to go within the community. These are fair statements because staff does not have an answer, nor does the applicant have an answer in their submittal as to how the residents would be accommodated should it be rezoned and the park closed at some point. Staff did provide to you the additional testimony that was provided up to this afternoon. There was also testimony provided this evening. Again, the themes have maintained consistently with the testimony that has been provided. Staff acknowledges some of the testimony this evening, and that it is a weighing of priorities. There is not a clear and distinct overriding policy in any of the comprehensive plans that wins out. As the Metro Plan indicates, it is a weighing of the affordable housing and the housing stock in existing neighborhoods versus the opportunity for redevelopment in the City. At this point, staff’s recommendation would be to conclude the public hearing, begin deliberations and provide direction to staff as to where the commission is leaning on this matter. There is no expectation of a clear, unanimous decision or direction, based on differing viewpoints and differing backgrounds of commissioners. However staff would be receptive to any direction that’s provided. The final staff report based on the direction provided by the commission along with the recommendation for City Council will be brought back to you at the next regular

meeting on June 4th. He would be happy to answer questions if you have any, resulting from either the staff report or any of the testimony that was submitted this evening.

QUESTIONS FROM THE COMMISSION

- None

REBUTTAL FROM THE APPLICANT

- **Teresa Bishow, here this evening with Bill Kloos, representing Urban Transitions, LLC, the property owner. She would like to begin by acknowledging a clear policy choice that you have. The choice is this: In the future, does the city want the land to be developed as a new single family subdivision or a mixed used area? It is not about affordable housing versus a conference center. We are doing a plan amendment and a rezone. When the manufactured home park is redeveloped, does the City want to see new low density residential uses? That is a valid vision to have, and that would be the current zoning. Or do you prefer to see a mix of uses that will bring employment, stimulate the economy, perhaps support the hospitality industry, and provide a variety of housing options? The mixed use zone provides greater flexibility and more innovative, creative mixing of uses rather than the R-1 low density residential zone, which focuses on single family subdivision. Your decision, your recommendation to the City Council, and ultimately the Council's decision is really a policy choice. It is about your own values and those who have come before you who have set forth the adopted plan policies. The City's ultimate decision, whether to approve or deny, will not alter the property owner's decision to redevelop within the next ten years. That is the reason Urban Transitions purchased the property in 2008, to redevelop it at some point in the future. The City's decision on this proposed request of a plan amendment and rezone will influence heavily what future development occurs, but again it will not impact the timing of a park closure notice or the redevelopment of the property. In the staff report, as she independently and objectively looked at the application, prior to receiving public testimony, they provided a sound, legally defensible set of findings to approve the plan amendment and rezone. You definitely have the option to go a different direction but she would encourage you to think about the future, think broadly about all of the council goals and all of the plan policies. Again, the City's approval of the plan designation and zone change and rezoning will not change the terms of existing rental agreements. Those terms were agreed upon between landlord and tenant regardless of zoning. Any decision whether to approve or deny the zone change request does not constitute a park closure notice which is mandated by the state and which the property owner has every intention of completely following. She wanted to acknowledge some of the extra stress the residents have experienced by seeing surveyors on the property. It was not their intention to time it so closely to the public hearing. In the application when it was submitted was a blank page for exhibit G, which she submitted today. Exhibit G is the survey map, recorded at Lane County, that simply surveys the property so that the record is clear which property is the subject of the rezone. In closing, she appreciates your time and all the energy and commitment the residents have put to make it a very livable, wonderful community and she thanks them for their testimony, but she does encourage you to vote yes.**

QUESTIONS FROM THE COMMISSION

- Commissioner Koivula asked for clarification, the next agenda item is possible questions to staff or public. Would that be from the Commission?
- Kristina answered, correct. If the Commission has questions that would need to be answered during a public hearing, then that is the appropriate time to ask.

- Commissioner Koivula had a question that relates to the testimony from Reverend Meyers. Apparently there was an email he was talking about. He's not sure what it is, but wants to know if we have copies of it, can staff tell them about it?
- Andy Limbird stated out of abundance of caution, staff included pretty much everything they could that was sent to them, regarding any activities associated with the Patrician. It was presumably in response to the notification that there was going to be a Public Hearing. If there were some informational items that are requested to be excluded from the record, staff will clarify that with Pastor Meyers and it will be removed from the record. Staff did not want to exclude anything accidentally that was otherwise intended to be included in the record. Pretty much everything up to this point has been included in the record. The only things that have been difficult to include are links to video and websites. The actual textual link is included but not the content of the website or the videos.
- Kristina added that if the Commission wants to exclude that information from the record, we can follow up with the Reverend and determine what that piece of information is. If you make a decision at the next meeting, we could bring that to you to exclude from the record. You could put out there that it is information that you are not considering in your decision. If you do consider it in your decision, then it would be part of the record element. She thinks he is asking that you not consider it.
- Andy stated he believes he knows what the content is, and it is pertaining to some of the practices on the site, with the interactions between the residents and management. It wasn't specific to this application.
- Commissioner Koivula stated he was just confused about what was being discussed but if staff knows what it is, and is aware of it, he's fine.

Note: The rest of the minutes (closing of the hearing and remaining agenda items) have not yet been prepared but will be completed for the Commission's review and approval at a future meeting.