City of Sherwood Oregon

Home of the Tualatin River National Wildlife Refuge

CITY COUNCIL MEETING PACKET

FOR

Tuesday, April 5, 2016

Sherwood City Hall
22560 SW Pine Street
Sherwood, Oregon

5:30 pm City Council Work Session

7:00 pm City Council Regular Meeting

Executive Session
(ORS 192.660(2)(f) exempt public records)
(Following the City Council meeting)

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AGENDA

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Sherwood, OR 97140

5:30 PM WORK SESSION

1. **Metro Update (Metro Councilor Craig Dirksen)**
2. **Police Staffing Study (Tom Pessemier)**

REGULAR SESSION

1. **CALL TO ORDER**

2. **PLEDGE OF ALLEGIANCE**

3. **ROLL CALL**

4. **APPROVAL OF AGENDA**

5. **CONSENT AGENDA**

   A. **Approval of March 15, 2016 City Council Meeting Minutes**
   B. **Resolution 2016-013 Authorizing the City Manager to enter into a Professional Services Contract with DKS Associates for Langer Farms Parkway pedestrian crossing plans, specifications & estimate** (Bob Galati, City Engineer)
   C. **Resolution 2016-014 Authorizing the City Manager to execute a construction contract for the Tualatin Street and Highland Drive Storm Sewer and Pavement Rehabilitation Project** (Craig Sheldon, Public Works Director)
   D. **Resolution 2016-015 Appointing Rose Hulett to the Library Advisory Board** (Adrienne Doman-Calkins, Library Manager)

6. **PRESENTATIONS**

   A. **Recognition of Eagle Scout Award Recipients**
   B. **Proclamation, National Library Week April 10-16, 2016**
   C. **Proclamation, Arbor Week April 3-9, 2016**
   D. **Proclamation, Volunteer Month April 2016**

7. **CITIZEN COMMENTS**

8. **NEW BUSINESS**

   A. **Resolution 2016-016, Approving Ballot Title and Explanatory Statement and submitting to the voters Ordinance 2016-003, Imposing a Three Percent Tax on the Sale of Marijuana items by a Marijuana Retailer** (Josh Soper, City Attorney)

B. **Resolution 2016-017, Approving Ballot Title and Explanatory Statement and Submitting to the voters Ordinance 2016-002, Declaring a Ban on Recreational Marijuana Producers, Recreational Marijuana Processors, Recreational Marijuana Wholesalers, and Recreational Marijuana Retailers** (Josh Soper, City Attorney)

C. **Resolution 2016-018, A Resolution opposing Ballot Measure No. 34-244** (City Council)

9. CITY MANAGER REPORT

10. COUNCIL ANNOUNCEMENTS

11. ADJOURN to Executive Session

How to Find Out What's on the Council Schedule:
City Council meeting materials and agenda are posted to the City web page at www.sherwoodoregon.gov, by the Thursday prior to a Council meeting. Council agendas are also posted at the Sherwood Library/City Hall, the Sherwood YMCA, the Senior Center, and the Sherwood Post Office. Council meeting materials are available at the Sherwood Public Library. **To Schedule a Presentation before Council:** If you would like to schedule a presentation before the City Council, please submit your name, phone number, the subject of your presentation and the date you wish to appear to the City Recorder, 503-625-4246 or murphys@sherwoodoregon.gov

SHERWOOD CITY COUNCIL MEETING MINUTES
22560 SW Pine St., Sherwood, Or
March 15, 2016

WORK SESSION

1. **CALL TO ORDER:** Mayor Krisanna Clark called the meeting to order at 5:03 pm.

2. **COUNCIL PRESENT:** Mayor Krisanna Clark, Councilors Dan King, Jennifer Kuiper and Renee Brouse. Councilor Linda Henderson arrived at 5:05 pm, and Councilor Sally Robinson and Council President Jennifer Harris arrived at 5:10 pm.

3. **STAFF PRESENT:** City Manager Joe Gall, Assistant City Manager Tom Pessemier, City Attorney Josh Soper, Police Chief Jeff Groth, Police Captain Mark Daniel, Police Captain Ty Hanlon, Community Services Director Kristen Switzer, Administrative Assistant Angie Hass, Administrative Assistant Colleen Resch and City Recorder Sylvia Murphy.

4. **TOPICS:**

A. Police Staffing Study Results

Assistant City Manager Tom Pessemier introduced Greg Matthews with Matrix Consulting and explained the process taken by the City resulting in the study. He explained the City advertised an RFP for the study and received 7 responses and through a selection process Matrix Consulting was selected. He said Matrix did initial interviews and staff ensured the staffing survey and citizen surveys were done well. He said they then continued to gather data. He said the City coordinated a citizen's input meeting, coordinated information and then reviewed the draft reports.

Record Note: The City Council was provided with a report from Matrix Consulting Group, Sherwood Police Department Operations and Staffing Study, dated March 2016, see record Exhibit B.

Greg Matthews came forward and presented information (see record, Exhibit A). He explained background and scope of work. He stated the City hired Matrix to conduct a study and said they are a national safety consulting firm. He explained some of the key steps as part of the study, to include:

Extensive City and Sherwood police department interviews, with interviews of a vast majority of police department staff. They did an on-line employee and citizen survey's, and conducted a citizen focus group meeting. He explained they performed a variety of independent analysis of police department performance. He said one thing that arose out of the study was a discussion of alternatives and options

with Washington County Sheriff's office. He said in part of the process in preparing the final draft report, they kept the City and police department informed and they had several interim deliverables. He said they provided a profile document and survey chapters indicating output of the survey's conducted. He said a draft report was then prepared and reviewed by City management and police department executive team. He said comments were reviewed and factual edits were incorporated into the final draft. He explained factual edits and said they pride themselves in being independent and objective as a consulting firm and said they will make corrections to a report if there are any factual inaccuracies. He provided an example of a factual inaccuracy.

Councilor Henderson asked Mr. Matthews to provide a summary of his background. Mr. Matthews provided his professional background.

Mayor Clark asked regarding the online citizen survey conducted and how many respondents were received. Mr. Matthews replied 383 or 384. She asked if they had to identify themselves on the survey. He replied no, it was an anonymous survey and said they did ask characteristic questions, for example if the person was a resident or business owner or both and if they had contact with the police department within the last two years. She asked if they had the ability to filter to ensure they did not get more than one survey per person. He said in this type of survey no, the technology is such that they could not filter. He said they were able to filter at the police department staff level to ensure an officer did not respond multiple times. Mayor Clark asked in regards to the citizen focus group meeting and how many people they had in attendance. Mr. Matthews replied about 35 people. She asked if at any time they spoke to or interacted with any member of the Council. Mr. Matthews replied during the interview survey, they interviewed Councilor Henderson in the beginning of the study and said a few members of the Council were at the social, including Councilor Brouse, and they interacted there, but this was the extent. Mayor Clark asked if they took information from them. He said interview notes were done with respect to Councilor Henderson when the interview was conducted, and with regard to Councilor Brouse, it was just a conversation. He said ultimately the feedback provided by any Council member, that there is no evidence of that feedback in the report. Mayor Clark confirmed Matrix did not include any information obtained by Councilor's Henderson or Brouse in their report? Mr. Matthews said there is no narrative or reference or piece of information within the report that was provided by the two Council members. Mayor Clark confirmed that no other Council members commented in any way. Mr. Matthews replied no.

Mr. Matthews addressed Operational Findings-Crime Rate and said Sherwood is a safe community with the 2nd lowest crime rate for cities in Oregon from 15,000-40,000 population. He reviewed the exhibit charts indicating property crimes and violent crimes from 2010-2014 and explained the various types of crimes in each category. He said they would have provided 2015 information but it had not been published by the fed's by the time of this report.

Mr. Matthews addressed Operational Findings-Calls for Service Workload and said calls for service definitions vary and said they have a definition they typically use: a generated call for service is someone calling dispatch and a unit responding. He gave the example of a traffic accident and dispatch receiving multiple calls, and this still being considered one call for service. He reviewed the chart which indicated statistics from November 2014 to November of 2015, with 4700 community generated calls for service with an average of 13 calls per day. He said like any law enforcement agency, the calls fluctuate throughout the day and said this pattern is very common. He said be beyond calls for service police departments do a variety of other things, usually self-initiated activities such as, traffic stops, pedestrian stop, or doing door checks on commercial property. He said during this November to November period,

Sherwood police officers did 19,000+ self-initiated activities. He said this is one of the staffing and operations drivers that's important.

Mr. Matthews referred to Response Times and said from a communities perspective, response times are very important. He said it is a standard international metric of law enforcement performance. He said response times for Sherwood law enforcement is good and averages 7.5 minutes regardless of the call priority. He explained call priority, for example a high priority call would be a robbery in progress. He said for a Priority 1 call, the response time is under 5 minutes, 62% of the time. For a Priority 2, under 5 minutes, 57% of the time. For Priority 3-5 calls, approximately 50% of the time the response time is under 5 minutes. He said these response time characteristics indicate a very high level of service. He shared a personal story regarding the police response time while residing in a rural area.

Councilor Robinson asked what were the ranges of times for responses between the priority 2 and priority 3-5, in other words, what was the shortest amount of time for a response and what was the longest amount of time. Mr. Matthews replied he could not answer the question now and offered to get back to the Council. She referred to a violation of a restraining order and asked what the priority level would be for this type of call. Mr. Matthews said he would have to reflect back to the data and said he would suspect it is a 2 or a 3 priority call. He said it is not a priority 1 and it's not a priority 5. Councilor Robinson shared information on a Sherwood case where it took the Sherwood police an hour and a half to respond. He said this would be an outlier that would drive up the average and said if this were a priority 2 it would clearly be one of the calls that was in the 43% of over 5 minutes and that kind of call, if it occurred during this timeframe would have driven up that average of 7.5 minutes. He spoke of outliers and different average response times. He spoke of possible reasons for a response time of 90 minutes, including someone making a jail run which could take 2-3 hours.

Councilor Kuiper asked if Mr. Matthews had a scatter plat that shows where the outliers are, or a bell curve which shows where the response times are plotted. Mr. Matthews replied one has not been provided in the report and they don't typically do this, it has not usually been requested by the client. He said it's an interesting possible addition. He said this report is a final draft and if this is something that is important to you we could include it. He said unless there is a significant issue with response times, we are not going to delve into multiple analytical approaches to try and figure out the issue. He said it's probably statistically insignificant. He referred to the exhibit and stated it's a high level of service even for lower priority calls. He referred to larger cities and there being a significant difference in response time and said that is not the case in Sherwood.

Councilor King asked if there was a metric to measure in the course of how many patrolmen we have in one busy moment, and how that effected response time. Mr. Matthews said if one officer is busy and one is left on patrol and a call for services comes out, in the vast majority of instances that officer will be deployed to that call for service, and consequently there is no impact on response time. He said if all the officers are busy then that will impact the response time. He said in different policing agencies, sometimes calls for service will be queued and backed up, so that officers have the opportunity to move from call to call and dispatch will keep some officers available for higher priority calls. He said this is not happening here.

Councilor King asked regarding queuing and if anyone looked at how long this could actually get. Mr. Matthews said we did not look at the backlog queue of how long and the order of magnitude. He referred to the exhibit indicating Proactive Time and said there is a sufficient available time in general that the

queue is not going to get very lengthy. He gave the example of the City of Portland queue up their calls for service and said in Sherwood and in other high level service agencies it doesn't typically happen.

Councilor Brouse asked Mr. Matthews to explain the queuing. He said as calls come into dispatch, irrespective of the agency, there are only so many patrol resources that are out. He said depending on the philosophy of dispatch and the policing agencies in which they serve, those dispatchers may hold lower priority calls and will queue up the lower priority calls, and will either not verbally dispatch them or they will place them on their mobile data computer so that when an officer is available they can see the lower priority calls pending. He said another name for the queue is a call backlog. He said the backlog here in Sherwood generally speaking is not going to get significant.

Councilor Brouse asked if there was any data that shows how often queue occurs. He said there is probably data, but we did not ask for it and did not include it in the report. He said if there were issues that we thought would occur as a consequence of other data analysis we would have asked for that queue data, we did not think it was necessary in this engagement. He said queue data is a potential outcome of a lack of proactive time.

Mr. Matthews said an important indicator in policing is the amount of time patrol officers have to be proactive. He said this is the time available after handling all the things necessary for a community generated call for service. He said it is defined as the time dedicated addressing problems in the community, he said it is also referred to unobligated time, uncommitted time. He said proactive time is the time that officers do a variety of things such as self-initiated activities. He said typical proactive patrol time targets for law enforcement agencies are anywhere from 40%-60% of total available time. He said this is going to be different everywhere. He gave the example of an agency having a large amount of deputies but having a large geography. He said Sherwood police department has an overall proactive time availability of 69% based on the November to November timeframe that we looked at. He referred to the exhibit and the differences in 4 hour time blocks, ranging from 91% of proactive time in the morning hours of 2am-6am, and shrinking to 54% from 10am-2pm, for an overall average of 69%. He said this pattern of proactive time and how it changes is fairly typical. He said fundamentally 69% proactive time is a good metric.

Mayor Clark stated proactive time is time that they are not taking calls. Mr. Matthews replied correct and gave the example of a call for service resulting in an arrest and then having to write a report, all of this time is dedicated to this call for service, but when the officer is not doing calls for service and is out on patrol and pulls someone over for an expired license tag, this is a self-initiated activity and is performed on proactive time. Mayor Clark said the report is indicating as a whole that our officers are not actively taking calls 69% of the time, and they are doing proactive work. Mr. Matthews replied that definition would be accurate.

Councilor Brouse referred to the report and best practice regionalized patrol support system that has been put into place and how that effects proactive patrol, and said she understands this to say there is regional support that if one of our officers is busy there is another officer from another jurisdiction that will come in and support, correct? Mr. Matthews replied yes and said what you have in this region is truly a best practice and gave the example of a priority 1 call for service where Sherwood officers are busy another jurisdiction will be deployed and irrespective of the emblem or policing agencies involved, because they have vehicle locators in dispatch, they will deploy the closest unit to the call, regardless of who it is. She asked if conversely, it works in the other direction. Mr. Matthews replied yes, you have a

regionalized agreement for those priority 1 calls. Councilor Brouse asked how often this happens. Mr. Matthews said he does not recall how many priority 1 calls Sherwood has had. He said because Sherwood does not have a lot of priority 1 calls, it is not happen often. He said he has data indicating how often other agencies are backing up Sherwood and in that one year period it was over 1200 times.

Councilor King asked about the number of times Sherwood supported other agencies and Mt. Matthews replied he did not have that number currently.

Mayor Clark said and those calls would be considered "calls" and not proactive. Mr. Matthews replied there are two answers to that and gave the example of, if a Sherwood police officer was deployed on a priority 1 call to another agency because of a call for service, that would have been reflected in that 4700 calls. However, if the Sherwood police department is doing a courtesy backup, for example, to a Tualatin police officer where the Sherwood police officer feels he should backup the officer this would be done on proactive time, this would be one of those 19,000 incidents. He said this arrangement here regional is very beneficial to all the law enforcement agencies.

Mayor Clark clarified it has to do with the degree of call and its priority, Mr. Matthews replied correct and commented regarding the general region being a safe region, best practices and the infrequency.

Mr. Mathews addressed Community Perceptions and said as part of the scope of the project Sherwood made it very clear how important community perceptions were to this engagement. He said we did a lot of due diligence to involve the community. He said an anonymous online community survey was conducted where 382 Sherwood citizens responded. He reviewed some of the survey outcomes and said based on the survey results, the Sherwood police department is viewed favorably. He said 94% of the respondents feel safe from crime in Sherwood, 85% believes the level of law enforcement provided by the police department improves the quality of life in the community, 91% of respondents who interacted with the police department in the last 24 months agreed the department was professional in their contact with the citizens, 71% agreed that the department effectively communicates with the community in regards to any and all policing issues. He said there is an entire chapter in the report dedicated to the survey and the focus group.

Councilor Kuiper referred to the 91% of the respondents who interacted and asked how many interacted. Mr. Matthews said it's in the report, a decent number of those 382 people. City Manager Gall stated the number is 285 indicated they had interacted with the police department within the last year. Mr. Mathews indicated it should state the last two years and would make the edit in the final report. Mr. Matthews stated if the Council would like to have something included in the final report, such as the scatter report suggestion, it can be included.

Mr. Matthews referred to Operational Conclusions and Recommendations and said based on the variety of police service indicators, response times, proactive times, the Sherwood police department provides a high level of service. He said the police department can continue to provide a high level of service with the existing patrol staff levels. He said existing staffing levels the way they presently deploy now are certainly adequate to continue to provide high service levels. He said the Sherwood police department can further enhance the use of proactive time through improved problem oriented policing approaches. He said the report speaks to this. He said when you have proactive time and managing that time, and how that time is used, is literally one of the keys and challenges in law enforcement throughout the nation. He said the Sherwood police department does a good job of managing various elements that can

impact how police services are provided. He said for example, how leave is managed, they manage vacations so there is not an abuse. He said there is a good use of specialized patrol units, whether it's the canine unit or motor unit. He said the current 4-day, 10-hour shift program, we looked at ways to potentially modify that shift program and we could not find anything really significant that would enhance the deployment of resources on the present 4-10. He said we have other options, but given the existing 4-10's it's been devised well.

Mr. Matthews said despite all the items discussed, the community feedback they received during the study indicated the desire for additional police services. Mr. Matthews addressed Police Service Alternatives in the presentation. He said the community wants enhanced patrol visibility; an additional school resource officer that would provide resources to addresses youth issues such as drugs and potential crime; enhanced investigative services; additional emphasis on community awareness activities and keeping people apprised of what's happening at the police department and what can we as a community do to help.

Mr. Matthews said these were some of the community viewpoints based on the tools used to gather feedback. He said to address these community views we recommend various operational and staffing changes that you can implement to further enhance the already high levels of service. He addressed the presentation, Key Alternative Service Delivery (1) and said the City could undertake these to address the community's prior observations.

He said one is an implemented 12-hour patrol shift program, on a team based deployment concept. He said the report has some detail of this. He said a 12-hour shift program provides in general more resources for the same number of people because you're deploying people on 2 shifts instead of 3. He explained if you have 24 resources out there and you deploy them on 12-hour shifts, you cut that in half and if you're deploying over 3 shifts you cut the 24 by 3rd's. He said there are a variety of advantages and disadvantages to a 12-hour shift program, but we ultimately recommend a 12-hour shift program be deployed in patrol and we believe it will accomplish these things, enhance patrol visibility which was a community suggestion. He said it will extend proactive time availability for problem oriented policing. He said to make it work effectively, you would need to hire one more police officer and would also need to add one more sergeant. He explained you would then have four teams with four officers on each team and one sergeant on each team. He said this is a recommendation that would require hiring an additional modest number of resources.

Mr. Matthews said they recommend authorizing 1 additional School Resource Officer (SRO) to expand the services to youth and the City's schools. He said the City currently has one SRO and we are recommending you have two.

Mr. Matthews said they are recommending authorizing one Community Service Officer Position to support a variety of police support functions. He said these would include records support, property and evidence support, code compliance support, parking enforcement support and other administrative support functions that are in any police department. He said these are some of the alternative service delivery approaches that they are recommending to address some of the community's desires.

Mr. Matthews addressed Key Alternative Service Delivery (2) in the presentation and their recommendation of expanding the volunteer program at the police department. He provided an example of a Senior Citizen's Support Group, where they can do a variety of things such as a citizen's patrol, and

front counter support. He shared an example from another City relative in size to Sherwood and referred to this being a best practice approach. He said they also recommend reinstituting a Police Officer Reserve Program. He said these various staffing recommendations are estimated at $362,000 per year, cost. He said this is the mid-point for the recommendations we have made.

He said Matrix provided the City with another potential option to explore, which is exploring an interest and opportunities with the Washington County Sheriff's Office to provide patrol services support from 1am-6am and transfer patrol staff that are currently deployed on their graveyard shift to other Sherwood police department assignments. He said this will generally offset the staffing recommendations that we have made for additional staff because we would be moving people from graveyard into other areas. He said this is something that was not initially considered at the beginning of this study, but was an opportunity that arose as a consequence of the engagement to explore that as a potential opportunity. He said they contacted the Sheriff's office and they said they would be willing to have a discussion. He said they specifically indicated they would not approach the City unless they were asked.

Councilor King asked where this idea generated from and Mr. Matthews replied it was his idea. He said this is the only time we come up with a recommendation of this type and said every engagement is unique. He said there was just over 300 calls for service in the one year period of time from 1am-6am. Councilor King said he sees the advantages based on the workload through the whole day and having our officers on the two main shifts and said there are pros and cons, but looking at it from that angle, allows the City and the County to coordinate things and become better acquainted with what's going on.

Mr. Matthews said they recommend exploring it and said this kind of option would clearly need to be teased-out with regards to details because a Sheriff's office can provide different kinds of service levels from 1am-6am. He said a service level may be that they respond to the 300 calls and then driving back to their own beat, or a service level response is to just deploy a deputy patrol unit perhaps in a Sherwood vehicle in this time frame. He said all those types of things would need to be negotiated and teased-out and would impact costs. Councilor King replied it would depend on the level of service we want and want to pay for.

Councilor Kuiper said including response time. Mr. Matthews said that is correct, and they would have to revise how they presently conduct business to do that. He said if that is an option the City wishes to explore that would be explored in partnership with the Sheriff's office. He said the good news is they are open to it.

Council President Harris asked if this was an alternative to the 12-hour shift or in addition to. Mr. Matthews replied this would be an alternative to the 12-hour shifts and all the things surrounding them. He said what the City would do, being that you're only deploying 5 hours, is you can maintain your 4-10 shift program and you would have an hour overlap, you would cover 20 hours a day with the 4-10 shift program and they would then cover the five hours. He said they would be here and then leave.

Councilor Kuiper referred to the exhibit slide showing proactive time being 69% and said it shows a higher amount of proactive time availability in the early morning hours and said when you get down during the day from 10am-2pm, and from 2pm-6pm, and from 6pm-10pm, you're looking at in the 50% range and re-evaluating how the lineup would be if you have some type of enhanced service from Washington County, those police officers could then maybe be more applied and increase the proactive time during busier times? Mr. Matthews replied that's correct, because when you deploy more resources your proactive

time, assuming nothing else changes, will go up. He said what would occur is your graveyard shift officers and sergeant would relocate over to the time period you're talking about during that 20 hour time frame and as a consequence of that, is the proactive time availability in those time frames would go up and give you an opportunity to do more problem oriented policing and other types of self-initiated activities, whether that be traffic enforcement, special assignments and related activities.

Councilor Kuiper asked if Matrix evaluated the detective work and said we have one officer that all she does is detective work and asked what the result was. Mr. Matthews replied we did and said the detective recommendation is one of those recommendations that the police department doesn't agree with. He said we believe that one detective is satisfactory. He said there are a number of reasons we say this, one is the existing workload or case load of the detective was around 9 cases when we did the study. He said that kind of detective that specializes in person crimes, which is most of her workload, is anywhere from 8-12 cases nationally. He said with that level of proactive time the patrol officers can continue to take on investigative caseloads, and they already do this, but we recommend in the report that the whole investigative approach be more formalized. He said it's important to recognize that investigative services are one of the service level issues that could be different throughout the United States. He said some agencies will literally only investigate felonious crimes with solvability factors. He explained details for these types of crimes and said they then dispense of the other crimes because they don't have the resources or the time. He said this is one investigative approach, and another investigative approach is somewhat similar to what Sherwood is already doing, have patrol officers do some of the investigative workload. He said this balance is different throughout the nation and gave examples. He said to make a recommendation surrounding investigations is largely dependent on how you wish to approach investigative services. He said given the totality of circumstances, the workloads, potential costs, availability of proactive time, we recommend you maintain one investigator.

Councilor Kuiper asked regarding the caseloads that are acquired and said they are generally reactive, where police officers are reacting to calls and how many of the caseloads this detective has are based on proactive things that are identified during proactive time versus reactive. Mr. Matthews said you're correct, the investigative caseload of the detective is largely reactive case, they will be following up on various person crimes and this is the reactive work. He said there is proactive investigative work that is often done by a vice narcotic unit where they go out and create their own case, this is proactive investigative type of work. He said this is not accomplished by your detective here. Councilor Kuiper said it is her understanding that we have programs where they use spider plots where they go online and search the internet for people that are using pornographic materials. She said there are a lot of things going on in the community that most people are not aware of. She said in recently speaking with a Sherwood police officer there are certain case that have reached a level of being evaluated by the FBI and certain cases that fall below that, and there is a gap in identifying cases where people are using online services, pornography, child pornography and other things that are not being captured, by the level of service that one detective can provide right now. She said this is a concern for her personally and it is not being addressed. Mr. Matthews said that the observation is correct, the detective just doesn't have the time to dedicate to those kinds of criminal events that occur throughout the nation. He spoke of white-collar computerized crimes that are also occurring that you could put resources into if you wish. He said as suggested, the level of investigative effort that you wish to put into your law enforcement agency is often driven by policy and desire. He said given the totality of information we have, we're still recommending that you have one detective. He said does that mean this is the right answer for you…no, because you're bringing up absolutely valid observations, but do you want to pay for that additional detective for the

output and outcome that would result from that. He said this is our recommendation and said he understands why the police department staff would disagree with this, but they are objective.

Mayor Clark said your recommendation is based on your objective findings. Mr. Matthews replied yes and said it is based on the data we looked at, our experience, and the totality of circumstances. He said does this mean it is right for you as a community that depends on what service level you want and what you want to pay for.

Councilor Kuiper said it's quantitative and not necessarily qualitative, correct? Mr. Matthews said there are within investigative services, both qualitative and quantitative elements. He referred to the report providing a quantitative element indicating a case load of about 9 case. He said Councilor Kuiper was bringing up obvious potential crime problems that are occurring behind the scenes that could be proactively investigated which will require additional resources if you wish to do that.

Councilor Brouse referred to his statement that the detective probably doesn't have enough time is in regards to the proactive investigation. Mr. Mathews replied the detective doesn't have enough time given her reactive caseload to do a significant amount of proactive work.

Councilor Henderson asked how much of the detectives time is dedicated to proactive activities? Mr. Matthews said because they don't have a method by which that information can be easily captured, and frankly most detective organizations don't, he can only speculate based on the interview and the desk audit of her work load, he would say very limited. He said her ability to do proactive investigative work is very limited given her reactive case investigative work.

Councilor Robinson referred to the exhibit and said when you're making your recommendations for an extra police officer position, in the 12 hour shift scenario…..she wants the public to understand as well as herself, when you looked at the existing staff we have currently, we have the patrol officers and sergeants and a detective, the captains and the chief, correct? Mr. Matthews replied that is correct and there are a couple of administrative staff. She said in your report when you are saying that we need, and the survey talked about staff, which position are you talking about when you say staff in your report? Are you talking about officers or are you talking about administrative staff? Mr. Matthews confirmed from the community survey, the survey was talking about additional patrol staff. He referred to the exhibit slide of Alternative for Consideration (1) and the items listed as, enhanced patrol visibility. He said this is officers, patrol staff. He said the additional school resource officer, that's an officer position, sworn staff. He referred to enhancement of investigative services and said we had that discussion. He referred to additional emphasis on community awareness activities, and said those are some of the things that they desire and consequently as noted on the following slide, we recommended to make this work to increase visibility, to do some problem oriented policing, maybe do some additional proactive investigative efforts, we are recommending these positions. We are recommending the sworn school resource officer and we are recommending a non-sworn position, the community service officer, to help augment and support various policing services that you do. He reminded of the two administrative support positions and said they are extremely busy. He said he interview them and has seen their workload. He said community services officers are a valuable asset particularly if they have the capability to do a variety of different things, whether that is manage property and evidence, service in a records function, parking enforcement, code enforcement activities, support the police chief and staff on a special project. He said those kinds of things we think would be valuable to provide this enhanced service to the community. Mr. Matthews referred to his current parking situation and knowing that he will not get a citation because the City does

not have the resources to do parking enforcement. He said these kinds of efforts do require resources to undertake and a community service officer position can do something like that.

Councilor Robinson asked regarding the SRO position they are seeking to add, did you look in addition to what the community was desiring in that context, did you also look at what is common place…Mr. Matthews replied yes, and Councilor Robinson continued to state, in other locations so that we can have a comparative analysis. Mr. Matthews replied he did not give a comparative analysis with Tualatin or regional agencies, or site national comparisons. He said the reason is, in the narrative of the report, there's a survey that was done, and approximately 80% of school resource officer's decisions is not based on any metric other than a policy decision. He said if you want a SRO only in your high schools, that is a policy decision and if you want a SRO in the high schools, middle schools and elementary schools, this is also a policy decision. He said it is different throughout the nation. He said SRO's are becoming a bit more prevalent now over the last 10-20 years as we see different events unfolding on school campuses. He said the City has one SRO currently, largely dedicated to the one high school you have, but that leaves six other public schools and private schools that don't have SRO assets available to them accept when this one SRO can get out a do a special project or classroom training. He said given the magnitude of the number of schools you have, given the request of the community, it would not be impractical for us to recommend another SRO, because it is becoming more common throughout the united states and we believe that would be a beneficial recommendation to you. He referred to the executive summary in the report and said they ranked their recommendations from their perspective of an independent and objective analysis….he said if you could make one decision, this is the decision we suggest you make.

Councilor Robinson asked when they did an analysis of our current staff, her understanding right now, is that we have yet to fill a budgeted position as an officer lateral transfer that is currently being advertised. She said so when you are authorizing and recommending additional personnel, did you take into consideration the fact that we have an advertised position out there and counted that person available for shifts when you did your analysis? Mr. Matthews replied that is counted as filled and said when we are suggesting additional authorized positions that would be above any present vacancies you have.

Councilor Robinson said last year, and doesn't remember the numbers, but she thought we were somewhere in the range of $80,000-$90,000 in overtime police services and said part of this she understands was unavoidable for private events for the Robin Hood Festival that we have to have our police staff there, etc. but is there a way with your recommendations that you foresee that, what she thinks is a large amount of overtime costs, do you see those costs going down with a 12-hour shift and additional positions kind of tweak the way you have recommended it? Mr. Matthews replied he would only be speculating, and said this information may or may not answer your question. He said, will it go down by adding one officer on a 12-hour shift program, I don't really know. He said he recalls from the analysis there was a bit over 2000 overtime hours. He said he can provide benchmarks and said if overtime is over 10% of personnel costs you might have an issue. He said he did not think $90,000 reached that benchmark. He said with one additional staff the City will probably not see a lot of change in the overtime, but he doesn't know the magnitude of the City's special events.

Councilor King commented regarding his employment with Multnomah County jail and their annual budget for overtime and gave examples.

Mr. Matthews said they looked briefly at overtime and based on a couple of metrics they saw, they did not think it was an issue and focused on other things. He said in public safety overtime is an issue. He spoke of people getting sick and having vacancies and vacancies becoming more difficult to fill.

Councilor Robinson asked if Matrix was given information about the total City budget versus the police budget. Mr. Matthews said he has it. She asked if it seemed out of the ordinary for our size of City. Mr. Matthews replied, percentage wise, no. He said public safety, law enforcement and fire, is generally the largest slice in any municipality. He said public works depending on the magnitude, is often the next biggest.

Mayor Clark said she wanted to make sure as people are absorbing all the information that they're really understanding what your study is saying. She said she believes there are two things happening. She said what you have concluded in your study is that the current staffing levels that we have in our police department are appropriate for providing the "high" level of service that we are currently having in our community, is that correct? Mr. Matthews replied that is a fair characterization.

Mayor Clark said the additional ideas coming from your citizen survey of 382 people out of our 19,000 population, are extras, they are suggestions that if you want the Rolls Royce as opposed to the Cadillac that you already have, then this is what you are going to need to consider. Mr. Matthews replied he is not sure he would have characterized it that way, and said yes, the additional resources that we are recommending are above and beyond as we have already discussed. He said some are policy decisions, the SRO. He said if the City did not have an SRO he would have recommended that you have at least one SRO, having a second is a benefit as we articulate in the report. He said if you can't afford it, then don't have an additional SRO. He said with regards to the additional staff positions that we recommended, that's to facilitate more problem oriented policing, more visibility as requested by the community. He said the Mayor's point is well taken, and yes, you have a police department that is appropriately staff to provide high service levels, having said that, the community wants more. He referred to what the community wanted being ok, more SRO's and higher visibility. He said these aren't necessarily inappropriate requests, but in the broader context, you have a good police department that provides a high level of service now.

Mayor Clark referred to the exhibit, Alternatives for Recommendation (2) and said you made lots of recommendations that if you want the extra service, that you thought it would be $362,000 and then you talked about exploring the interest and opportunities for the Washington County Sheriff's to provide patrol services from 1am-6am, is that recommendation a recommendation from you for additional services, or is that a recommendation that you feel that is something that we should do in order to provide the best service in the City. Mr. Matthews said with respect to the last bullet, it's a recommendation we believe you should absolutely explore because what it will do, if it were to pan out from a cost perspective and service level perspective. He said it will free up an additional contingent of officers that you could deploy in these other places that we have discussed to provide these additional services that the community is requesting instead of hiring new people, you just redeploy some of what you have. He said he believes this recommendation has the possibility of giving you as a community the greatest flexibility to do a variety of things.

Mayor Clark said without increasing the cost? Mr. Matthews replied, you would increase cost because you're going to have to pay the Sheriff's office for that service. Mayor Clark said but we would not be paying an officer in the City? Mr. Matthews said whoever the officer and sergeant that occupy that

timeframe now, you would relocate them to the other shifts we have spoken of. He said for example, the graveyard shift officer, can then go and be the additional SRO. He said these are the types of options you may have if this were to tease-out.

Councilor Harris referred to the 300 calls that we get in a year, less than one a day, from 1am-6am, and asked if there a time of year that is more prevalent, like during the holidays. Mr. Matthews replied he could answer the question if he was looking at the information.

Councilor King said Mr. Matthews has not spoken of the feedback he received from the officers in the police department as far as that information. Mr. Matthews said we did not talk about the feedback in the presentation and offered to go through the chapter in the report. Mr. Matthews provide highlights from his notes and said 100% of the officers that took the survey, which was the vast majority, believe that the police department provides a high level of service to the community. He said 86% believe the citizens of the community view the police department as a high priority department and this is very positive. He said 91% agree that they have appropriate backup availability from your community partners.

Council King referred to the report (see record, Exhibit B), page 24, item number 11, “we have sufficient staff resources to provide the services that we are expected of the department.” He said you have 59% that disagree with this. Mr. Matthews said there is 59% that do not believe you have sufficient resources to provide the police services “expected” of the department, but a lot of our conversation tonight has been surrounding some of the expectations of the community. Councilor King referred to item number 16, “we have the staff we need to properly investigate crime incidents in our community”, and they disagree at 77%. Mr. Matthews replied, right and no one is going to like us on the investigate opinion.

Councilor King said with those being said, he would have preferred a bit more background as to why they feel that way. Mr. Matthews replied, “why they feel that way”, we probably articulated a lot of it tonight, does our investigator have enough time to do some proactive investigate efforts, do we have a vice unit, no. Councilor King said, even on the reactive side of that, is she able to cover most of the reactive stuff that she is doing, or is there stuff that’s….Mr. Matthews said, is she able to cover most of the reactive stuff….He referred to the first slide in the presentation and said to remember there is not….If you start to get into solvability factors related to felonious crimes, is there going to be a lot of reactive stuff that she has to manage? He said the answer is, given her caseload, one detective can do that. He asked, could you investigate more misdemeanor crimes, proactive crimes, if you wish. He said this is the key, what level of investigate effort do you want to provide as a community.

Councilor King said based on her workload right now, at what point would you recommend we need another one. Mr. Matthews gave the example, if she had a caseload of 20 active cases, he would have said, you probably need another investigator. He said, but she didn’t, she had 9. She had 5 active with 4 pending further information for follow up. He said one thing to recognize is this is a snapshot in time.

Councilor Brouse asked if part of this is because officers are doing their own investigations. Mr. Matthews said, yes this is a very good point. He commented on the philosophy of the police department and Matrix’s philosophy of having patrol officers participate in the investigative process. He said patrol officers are doing some of the investigations. He said they suggested this continue and suggest that the process be a little more formalized with regard to case tracking, particularly in patrol. He said right now the detective is using a spreadsheet, he said he is not suggesting you go out and buy a lot of software, but,

we are suggesting that you could manage the investigative process in the fashion we described without adding another investigator.

Councilor King referred to page 24 of the report, item 14, “the department has staff we need to perform safely and effectively during field incidents”. Mr. Matthews said yes, it’s a slight tweak of a prior question, which just talked about safety. He said 45% believe there were sufficient resources for officer safety purposes and in this instance, it’s “safely and effectively”. He said there is an observation of, are we really being effective with the number of resources that we should have. He said he believes the department staff recognizes that the community wants service, so consequently, he thinks some of the answers reflect that. He said he believes this is the reflection of the police officers wanting to meet the needs of the community that were articulated in the survey and social event.

Mayor Clark reminded the Council to finish up their questions to allow a break before the next council meeting session. She said the Council will have many opportunities to continue to talk about the report. She asked for other questions for Matrix.

Council President Harris asked if Matrix had ever done a study where the public as well as the police department said they were perfectly happy with all service levels and everything is “Tesla like”. Mr. Matthews replied no. Councilor Harris commented that everybody always wants more and Mr. Matthews replied not everybody, but 90% want more. Mr. Matthews commented about one of the reasons they are hired to provide an independent objective analysis of the resources that you may need.

Councilor President Harris said she believes no matter what we do, even if we provided everything in here, people will still want more as this is our nature as humans. She said we want to live in a City with zero crime. She commented she suspects that’s where the less than positive feedback comes from, as a human with children and families around we want to live in a community with zero crime and we are trying to figure out how to get there.

Councilor Kuiper said she would like to know more about the volunteer programs and what Matrix has seen with the citizens and the reserve officers and what types of support they can provide the police department. Mr. Matthews replied he did not believe it was detailed to the level that she is wants, but said in the final he can augment that a bit, if the Council would like. He referred to Paradise Police Department in Butte County California and their volunteer program.

Mayor Clark thanked Mr. Matthews. Mr. Matthews offered to answer Council questions now and in the future.

Councilor Henderson asked, in your professional opinion, do you believe based on your report and analysis, and the time you spent with our staff, that the citizens of Sherwood receive good service for their investment? Mr. Matthews replied, bang for the buck, yes.

5. ADJOURN:

Mayor Clark adjourned the work session at 6:45 pm and convened to a regular session.

REGULAR SESSION

1. **CALL TO ORDER:** Mayor Clark called the meeting to order at 7:08 pm.

2. **COUNCIL PRESENT:** Mayor Krisanna Clark, Council President Jennifer Harris, Councilors Linda Henderson, Renee Brouse, Sally Robinson, Dan King and Jennifer Kuiper.

3. **STAFF AND LEGAL COUNSEL PRESENT:** City Manager Joe Gall, Assistant City Manager Tom Pessemier, City Attorney Josh Soper, Police Chief Jeff Groth, Police Captain Mark Daniel, Police Captain Ty Hanlon, Community Services Director Kristen Switzer, Arts Center Manager Maggie Chapin, Administrative Assistant Colleen Resch and City Recorder Sylvia Murphy.

Mayor Clark addressed the next agenda item and asked for a motion.

4. APPROVAL OF AGENDA:

MOTION: FROM COUNCIL PRESIDENT HARRIS TO APPROVE THE AGENDA, SECONDED BY COUNCILOR KING. MOTION PASSED 7:0, ALL MEMBERS VOTED IN FAVOR.

Mayor Clark addressed the next item on the agenda and asked for a motion.

5. CONSENT AGENDA:

A. Approval of March 1, 2016 City Council Meeting Minutes

MOTION: FROM COUNCILOR BROUSE TO APPROVE THE CONSENT AGENDA, SECONDED BY COUNCILOR HENDERSON. MOTION PASSED 7:0, ALL MEMBERS VOTED IN FAVOR.

Mayor Clark addressed the next item on the agenda.

6. PRESENTATIONS:

A. Recognition of Eagle Scout Award Recipient

Mayor Clark called forward Dalin Dahl and asked him to describe his Eagle Scout project. Dalin said he led a small group of volunteers and built a segment of a path at Browns Ferry Community Park in Tualatin. He also led the group in planting native plants in the area to reduce water consumption and reduce cost to the City.

Councilor Brouse asked Dalin how he came up with the project. Dalin said the City of Tualatin has an interface where they list projects that would be appropriate for eagle projects. Mayor Clark indicated this would be a note to staff to have a similar service. Mayor Clark presented Dalin with a certificate of achievement and thanked him for his service.

B. Recognition of Art Students

Mayor Clark recognized students that participated in an Arts Contest. She stated Sherwood schools and art instructors were invited to submit art this last fall and Maker's Five procured and displayed the art. She

said the 2016 student show is displaying art from Sherwood High School, Sherwood Charter School, Sherwood Home School, Blue Pluhm Studio, D K Boljat Incorporated and Mosaic Art Loft. She explained the judging process and called forward students in various categories and presented them with certificates. The following students were recognized:

1st - 5th Grade Category: Ashley Zwemke, Katie Rice, Jocelyn Ham, and Sophia Miller.
6th - 8th Grade Category: Nicholas Aggson, Jason Price, Natalie Orlik, and Maddie Kremer.
9th - 12th Grade Category: Kimbra Hern, Jasmine McClesky, Shyann Pharr, and Amanda Heard.
Adult Category: Kim Derting, Gloria Schrock, Annette Perkins, and Rebecca Tournier.

Sherwood Center for the Arts Manager Maggie Chapin came forward and said Maker's Five has worked in partnership with the Center for the Arts to put together the gallery series. She said this is the second student show at the Center. Maggie recognized the art teachers in the community and thanked Darla and Mike Boljat with Maker's Five. She recognized Sherwood citizens for their partnerships in recognizing and supporting the arts.

Mayor Clark thanked Maggie and commented regarding next year's program to include a slide show of the art. She addressed the next agenda item.

C. Employee Spotlight

Councilor Robinson said she thinks the Council does a great job in recognizing various people, and said for instance, the Mayor has her annual citizens of the year award where she selects an individual. She said we recognize our artists in town, our eagle scouts and she thought there was something missing at the Council meetings, and something that she thought would be wonderful. She said the thought came to her that many of our employees that run the City are long term employees and have been at the City for a long time because it is a wonderful place to live and work. She said we as a Council also let the public know what we are doing for you in our council comments, and said the City Manager will tell about an employee that has done something a bit more than just his job, and has gone above and beyond. She said she believes the employee would appreciate some recognition that we as a Council believe they are doing a great job. She said we are fortunate to have a City full of people that have a high work ethic and are proud to be an employee of the City. She said she believes the employee spotlight will continue once a month.

City Manager Joe Gall said this was an idea Councilor Robinson brought to him a few months ago and said to give her credit, a lot of the folks we will hear about are unsung and do great work and don't necessarily get the recognition in the community and in front of the Council. He said our first choice was an easy choice, an employee in public works, Jose Felipe Castelan who is a Sherwood resident since 2003. He said Felipe started as a seasonal in parks, as do many public works employees who start as seasonal workers. He said he was hired as a full time employee in November 2003, mainly for his carpentry experience. He said from parks, Felipe went on to work in storm and sanitary and then became our full time facilities person. Mr. Gall said we have four major buildings, including the Arts Center which was recently added and we have one facilities person, Felipe. He said Felipe does a fantastic job and he knows that other City employees appreciate the work done by Felipe. He said as a facilities person, Felipe performs all the maintain duties at all City facilities which includes inspections, repairs, painting, plumbing issues, pressure washing sidewalks and parking lots and also sets up and tears down for festivals and events. He mentioned an event occurring in the City this weekend with a large tent and said

Felipe will be taking the lead to put this together. He said Felipe sets up for all public meetings of the Council, planning commission, budget committee and all types of meetings. He said he handles all set up for library events and municipal court. He said Felipe is an employee that is always willing to stay late, come in on weekend and support whatever the need is. He said he is a proud resident and employee and in many cases he is the face of public works in working with our facilities. Mr. Gall said Felipe could not be here tonight and appreciates the Council is spending time learning more about individual employees that may not be seen as they are working behind the scenes.

Mayor Clark thanked Felipe for his great work at the City and addressed the next agenda item.

D. Washington County Communication System Bond Measure

Police Chief Groth introduced some of the guests that represented the Washington County Speakers Bureau that was formed to present factual information on the upcoming November 2016 ballot measure. He said we also have people from the Washington County Consolidated Communications Agency (WCCCA) that are here to assist with any specific technical questions, Ron Polluconi, Technical Services Supervisor and Kelly Dutra, Director of Communications. Chief Groth introduced Sherwood Police Captain Mark Daniel and Chief Derek Weiss Division Chief with Tualatin Valley Fire and Rescue.

Derek Weiss stated they are here tonight to provide information on Measure 34-243. He explained when a person calls 911 they expect fast service and an integral part of that fast service is a robust communications network that can withstand natural disasters and hundreds of users. He said as first responders we rely on that system as a critical lifeline to our ability to become aware of an emergency, to better understand the emergency and route which is information we receive, to coordinate our actions when we arrive and to work together when we are at different types of incidents. He said maybe most importantly when we need to ask for help that is our lifeline. He shared a story when he was a younger firefighter and a ceiling falling on top of him and having a radio and wire cutters and these two items being things that he carries on him when he goes into a fire.

Captain Daniel spoke of the recent trestle fire in Sherwood and the method of radio communication in which they learned of the fire. He spoke of Police and Fire responding in a rapid and collaborative effort through use of the radios. He said the radios are used daily between the two disciplines and they have made significant strides when responding together through WCCCA patching the calls together. He spoke of hazards and the personal safety of first responders, and the communications between agencies and this also allowing for rapid service. He said the communications allows them to be efficient and effective in providing public safety services.

Mr. Weiss said the current system has been in place since 1990 and spoke of current technology being used from being from 1990. He said today we have 19 agencies using the system, cities, schools, public works, and hospitals and life flight. He said the demand has increased as well. He said the parts for the system aren't made any more and the technology is outdated and buildings and towers that are currently being used are not made to withstand the seismic activity that we know will happen at some time in the future.

Captain Daniel said on May 17, 2016 Washington County voters will be asked to consider funding a measure to replace and upgrade the emergency communications system. He said Washington County would issue a general obligation bond to pay for $77 million of improvements to include converting the

existing system to current technology, installing more towers, strengthening facilities for the event of storms, earthquakes and other emergencies and replacement of 3000 radios currently in use by first responders, to include the portable radios carried and all car radios that go into all responding police vehicles and fire apparatus within Washington County. He said the projected rate is not expected to exceed .08 cents per thousand, and .08 of $1000 of assessed value over 21 years. He provided the example, for a $255,000 house it's not to exceed $20 per year or for a $500,000 it would not exceed $40 per year. He said this is the estimate for 2016. He said for Sherwood, it's about a $300,000 median.

Captain Daniel thanked the Council and offered to answer questions. He said information is available on the website WCemergencycommunications.blogspot.com, he said information cards and a fact sheet of frequently asked questions are also available in the room.

Mayor Clark asked if the handout were available at a City desk. Captain Daniel replied they are available at the Sherwood Police Department and they will be available at City hall.

Councilor Robinson referred to the fact sheet with frequently asked questions and language of, "several partner agencies rely on the system to communicate with first responders include *some* public schools". She asked why isn't it *all* public schools, and which ones are not included.

Ron Polluconi, Technical Services Supervisor for Washington County 911 came forward and said the schools systems have been slowly coming to a different realization about their own security. He said there was an initial push back in 2001 around 9/11 and there was a lot of heightened awareness but no one thought that we had a risk. He said schools since this time and especially in recent years, things have changed. He said Beaverton schools were the first ones to come to us and recognized that they had a potential risk and they made a substantial investment in not only placing radios in schools so they could talk to first responders, but also changing the way they did security in general and inviting in the Sheriff's office at the high schools to provide services. He said where you have school resource officers (SRO), you have someone with a radio capability in the building and more often than not where that is deployed, there is also one or two radios typically in the office for office personnel. He said typically we have found that most schools that have SRO's typically have radios to allow school staff to contact the SRO. He said it provides the ability to take a radio into a safe area and communicate out when they go into lock-down. He said other schools are just coming into this level of awareness and gave the example of the City of Hillsboro. He said Tigard and Tualatin schools have SRO's and at least one radio in each school. He spoke of schools adopting in-building application systems and said this is important when going into a lock-down scenario and going into a safe area. He said often times the safe areas are in the center or below ground and in this case that tends to make coverage difficult with penetration of the communication system. He said the in-building amplification systems allow for coverage into those areas. He said this is something that many schools have been adopting and implementing within the last five years.

Mayor Clark asked if this is a funding responsibility of the school district or the private school administration to provide the system. Mr. Polluconi replied yes.

Councilor President Harris commented regarding having this conversation in her elementary school as cell phones within the school don't work. She said the conversation has been what will be done if there is a lock-down and teachers don't have a way to contact anyone. She said the principal has said they have a way to contact emergency services, but has not produce or shown the method. Mr. Polluconi replied there is probably a radio somewhere.

Mr. Polluconi said with regards to what we are doing with schools moving forward and said we are buying a new application and a server that allows us to use a smart phone to communicate with first responders. He said this will remove the necessity of having one radio sitting somewhere and having to run to that radio. He said the teachers and administrative personnel would have the ability to talk on the system. He indicated there would be a small license fee. He said in the case where you have a school where they don't have this, we still would recommend in-building amplification, the amplification system that works on our radio system will also support cellular.

Councilor Brouse said she has heard in two recent workshops she attended, information about satellite phones. She said when the big earthquake comes, satellite phones are going to be the phones that will be working properly. She asked how this new system stands up to a big earthquake using the towers. Mr. Polluconi said what we have done and continue to do is seismically upgrade our tower site. He said these locations have emergency power generation, and are hardened areas and we placed them in locations where the ground is less likely to shake. He said once this is in place, we put in two power systems, one of which is a commercial system and the other is a DC power system that is backed up by an emergency generator. He said the new systems we are putting in, in addition to having a generator, the power system will then alternate between the generator and the DC power, giving us about four weeks of run time. He said the reason we are increasing this from our ten days, which our current system is designed for, is when we talk to the emergency communications offices, they are saying we have two issues when the big one comes; one will be water which will be paramount for everyone and the second will be the availability of fuel. He said we are designing the system around the strategy that we will need to keep our system going for 3-4 weeks. He clarified their system is independent of cellular.

Mayor Clark asked for other Council questions, with none received she thanked the presenters and addressed the next agenda item.

7. CITIZEN COMMENTS

John Clarey Sherwood resident came forward and said he has been a resident since 2001. He commented regarding having issue with the last paving project that occurred on Sunset Blvd. He said Sunset Blvd. was open before repairs were completed and they suffered quite a bit of damage to one of their vehicles as they came across the intersection. He said on June 8, they came off of 99W onto Sunset Blvd through a 2½-4 inch drop that was left open by Brix Paving. He said Brix Paving has denied responsibility and said it was not their issue. Mr. Clarey said the damage to their car was over $4000. He said the vehicle was towed and he called Sherwood police department to file a report. He said they contacted both the City public works and Brix paving and both said it was not their issue and to contact their own insurance company. He said he noticed after the communications that every cut had a ramp on it, like it was supposed to according to ODOT rules and regulations. He said they knew they were at fault and we have asked them for payment and they are refusing to pay and we have gone to a Washington County civil court case and have won that case and Brix Paving still refuse to pay what is owed to use. He said $4000 is a lot of money. He said they are asking that the City Council review any bids by Brix Paving and not award them any more work. He said they don't care for the citizens and are not following regulations. He said he is aware they have an upcoming bid. He said the work they do is great, the follow up to their issues is not.

Laurie Zwingly Sherwood resident came forward and said she sat through the Police Survey presentation and wanted to speak with the Council in both capacities as the Chair to the Police Advisory Board and as a Sherwood citizen. She said the Police Advisory Board was honored to be a part of the interview process that Mr. Matthews and Matrix were involved in. She said Mr. Matthews attended a Police Advisory Board meeting and provided his contact information if the Board should have any concerns. She said she also interviewed with him as the Chair for the Advisory Board. She said she went into the interview with information from 100+ Sherwood citizens that the Board members received through their outreach. She said his information tracked with what the Board was finding as far as the information regarding the SRO (School Resources Officer) and people very interested in having an additional SRO once they realized how many we have and where he spends his time. Ms. Zwingli commented regarding not currently having the SRO ratios in comparison to neighboring cities. She said in addition to this citizen concern, they were concerned with people speeding through neighborhoods and drugs in our parks, especially Stella Olsen Park. She said the 7.5 minute response time caught her attention and said she was concerned about what this meant. She shared a personal experience with a run-away and the response time of an officer and having to speak with the officer over the phone because of another issue that was occurring. She said she was interested when she heard of the 7.5 minute response time and if this was in person or by phone and inquired with Mr. Matthews. She said he indicated it was an in-person response time and noted that he would be doing a scatter-sheet that he discussed. She said she is requested that when Mr. Matthews submits the scatter-sheet, if it could be made public. She said as she is aware of the statistics for police officers and suicide rates are higher than they are for the general public. She said if the Council is going to consider a 12 hour shift or any changes in shifts, she would ask that the Council also consider what it would do to the officer's mental health and moral.

With no other citizen comments, Mayor Clark addressed the next item on the agenda.

8. CITY MANAGER REPORT:

City Manager Gall stated we have started accepting applications for the Sherwood Citizens University and they are due by 5 pm on April 1. He said the City has received about 8 applications and have space for 20. He explained the program was a 6 week program of classes held on Monday evenings for 3 hours where people will learn how their government operates. He said a number of cities offer this program and we will learn from this first offering. He said the information is available on the City website.

Mr. Gall reported he will be attending interviews at the City of West Linn for a shared intern. He explained the project of having a shared intern with West Linn which we have done for the past three years. He said the program has grown to 12 different organizations in the Portland Metro area. He said they will be interviewing 12 soon to be graduates from around the country. He said they will be selecting three interns from the 12 applicants and they will be getting a years' experience in four different organizations. He said the Council has supported the program and it is not a huge expense to the City. He said one of the projects our intern Mark Yager worked on last year was putting together the Citizens University and he is now working for the Cities of Lake Oswego and Wilsonville.

Mayor Clark thanked City Manager Gall for bringing this program to the Council and said it's a great idea and program to support students that are interested in City work.

Mayor Clark addressed the next item on the agenda.

9. COUNCIL ANNOUNCEMENTS:

Mayor Clark reported she recently returned from the National League of Cities Conference in Washington D.C. and said it was a great conference with many City representatives meeting with our congressional delegation and advocating for things that are important to Oregon. She said this is done through the League of Oregon Cities and said we met with all the legislative offices and met with Senator's Merkley and Wyden. She said it's important for our voices to be heard at the federal level to obtain funds and support of federal programs. She said one of the topics we advocated for that we had not received a full commitment for from one of our senators was tax free municipal bonds. She said we traveled as a group and spoke to our senators and congressmen about support the continuation of tax free municipal bonds so that cities can be competitive in the open market and get the funding to allow us to do great things for our cites. She confirmed during their trip they acquired the commitment from both senators.

Mayor Clark asked Assistant City Manager Tom Pessemier within one year what does the City save in having tax free municipal bonds. Tom replied he could not provide an exact number, but the City is doing large projects such as the water project and believes we have $20-22 million worth in bonds out on our water project. He said the ability for us to get taxed exempt bonds through the system saves a lot of money. He said he knows the effected rate would go up by at least 1 to 2 points, maybe more. He said it lowers our operating costs and ability to do projects. He referred to the WCCCA presentation and them going out for bonds and the possibility of paying higher interest rates and what they could accomplish and the costs associated with those projects and the costs to citizens.

Mayor Clark commented regarding the costs going back to the citizenship to pay the gap. She said this is important to us as Oregon Mayor's to advocate for us and said she was proud to represent Sherwood as well as Washington County.

Mayor Clark reported she attended the Annual Egg Hunt to Hope for Geneva Rose and said we received unfortunate news that Geneva passed away the day before the event. She expressed her condolences to the Rose family and thanked everyone who attended and those who contributed online.

Councilor King reminded of the St. Patrick's Day event to be held at Clancy's in coordination with Sherwood Main Street.

Councilor Robinson reported last Thursday she attended the West Side Economic Alliance (WEA) breakfast meeting and said they discussed marijuana and she also attended the planning commission meeting workshop that evening where marijuana as also discussed. She provided an overview of the workshop format with roundtable discussion, maps to view, categories of producers, wholesalers and retailers. She commented regarding the attendees at the workshop included the owner of a medical marijuana facility. She said at the WEA meeting they had a very knowledgeable and educated CEO of a business who is operating a marijuana facility in Oregon and expanding. She said she learned quite a bit from this and said a representative from Senator Wyden's office was there and he was working on in the future some scenario that would allow banks to take in money from these facilities. She said some of the main issues in security is potentially being discussed and maybe being resolved soon or in the future. She said the discussion was good and believes the consensus at the planning commission meeting was that we wanted to have those facilities in the industrial areas, just like we have decided to do with medical marijuana facilities. She said the recreational facility is being discussed in making regulations in the event that the measure submitted to the voters in November doesn't pass, if that ban on those facilities passes,

then the regulations will not go into place. She said there is a second one of a tax, so we can have some revenue for our police force in the event that we do allow those facilities in Sherwood. She said it's a very interesting process and encouraged people to get on line on the City website which has a current survey and welcome input from the citizens on where they think the recreation marijuana facilities should go if in fact they are here, depending on the vote in November. She said we would really love the input of the citizens and they have a voice and said it helps in making decisions at the planning commission level that then comes before the Council.

Councilor Harris reported on upcoming Library events, Six Word Story Contest and explained the contest and commented regarding the contest from 2015. She reported on a Poetry Slam at 7 pm on March 25 and said the library was able to purchase the microphone and sound system for this through a grant approved by the City. She reported on Saturday is a comic book workshop at the library at 2:30 pm. She reported May 19 is the Suicide Prevention class/seminar at the library from 5:30 - 7:30 pm. She said people will be able to learn ways to recognize a mental health emergency and how to get support for the person struggling, and people will learn action plans to help in saving lives. She said this will be the second event like this held in Sherwood. She said in speaking with our Washington County representative in our area she is very thrilled that this is coming from a City initiative and said Sherwood is the only City she has had that is bringing this forward. She reported the Putting on the Ritz Gala is April 2 with live music and prize baskets. She said the baskets will be in the $500 range with some amazing prizes and funds raised are for our Friends of the Center. She said there will also be a wine wall. She thanked Maggie Chapin from the Center for the Arts for their donation for a recent event.

Councilor Henderson reported she attended a recent Parks Board meeting on the behalf of Councilor Kuiper and they had an update on the Cedar Creek Trail. She said the trail is partly funded by a $5 million grant received from Metro. She said they also spoke of the dog park. She reported this Thursday is a Police Advisory Board meeting, 7pm at the Police Station. She reported on high school rehearsals for the Guys and Dolls event next month, April 21st. She acknowledged the police department and their Emergency Preparedness class with 85 people in attendance and asked if another class could be scheduled. She said today is the one year anniversary of Justice Cole's death. She said he was a ten year old boy who passed away and his family asked if we would note that and they wanted to express appreciation for the efforts that our community has come forward to educate people to help to reduce suicides. She mentioned a recent suicide in the community.

Councilor Brouse thanked the police department and Captain Daniel for arranging the Emergency Preparedness workshop. She spoke of the valuable information. She mentioned the Egg Hunt for Hope event and said there was a great turnout and they raised $38,000. She announced Neighbor to Neighbor Day is May 7, with an opportunity to serve local seniors with work around the home. Trash Palooza is April 23 and registration is open. She said Baja Fresh grand opening is this Friday at 4pm, and the Annual Rotary Tree Sale starts on April 16 and goes thru May 8. She said the trees are $13.

Councilor Kuiper reported she did a citizen ride along with a Sherwood police officer and she shared her experience. She said any citizen can do this and encouraged people who have an interest and said the process is very simple. She said she learned about the Redflex device on Tualatin–Sherwood Road and Highway 99 and spoke of the process for collecting data from these devices. She mentioned the Robin Hood Festival association and they being run by less than 10 volunteers. She said this year they will be putting together the float for the Rose Festival and explained the contributing participants. She thanked

City Manager Gall for moving forward with the Citizens University and thanked Mark Yager for putting together the plan, she encouraged people to sign up.

With no further business, Mayor Clark adjourned the meeting.

10. ADJOURN:

Meeting adjourned at 8:25 pm.

Attest:

Sylvia Murphy, MMC, City Recorder	Krisanna Clark, Mayor

City Council Meeting Date: April 5, 2016

Agenda Item: Consent Agenda

TO: Sherwood City Council

FROM: Bob Galati, P.E., City Engineer
Through: Joseph Gall, ICMA-CM, City Manager
Josh Soper, City Attorney
Julia Hajduk, Community Development Director

SUBJECT: Resolution 2016-013, Authorizing the City Manager to enter into Professional Service Contract with DKS Associates for Langer Farms Parkway Pedestrian Crossing PS&E.

Issue:
Shall the City Council authorize the City Manager to enter into a Professional Services Contract with DKS Associates for the Langer Farms Parkway Pedestrian Crossing PS&E?

Background:
In March 2015, City staff was directed to conduct a transportation analysis of the Langer Farms Parkway with the intent to determine if a mid-block pedestrian crossing was warranted and could be located near the access drives to the Parkway Village and the Target store site. DKS Associates was contracted to perform the analysis under an existing On-Call Transportation Engineering Contract (Resolution 2011-058).

DKS Associates completed the transportation analysis and submitted a report (dated June 12, 2015, attached as Exhibit A). The report's conclusion stated that a pedestrian crossing of Langer Farms Parkway located near the driveway accesses of the Parkway Village and the Target store site was warranted and technically feasible.

The report recommended the installation of a Rectangular Rapid Flashing Beacon (RRFB) system and radar changeable speed feedback signs, as part of the construction of a standard mid-block pedestrian crossing, south of driveway accesses. Street lighting illumination of the pedestrian crossing would be performed as part of the pedestrian crossing design process (once the exact location of the pedestrian crossing was identified), to determine if additional street lighting would be necessary.

Due to the specialized nature of the pedestrian crossing engineering requirements, DKS Associates was asked to submit a scope of work and fee under the direct appointment clause of the State's ORS 279C.115(2). DKS Associates has submitted a scope of work and fee letter (dated February 19, 2016) to provide engineering design services for a stated fee of a not to exceed amount of $34,550.00. Staff recommends that the City Manager also be authorized to increase the contract amount by an additional 10% contingency amount of $3,450 to cover unanticipated design issues.

Financial Impacts:
The total contract amount is a not to exceed amount of $34,550, with an additional 10% contingency amount of $3,450 as authorized by the City Manager for a total budgeted professional engineering services contract amount of $37,950.

Funding for the design phase of the project is covered under the City Transportation SDC fund, which has adequate funds for the design portion of the project. Since the project is due to a directive from City Council and not included in the FY2015/16 CIP one-year project list, it is anticipated that construction will occur in early FY2016/17 and be covered under the FY2016/17 CIP project listings and CIP budget.

Recommendation:

Staff respectfully recommends adoption of Resolution 2016-013, Authorizing the City Manager to enter into Professional Service Contract with DKS Associates for Langer Farms Parkway Pedestrian Crossing PS&E.

EXHIBIT A

MEMORANDUM

TO: Bob Galati, City of Sherwood

FROM: Garth Appanaitis, P.E.
Dana Beckwith, P.E., P.T.O.E
Monica Leal, P.E.
Edith Lopez Victoria

DATE: June 12, 2015

SUBJECT: Sherwood On-Call Task 20
SW Langer Farms Parkway Pedestrian Crossing Review P11117-020

This memorandum summarizes the transportation analysis performed to assess pedestrian crossings along SW Langer Farms Parkway between SW Tualatin-Sherwood Road and Century Drive. The purpose of the analysis was to determine if improvements are needed to enhance pedestrian crossing safety along the corridor, determine the potential placement of such a treatment, and to evaluate potential treatment options. The following sections summarize the project background, existing and future conditions and needs, treatment evaluation, and recommendations.

Background

SW Langer Farms Parkway has undergone major changes over the last few years with the extensions to the north and south, new control at major intersections, and development of adjacent properties. While adequate historical safety data has been limited due to the recent of recent changes, a pedestrian was struck and killed earlier this year. There have also been anecdotal reports of near-miss collisions with pedestrians. Given these recent occurrences, the City requested a pedestrian crossing review of the corridor to determine what, if any, additional treatment should be constructed, and where it should be placed.

Analysis Methods

The crossing treatment evaluation was performed following guidance procedures described in the *National Cooperative Highway Research Program* (NCHRP) Report 562,[1] and the *Washington County Approval Process for New Pedestrian Crossings at Mid-Block Locations and Uncontrolled Intersections*,[2] which is Washington County's policy for addressing new pedestrian crossings at uncontrolled

[1] *Improving Pedestrian Safety at Unsignalized Crossings, NCHRP Report 562*, 2006.
[2] Approval Process for New Pedestrian Crossings at Mid-Block Locations and Uncontrolled Intersections, adopted by Resolution and Order No. 10-107, November 23, 2010.

intersections. This analysis considers factor such as crossing distance, crossing frequency, conflicting traffic volumes, and conflicting traffic speeds. Other secondary factors that are not directly included in the methodology were also considered: safety history (including a conflict analysis), roadway geometrics, illumination, and potential sight distance obstructions.

To determine multi-modal traveler characteristics, data was collected for a 16-hour period (6:00 a.m. to 10:00 p.m.) on both a weekday (Thursday, April 16, 2015) and a weekend (Saturday, April 18, 2015). The data collection included vehicle turning movements at the driveway, pedestrian and bicycle activity at the intersection, pedestrian and bicycle midblock crossings north and south of the intersection, and vehicle speed data.

Appendix 1 contains additional details regarding the analysis.

Executive Summary

The analysis considered existing activity in the area (pedestrians, bicyclists, and autos) and assessed potential conflicts and existing conditions. Key components and highlights of the analysis (additional details provided in the appendix) include the following:

<u>Existing Activity</u>

- **Existing Pedestrian and Bicycle Activity** – Data was collected along the corridor for both a weekday and Saturday (6 a.m. to 10 p.m.), which indicated:
    - **Crossing Locations –** Approximately 80 percent of pedestrians/bicycles cross at the driveway for the retail centers (anchored by Target to the west and Walmart to the east) due to the proximity to retail uses and alignment with primary building entrances and internal site sidewalks.
    - **Activity Peaks** – During the pedestrian peak hour (4 p.m. Saturday) there were a total of 35 pedestrians crossing at corridor, including 28 crossing at the driveway. Crossing activity was approximately 50 percent higher on Saturday (365 crossings) than a weekday (251 crossings).
- **Existing Motor Vehicle Traffic Volumes** – There are a high proportion of turning movements at the driveway (particularly the southbound left turn and westbound right turn[3]). Therefore, the total conflicting traffic volume with crossings that occur north of the intersection is approximately double the conflicting volume south of the driveway.
- **Motor Vehicle Speeds** – Speed data collected along SW Langer Farms Parkway indicates an 85th-Percentile speed of 33 mph. The corridor is posted for 25 mph.

[3] Approximately 315 southbound left turn vehicles and 250 westbound right turn vehicles, which is lower than the totals estimated in the Langer Farms Phase 7 Transportation Impact Analysis (430 and 285, respectively).

- **Vehicle Gaps** – Approximately 19 seconds are required to cross the roadway. On average, pedestrians have more than one crossing opportunity every minute during the peak hour.

Safety Review and Analysis

- **Collision History** – One fatal pedestrian collision has occurred during the last year, and two other collisions have been reported since September 2014. The number of changes to the study area (extension of Langer Farms SW Parkway and adjacent development) have limited the amount of historical data.
- **Conflict Analysis** – A conflict analysis was performed to supplement the collision history. One near-miss incident was observed during an 8-hour period, which included a vehicle braking suddenly in the southbound direction to avoid a pedestrian at the driveway.
- **Illumination** – Current lighting meets recommended light levels for the area type and activity levels.
- **Topography and Sight Distance** – Sufficient sight distance exists for the existing corridor speeds of 35 mph

Improvement Evaluation

- **National Cooperative Highway Research Program (NCHRP) Evaluation** – Based on existing activity levels and speeds, a marked crossing is warranted.
- **Other Considerations** – Based on considerations beyond the NCHRP methodology, an enhanced crossing treatment of a rectangular rapid flashing beacon (RRFB) could address the following:
    - There is a recent history of collisions at this location.
    - Following installation, drivers may eventually tune out advanced warning signs that indicate a pedestrian crossing. An RRFB improves driver compliance to approximately 80 percent[4].
    - Given the existing corridor vehicle speeds, a marked crossing alone may present additional safety concerns based on national guidance[5].

[4] *Memorandum: MUTCD – Interim Approval for Optional Use of Rectangular Rapid Flashing Beacons (IA-11),* USDOT, July 16, 2008. Excerpt: "The data show very high rates of motorist "yield to pedestrians" compliance, mostly in the high 80s to close to 100 percent, in comparison to far lower rates (in the 15 to 20 percent range) for standard beacons. The very high yielding rates are sustained even after 2 years in operation, and no identifiable negative effects have been found."

[5] Charles V. Zegeer, J., et. al. Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations: Executive Summary and Recommended Guidelines. FHWA-RD-01-075. USDOT. February 2002

Analysis and Recommendation

Figure 1: Sample RRFB Sign

- **Crossing Location –** A marked crossing should be located on the south side of the retail driveway to serve the popular crossing (30 during peak hour and nearly 300 daily) location that is aligned with store entrances and generally connecting to the site sidewalk on the southeast corner. In addition to crossing demand at this location, an improvement on the south side of the driveway would minimize vehicle conflicts.
- **Installation of a RRFB** - based on guidance and considering that a fatal pedestrian collision has already occurred, marking and signing a crosswalk alone is insufficient and can potentially increase risk. Thus the installation of a RRFB with marked crosswalk and signing is recommended. Figure 1 shows a sample RRFB, while two videos are also provided[6] to demonstrate actual operation. The estimated cost for these combined improvements (including preliminary engineering and design, materials, and construction) is approximately $100,000.
- **Speed Feedback Signs** – Beyond speed enforcement along the corridor, an option to mitigate vehicle speeding is the installation of radar changeable speed feedback signs along SW Langer Farms Parkway.

[6] Video 1: ODOT animation demonstrating use of RRFB - https://www.youtube.com/watch?v=ASTh-OY7tQw ; Video 2: Vendor video demonstrating real-world use: https://www.youtube.com/watch?v=KBltx0Argag

Appendix 1 - Analysis

The analysis appendix contains additional details regarding the analysis for the following sections:

Study Area 5

Existing Conditions 6

Future Volumes 17

Crossing Treatment Evaluation 17

Appendix 2 - Data 22

Study Area

This study focused on reviewing conditions and evaluating options to enhance bicycle and pedestrian crossing safety on SW Langer Farms Parkway between SW Tualatin-Sherwood Road and SW Century Drive. SW Langer Farms Parkway runs north-south between OR 99W and Oregon Street. Between SW Tualatin-Sherwood Road and Century Drive the corridor is lined with commercial land uses on both sides of the street. Pedestrian generators in the immediate vicinity include big box retail stores, high turnover restaurants, and coffee shops. Residential uses are located north of Century Drive Avenue and west of SW Langer Farms Parkway.

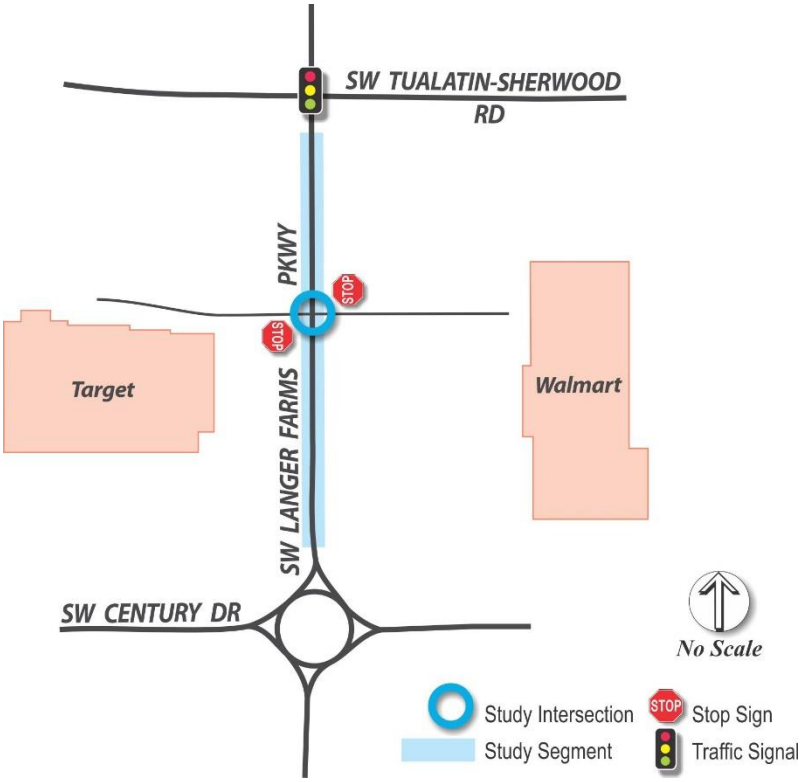


Figure 2: Study Area

Based on a review of existing activity generators and potential crossing locations along the corridor, the study further focused on the retail center driveway, because this intersection:

- connects the two commercial areas on either side of the corridor (and is aligned with the main entrances of the major big box retailers),
- is located near the midpoint of the study segment, and

- is a key location used by pedestrians to travel between the two commercial areas (as verified by the count data).

The study location was further refined to focus on the south leg of the intersection, which aligns with both the front entrance to the retail storefronts, and has continuous sidewalk on both sides of the street (See photo 1). While this intersection is serves approximately 25 pedestrian crossings during peak hours, there are no marked crosswalks or signing to alert drivers of pedestrian crossings at this intersection. The nearest marked crossing for east-west pedestrian and bicycle travel is at the existing signalized intersection of SW Tualatin-Sherwood Road/SW Langer Farms Parkway, approximately 500 feet to the north, and the roundabout located at SW Century Drive, approximately 700 feet to the south.

Existing Conditions

SW Langer Farms Parkway is a four-lane[7] collector and the retail driveways are private driveways. There are no roadway bike lanes or transit services along SW Langer Farms Parkway. Pedestrian and bicycle facilities include a continuous sidewalk on the west side of the corridor, and a 12-foot shared-use path east of SW Langer Farms Parkway, which accommodates bikes in both directions. This path runs along SW Langer Farms Parkway from just east of OR99 to SW Oregon Street.

The intersection of SW Langer Farms Parkway/driveway is two-way stop controlled on the driveway approaches (Figure 2). Sidewalks are present with curb ramps and yellow tactile warning surfaces at all four corners of the intersection. Curb ramps on the east corners do not align with connecting curb ramps on the west corners. The curb ramps on the east corners have been designed to facilitate north-south pedestrian walking only (Figure 3).

[7] Two lanes southbound travel lanes, one Two-way Left-turn Lane and one northbound travel lane.

Figure 3: Existing Curb Ramp Alignment at Driveway (at Southeast Corner Looking West)

Existing Pedestrian and Bicycle Volumes

Sixteen-hour multi-modal (vehicular, pedestrian, and bicycle) turning movement counts were obtained at the driveway, on a weekday and a weekend between 6 a.m. and 10 p.m.[8] During the same time periods, pedestrian and bicycle counts were obtained to quantify mid-block crossing activity along SW Langer Farm Parkway north and south of the driveway[9].

Based on the 16-hour counts obtained at the intersection, the maximum combined pedestrian and bicycle activity crossing SW Langer Farm Parkway occurred during the weekend with a total of 136 pedestrians and 34 bicycles. Figure 4 shows the combined bicycle and pedestrian crossing activity along the corridor for each hour during the 16-hour period on Thursday and Saturday. Each day, the midblock crossings represented approximately 20 percent of the total crossing activity between 6 a.m. and 10 p.m., with the remainder of crossings occurring at the driveway.

[8] Turning movement counts conducted on Thursday, April 16, 2015 and Saturday, April 18, 2015.

[9] There were a total of 22 (north) and 32 (south) pedestrian and bicycles crossing during the weekday, and 35 (north) and 44 (south) during the weekend.

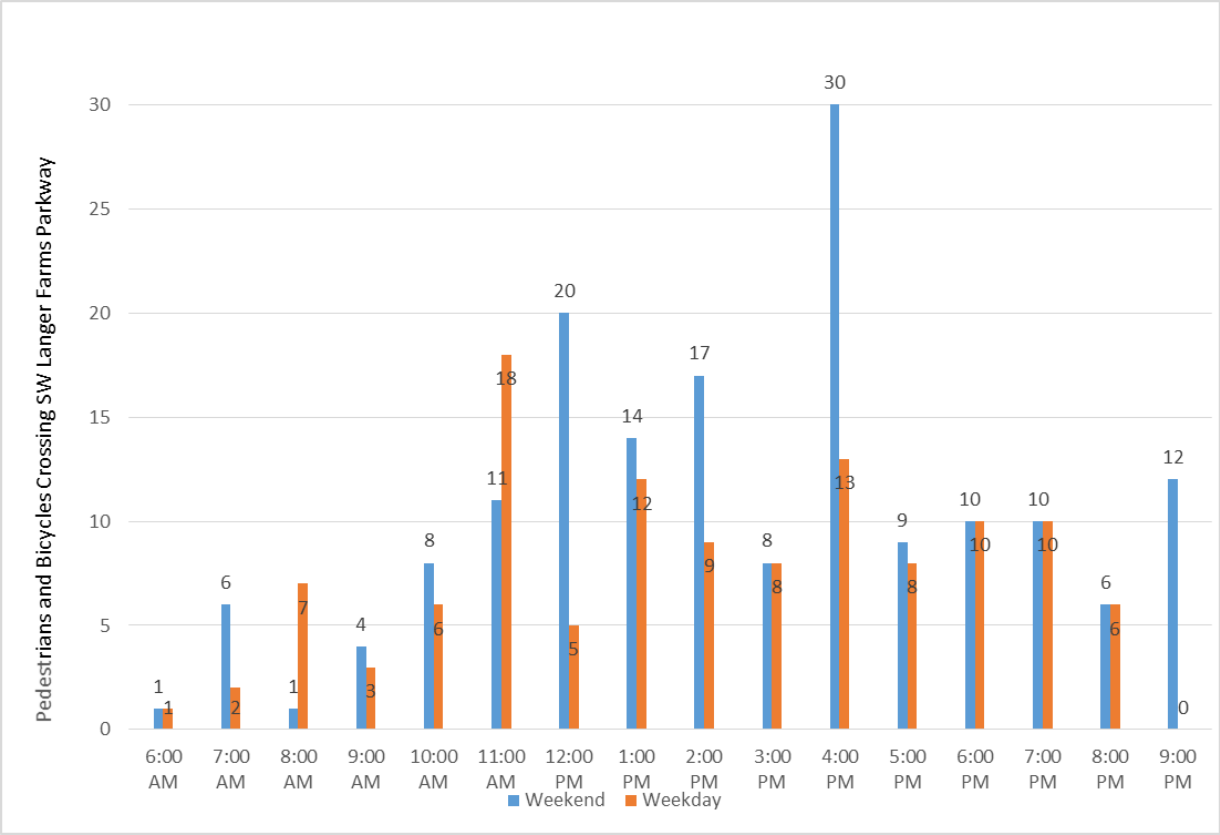


Figure 4: Pedestrian and Bicycle Crossing Activity by Hour

The pedestrian peak hour occurred from 4:00 p.m. to 5:00 p.m. on Saturday with 28 pedestrians and two bicyclists crossing SW Langer Farms Parkway. Figure 5 shows traffic volumes and pedestrian volumes during the pedestrian peak hour. Detailed volume reports are provided in Appendix 2.

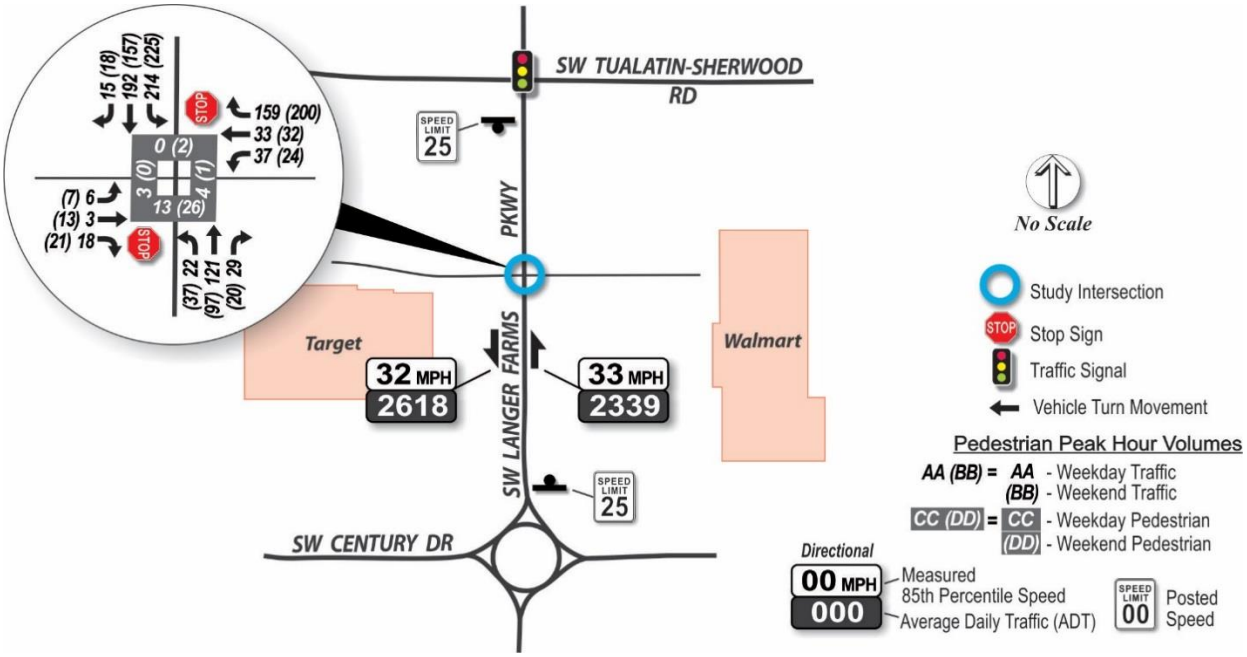


Figure 5: Existing Volumes during the Pedestrian Peak

Existing Vehicular Volume

To determine daily traffic characteristics, 24-hour directional counts were obtained along SW Langer Farms Parkway south of the driveway.[10] The total daily traffic volume is about 5,000 vehicles (2,339 northbound, 2618 southbound – Figure 5). The 16-hour turn movement counts indicated that the highest vehicle activity at the driveway intersection occurred during the weekend. The vehicle peak hour occurred from 1:00 PM to 2:00 PM during the weekend with an entering volume of 1,066 motor vehicles, and from 12:25 PM to 1:25 PM during the weekday with an entering volume of 900 motor vehicles (Figure 5).

As indicated in Figure 5, the southbound left turn movement and westbound right turn movement are typically the highest motor vehicle movements at the intersection. For this reason, the traffic volumes along SW Langer Farms Parkway are higher north of the driveway than south of the driveway. Over the 16-hour period, traffic volumes north of the driveway were approximately double [11] those south of the driveway. This is notable since the busy movements (southbound left and westbound right) would both

[10] A location south of the driveway was selected to analyze through traffic speeds along the corridor, while minimizing the collection of speed data for turning vehicles at the driveways.

[11] From 6 a.m. to 10 p.m., 8,569 vehicles north of intersection and 4,734 to south on Thursday, and 8,795 vehicles north of the intersection and 4,428 south of the intersection on Saturday.

conflict with pedestrian crossings on the north side of the intersection but would not conflict with pedestrian crossings on the south side. Detailed volume reports are provided in Appendix 2.

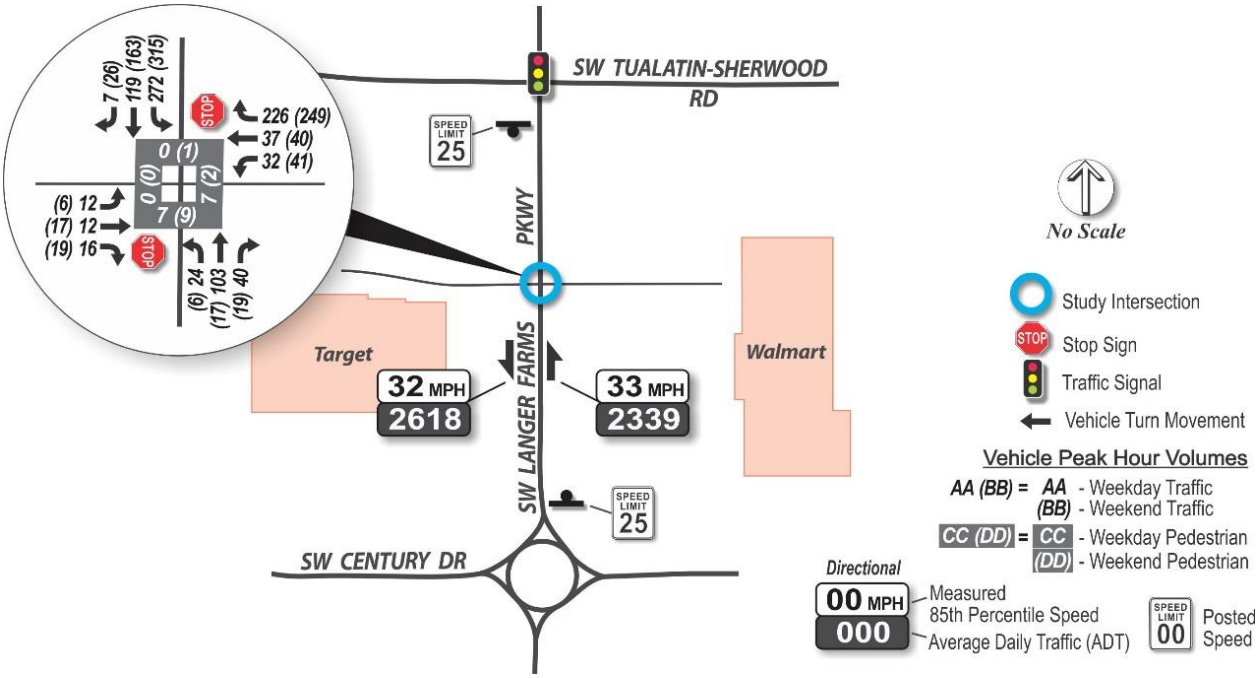


Figure 6: Existing Volumes during the Vehicle Peak

Vehicle Speeds

SW Langer Farms Parkway has a posted speed of 25 miles per hour (mph). Based on the guidance in the 2009 *Manual on Uniform Traffic Control Devices* (MUTCD), the posted speed limit should be within 5 mph of the observed free-flow 85th-percentile speed. Speed data collected[12] on SW Langer Farms Parkway between the retail driveway and Century Drive Avenue indicated the 85th percentile speed to be 33 mph northbound and 32 mph southbound (See Figure 5). Vehicles are traveling up to eight miles per hour (32%) faster than the posted speed, and speeding can foster unsafe conditions for bicycle and pedestrian crossing the street. An option to alert drivers of speeding would be to install radar changeable speed limit signs, see the recommendations section. Detailed speed reports are provided in Appendix 2.

Gap Analysis

In order to determine if there are sufficient vehicle gaps for pedestrians to cross SW Langer Farms Parkway, a gap analysis was conducted during the pedestrian and vehicle peak hours. Pedestrians have to travel a distance of 55 feet to cross SW Langer Farms Parkway from curb to curb. At an estimated

[12] Speed survey performed on Thursday April 16, 2015

speed of 3.5 feet per second, and three seconds of startup time, a vehicle gap equal to or greater than 19 seconds is needed for pedestrians to comfortably cross. The tube count data was analyzed to determine the duration of vehicle gaps. As listed in Table 1, there are more than 60 gaps equal to or greater than 19 seconds during both the pedestrian and the vehicle peak hours. On average there will be at least one crossing opportunity every minute for pedestrians to cross SW Langer Farms Parkway during the peak hour.

Table 1: Gap Analysis Summary

Time	Gaps Greater ≥ 19 Seconds	Average Crossing opportunities
Pedestrian Peak hour	68	More than one per minute
Vehicle Peak hour	67	More than one per minute

Collision Analysis

A review of the collision history was conducted at the intersection of SW Langer Farms Parkway/retail driveway to identify traffic safety concerns. Collision data was obtained from the Oregon Department of Transportation (ODOT), the City of Sherwood Police Department and the Washington County Sheriff's Department, covering the period from January 20, 2012 through January 20, 2015. While this is the most recent data available, it is noted that the following changes have occurred in the study area over the last several years that have had the potential to disrupt existing driver behavior, circulation, or other trends:

- February 2011 to March 2012 – SW Langer Farms parkway extended south to Oregon Street from existing terminus at retail access
- November 2013 to July 2014 – SW Langer Farms Parkway extended north to OR 99W from existing terminus at SW Tualatin-Sherwood Road
- July 2014 – Traffic signal installed at the intersection of SW Langer Farms Parkway and SW Tualatin-Sherwood Road
- August 2014 – Parkway Village at Sherwood retail center holds grand opening

Recognizing the above changes to the transportation system, the data was analyzed to determine if any trends were present. There were a total of three collisions at the intersection, including a fatal collision involving a pedestrian at nighttime. All collisions occurred in the time frame from November 2014 to January 2015, and no trends were identified. Table 2 summarizes the collisions history and details are provided in Appendix 2.

Table 2: Collisions Summary at SW Langer Farms Parkway/Retail Driveway

Date	Time	Involved with	Collision Type	Cause	Description
9/19/2014	4:00 PM	Vehicle-Vehicle	Angle	Failure to yield the right-of-way	Driver crossing from east to west retail centers
12/18/2015	10:00 PM	Vehicle-Pedestrian	Pedestrian	Pedestrian run into the street	500' South of SW Tualatin Sherwood Road
1/20/2015	3:45 PM	Vehicle-Vehicle	Angle	Unlawful/ Unsignaled turn	Turning from SW Langer Farms Parkway into east retail center

Vehicle Conflict Analysis

Given the recent changes to the transportation system identified in the previous section, a vehicle conflict analysis[13] was performed to supplement the historical collision data and identify erratic driver behavior and/or near-misses of vehicle-pedestrian collisions at the intersections of SW Langer Farms Parkway/driveway. A vehicle conflict analysis was designed as an engineering tool to assess road-user risk, accounting for driver behavior, roadway conditions and the traffic environment at the moment of exposure. A vehicle conflict analysis provides additional information to supplement collision data with qualitative information of driver-pedestrian behavior and environment dynamics not included in the NCHRP Report 562 analysis, as stated above.

Traffic Conflict Results

There was one observed near-miss incident at the study intersection during the eight hours that were observed over two days. One pedestrian was pushing a second pedestrian in a wheelchair - when all vehicles had cleared the intersection, the pedestrians proceeded to cross the street at the south side of the intersection. A vehicle traveling in the southbound through lane did not anticipate the need to stop, when the pedestrians became visible (which may have been partially obscured by southbound left turn vehicles queued in the center turn lane). The driver had to brake abruptly in order to avoid a collision with the pedestrians, see Figure 7 for conceptual diagram.

[13] Vehicle Conflict Analysis, Thursday April 30, 2015 and Saturday, Saturday May 2, 2015. Guidance based on *Traffic Conflict Procedures Manual* (1996), G.D. Hamilton Associates.

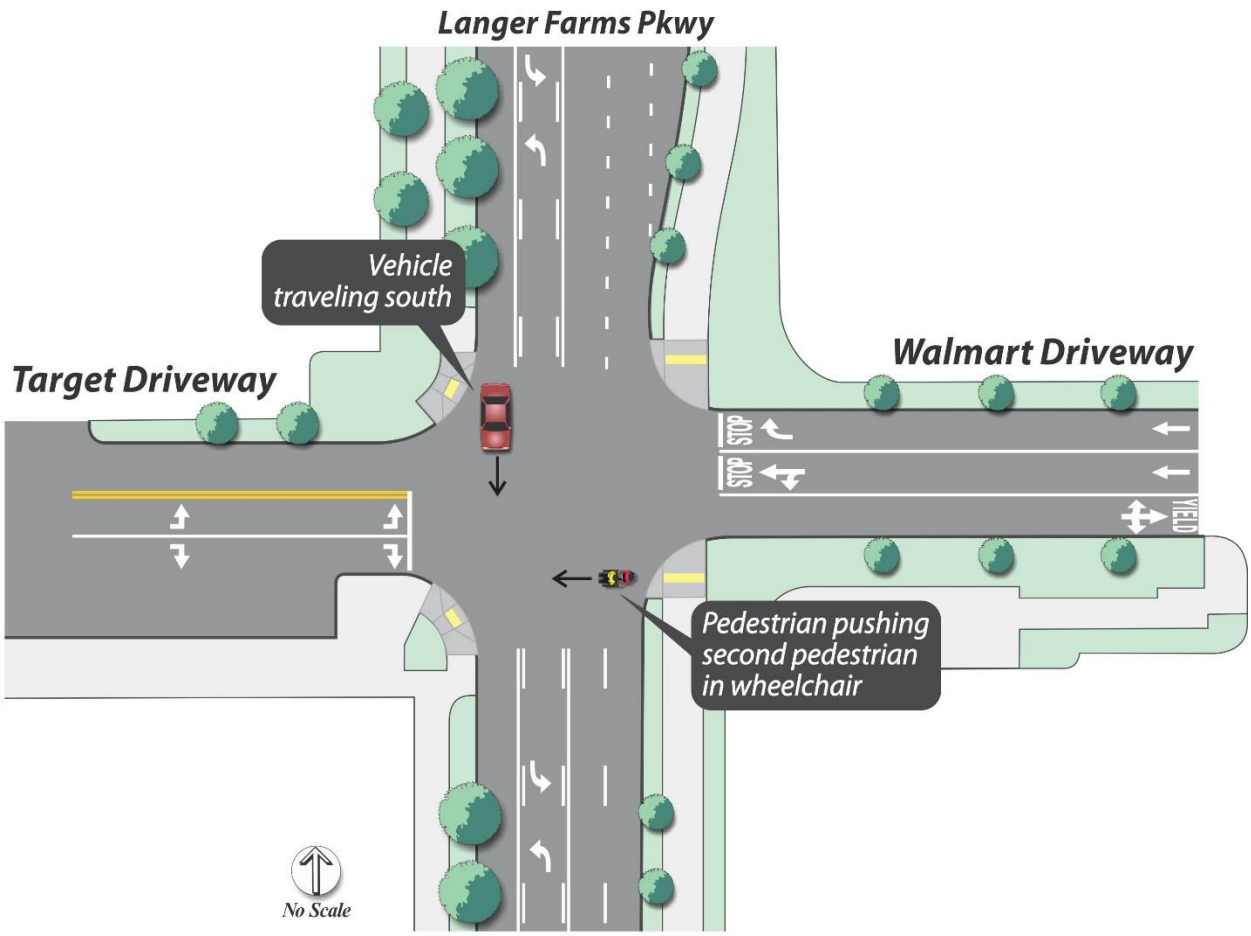


Figure 7: Vehicle Conflict Analysis of "Near Miss"

General Observations

In addition of the observed near-miss incident, the following general observations were noted:

- Pedestrians typically wait for vehicle gaps.
- Two separate pedestrians (needing to cross from one side of the driveway to the other) were observed walking to the intersections of SW Sherwood-Tualatin/SW Langer Farms Parkway and SW Langer Farms Parkway/Century Drive Avenue to cross the SW Langer Farms Parkway, rather than crossing at the driveway.
- A number of pedestrian run as they cross SW Langer Farms Parkway because they may anticipate that vehicles will not yield the right-of-way.

Issues

The following is a list of issues identified during the traffic conflict analysis:

- Visibility of the east half of the intersection can be obstructed to vehicles traveling in the southbound through lanes by vehicles queued on the two-way left turn lane. As southbound left

turning vehicles merge into the turn lane, southbound through vehicles speed past merging vehicles and do not anticipate pedestrians.

- Some vehicles yield the right-of-way if there was a pedestrian waiting on the curb ramps. Other times pedestrians that were already in the road had to take a step-back into the sidewalk because vehicles did not grant the right-of-way.
- The majority of pedestrians crossed at the south crosswalk between the southwest and southeast corner. Most pedestrians walking from the southwest to the southeast corner cut across the sidewalk buffer on the southeast corner because the two curb ramps are not aligned vertically.

Illumination

A lighting analysis was performed at the intersection of SW Langer Farms Parkway/driveway, and throughout the stopping sight distance approaches (245 feet north and south of the intersection along SW Langer Farms Parkway). Roadway lighting is provided along SW Langer Farms Parkway with post top style luminaires (200 Watt) mounted at approximately 18 feet. The lighting analysis followed City of Sherwood Lighting Standards[14] for roadway lighting, assuming low pedestrian conflict[15] during nighttime/dark hours. The city of Sherwood does not have a standard for intersection light levels, so the crosswalk lighting was evaluated based on light levels recommend in the *Illuminating Engineering Society of North America (IESNA) RP-8-00*[16] for a collector/local intersection. As listed in Table 3, existing light levels meet the standards (average maintained illuminance is achieved and uniformity is within required thresholds) at the south crosswalk of the intersection and at the approaching stopping sight distance roadway section.

[14] City of Sherwood Engineering Design and Standard Details Manual (2010). Section 350-1 *Street Illumination.*

[15] When there are less than ten pedestrians per hour crossing the street during dark hours.

[16] (IESNA) Illuminating Engineering Society of North America, light level values published on the RP-8-00 American National Standard Practice for Roadway Lighting, 1999.

Table 3. Lighting Summary

Roadway	City of Sherwood Standards[17]	IES RP-8 Recommended		Measured Light Levels	
	Average Maintained Illuminance (Fc)	Average Maintained Illuminance (Fc)	Uniformity (Avg/Min)	Average Maintained Illuminance (Fc)	Uniformity (Avg/Min)
Sight Distance Section	0.6	-	-	1.13	1.88
Proposed Crosswalk	-	1.0	4	1.29	1.61

Figure 8 and 9 provide samples of the illumination along the corridor and at the proposed crosswalk.

Figure 8: South Crosswalks Approach (South of the Driveway, Looking North)

[17] The City of Sherwood does not have uniformity standards.

Figure 9: South Crosswalk (Southwest Corner, Looking East)

Sight Distance

There is a clear line of sight in both directions along SW Langer Farms Parkway at the SW Langer Farms Parkway/driveway intersection. A minimum of 335 feet of clear sight distance is required by the City of Sherwood, based on the 85th percentile speed of 35 miles per hour.[18] In both the northbound and southbound travel directions, there is over 335 feet of sight distance. There is a slight vertical curve along SW Langer Farms Parkway sloping up from SW Tualatin- Sherwood Road to the driveway (Photo 4). There are also

Figure 10: Vertical Curve on Corridor (North of Driveway, Looking South)

[18] City of Sherwood Engineering Design and Standard Details Manual (2010). Section 210-5 *Intersection Sight Distance Policy.*

trees along a curb-tight planter strip on both sides of the street, however these trees are well-maintained and neither the vertical curve nor the trees block visibility.

Future Volumes

Growth potential for pedestrian and vehicle travel demands was estimated to determine if the needs for crossing treatments would change in the future. Year 2035 travel forecasts were prepared based on existing volume data, and future activity growth potential, coupled with the 2035 Sherwood travel demand model developed for the Transportation System Plan (TSP) update.

Land directly adjacent to the corridor is generally developed, with some additional pads remaining in Parkway Village at Sherwood on the east side of the corridor. Additional undeveloped parcels exist north of Tualatin-Sherwood Road and South of Century Drive, but pedestrian traffic activity for these areas is assumed to use crossings north or south of the study area. While pedestrian activity may further increase with additional development in Parkway Village at Sherwood, future activity levels will likely be impacted by overall population growth and activity in Sherwood. The TSP indicated that the greater Sherwood area (including surrounding area currently outside the city) would grow by approximately 75 percent by year 2035. In order to examine the sensitivity for future needs, the overall pedestrian activity was assumed to increase 50 percent from existing levels. Based on vehicle growth projections in the Sherwood travel demand model, vehicle traffic along the corridor is estimated to increase 20 percent based on future traffic patterns and circulation.

Crossing Treatment Evaluation

The crossing treatment evaluation was performed following guidance procedures described in the *National Cooperative Highway Research Program* (NCHRP) Report 562,[19] and the *Washington County Approval Process for New Pedestrian Crossings at Mid-Block Locations and Uncontrolled Intersections*,[20] which is Washington County's policy for addressing new pedestrian crossings at uncontrolled intersections.

NCHRP Crossing Analysis

The NCHRP 562 report provides Guidelines for Pedestrian Crossing Treatments, in the form of two worksheets (Appendix 2), which lead to one of a series of crossing treatments. Based upon input variables such as major street volume, pedestrian volumes, crossing distance, pedestrian walking speed

[19] Improving Pedestrian Safety at Unsignalized Crossings, NCHRP Report 562, 2006.

[20] Approval Process for New Pedestrian Crossings at Mid-Block Locations and Uncontrolled Intersections, adopted by Resolution and Order No. 10-107, November 23, 2010.

and expected motorist compliance at pedestrian crossings, one of the following treatments is recommended:

- Crosswalk – crossing marked with pavement markings only and supplemental signing
- Enhanced and/or high visibility – devices and treatments that enhance the visibility of the crossing and the ability of pedestrians to cross the street. Examples include warning signs, median refuge islands, or added pavement markings.
- Active when present – devices that display a warning only when pedestrians are present or actually crossing the street. Examples include flashing amber beacons, rectangular rapid flashing beacons (RRFB), or pedestrian crossing flags.
- Red signal or beacon – devices that display a circular red indication to motor vehicles. Examples include half signals and pedestrian hybrid beacons (PHBs).
- Traffic signal – standard traffic signal control devices on all approaches.

Factors such as pedestrian crossing activity, crossing distance, traffic volumes, and vehicle speeds are all considered in determining the recommended treatment. One of the most influential factors in determining treatment type is the number of pedestrian crossing the major roadway and conflicting vehicles, during the peak hour period. For this analysis it was estimated that 32 pedestrian would cross SW Langer Farms Parkway during the pedestrian peak hour if a crossing was provided[21].

Result for Existing Conditions: the methodology indicates that a marked crosswalk is recommended under existing conditions, and per MUTCD Guidance a crosswalk should be accompanied with supplemental warning signs. See Figure 11 for a conceptual design of a crosswalks with supplemental warning signs.

[21] The 32 crossings include 28 existing crossings, and four of the seven mid-block crossing. It is estimated that at least 50 percent of mid-block crossings will consolidate at the crosswalk, if provided.

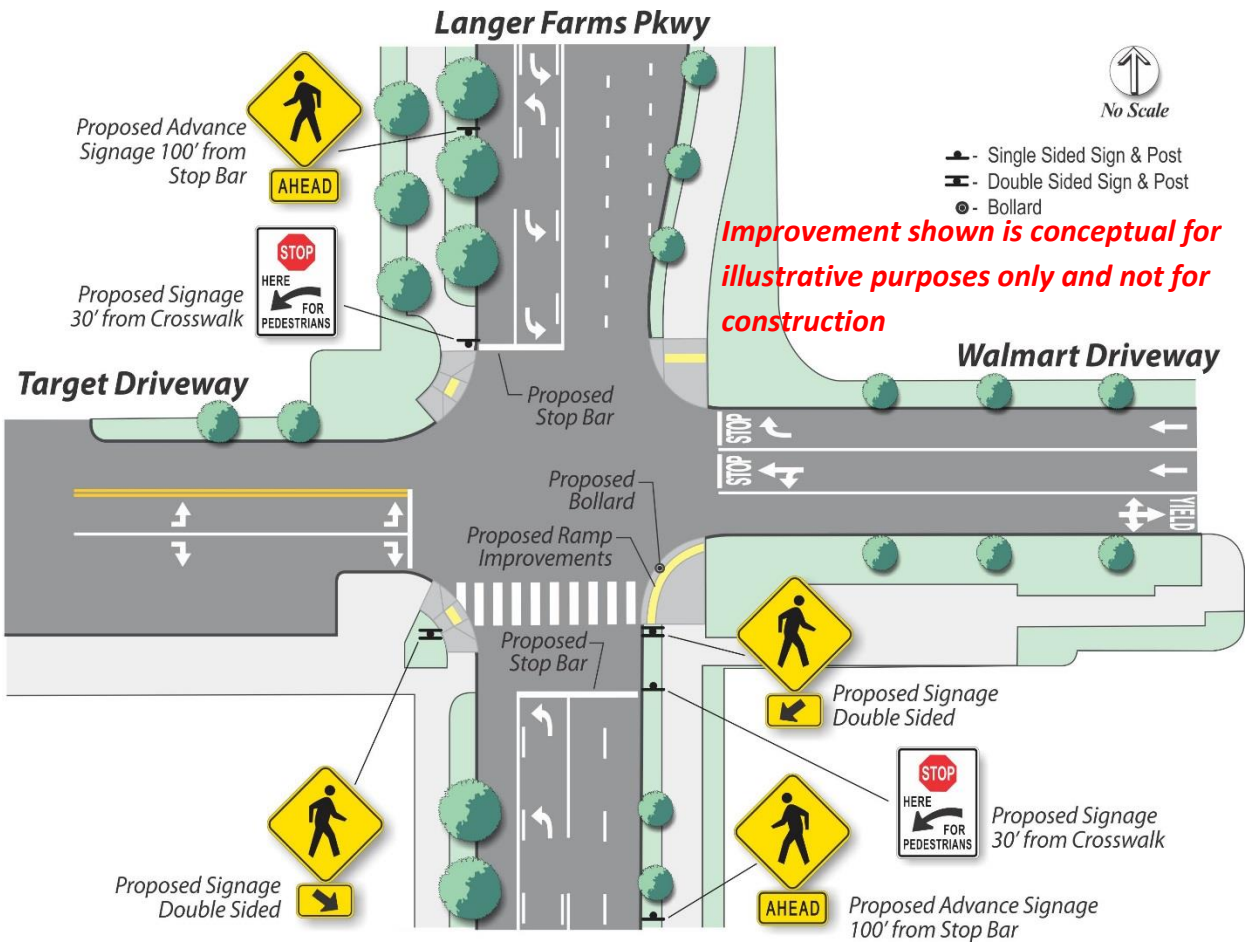


Figure 11: Crosswalk with Warning Signs – Conceptual Design

Result for Future Conditions: a marked crosswalk would also be triggered under future demand conditions, even as the number of conflicting vehicles (450) and pedestrians (50) increase along SW Langer Farms Parkway, reducing the number of crossing opportunities for pedestrians.

ADT and Speed Guide

Washington County's Policy[22] to evaluate crossings at uncontrolled intersections has adopted guidance from the *Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations: Executive Summary and Recommended Guidelines,*[23] a paper based on several studies that establishes criteria

[22] Approval Process for New Pedestrian Crossings at Mid-Block Locations and Uncontrolled Intersections, adopted by Resolution and Order No. 10-107, November 23, 2010.

[23] Charles V. Zegeer, J., et. al. Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations: Executive Summary and Recommended Guidelines. FHWA-RD-01-075. US Department of Transportation. February 2002.

used to determine what type of crossing treatment is most appropriate based on various roadway speed and volume combinations, see Appendix 2 for Decision Table.

SW Langer Farms Parkway carries over 5,000 ADT (average daily traffic), it was an 85th percentile speed of 33 mph northbound and 32 mph southbound, and it had four lanes without raised medians. The guide indicates category P, which reads as follows:

> *P= Marked crosswalks alone are insufficient, since pedestrian crash risk may be increased due to providing marked crosswalks alone. Consider using other treatments, such as traffic-calming treatments, traffic signals with pedestrian signals where warranted, or other substantial crossing improvement to improve crossing safety for pedestrians.*

Result: Marked crosswalk is insufficient. Based on ADT and speed guidance and considering that a fatal pedestrian collision has already occurred, marking and signing a crosswalk alone is insufficient and can potentially increase risk. Thus the installation of a Rectangular Rapid Flashing Beacon with marked crosswalk and signing is recommended. Figure 12 includes a conceptual design of a RRFB.

An additional recommendation to mitigate vehicle speeding is the installation of radar changeable speed limit signs along SW Langer Farms Parkway.

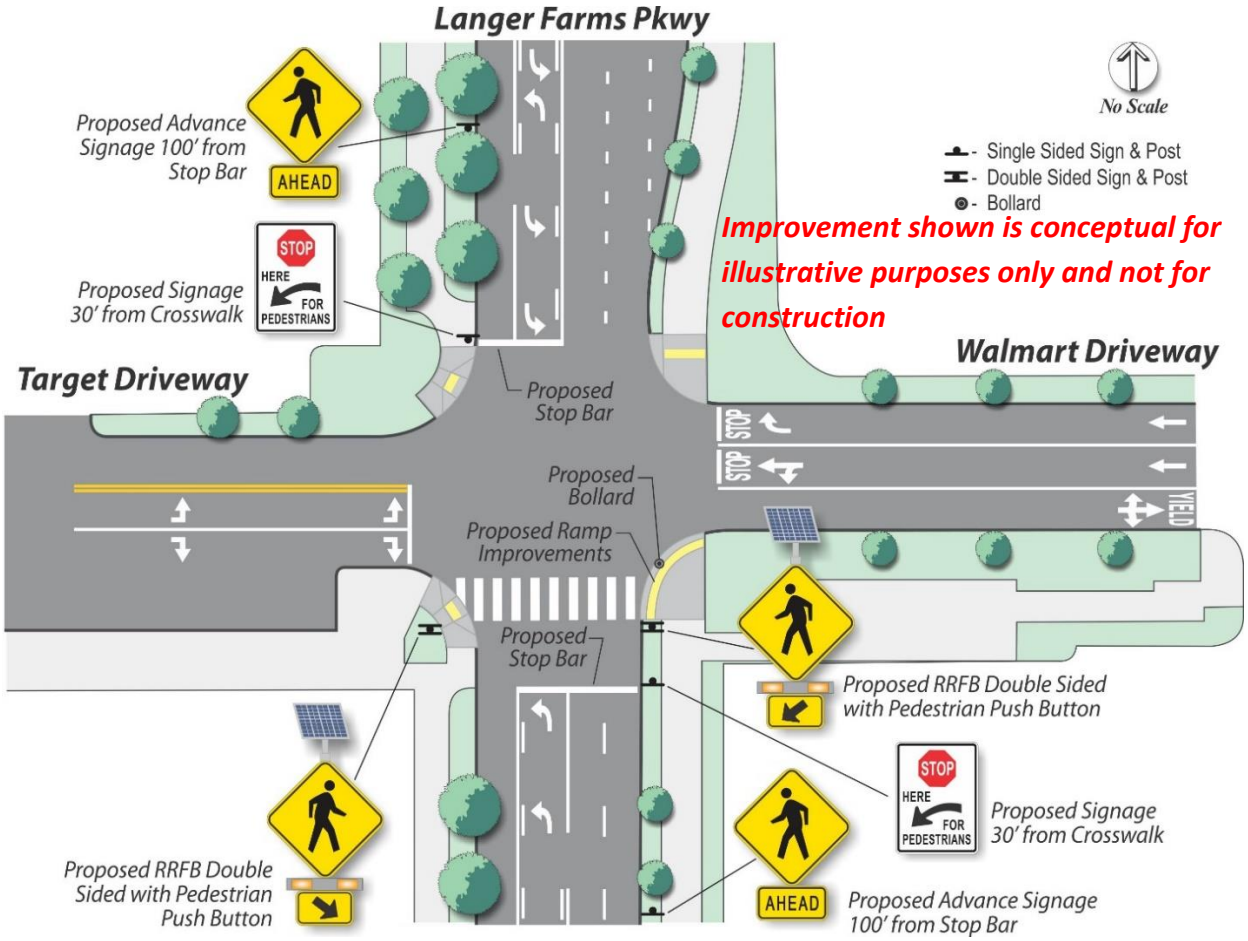


Figure 12: Rectangular Rapid Flashing Beacon – Conceptual Design

Construction Cost

As part of the evaluation process, approximate construction cost estimates were developed for both options, the crosswalk with warning signing and the RRFB. Both options would require pedestrian curb ramps connecting to the crosswalk to be ADA[24] compliant and the restriping of the two-way left turn lane, see Figures 11 and 12. The single ramp on the southeast corner would have to be extended or replaced with dual ramps to facilitate east-west connection. The following items were considered as part of the cost estimating process:

- Construction labor costs
- Flasher equipment

[24] Americans with Disabilities Act of 1990

- Signing and pavement markings
- Civil improvements
- Temporary traffic control
- Engineering design fees

The costs do not include any major civil improvements beyond ADA curb ramps, or right-of-way acquisition not anticipated. Based on the items discussed previously, the approximate construction costs for each option are as shown in Table 4 and details are provided in Appendix 2.

Table 4. Cost Summary of Options

Option	Expected Driver Compliance	Construction Costs	Impacts to Circulation	Pros	Cons
Option 1 - Crosswalk with signing	Medium	$20,000	Minimal	Low cost and less maintenance	Frequent drivers can become accustomed to seeing the crosswalks and might not look out for pedestrians
Option 2 - RRFB with Crosswalk and Signing	High	$100,000	Minimal	Provides active warning to drivers	Higher cost and maintenance

Appendix 2 - Data

The following items are attached as appendix material:

- Appendix 2A – Count Data
- Appendix 2B – Speed Data
- Appendix 2C – Collision Details
- Appendix 2D – NCHRP Spreadsheets
- Appendix 2E – Cost Estimates

APPENDIX 2A

COUNT DATA

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

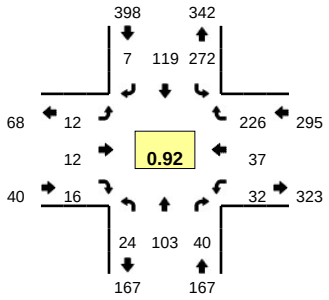
LOCATION: Langer Farms Pkwy -- Driveway

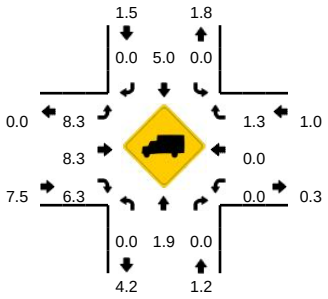
CITY/STATE: Sherwood, OR

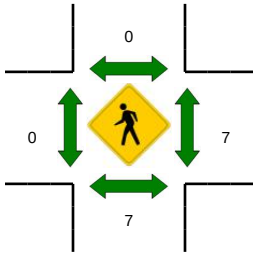
QC JOB #: 13346205

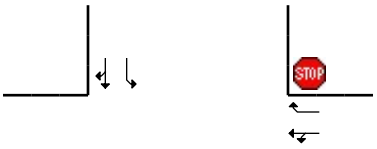
DATE: Thu, Apr 16 2015

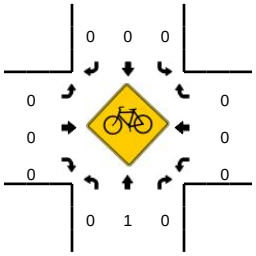
Peak-Hour: 12:25 PM -- 1:25 PM
Peak 15-Min: 12:25 PM -- 12:40 PM

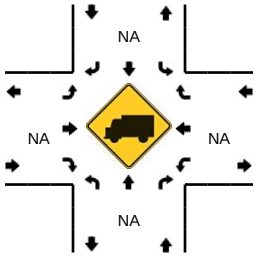


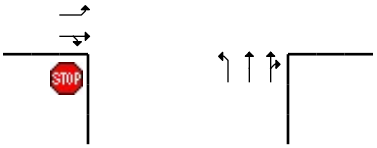


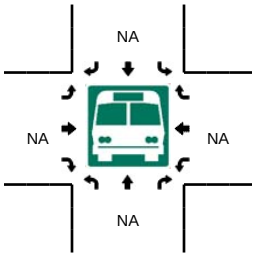












5-Min Count Period Beginning At	Langer Farms Pkwy (Northbound)				Langer Farms Pkwy (Southbound)				Driveway (Eastbound)				Driveway (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:55 AM	1	5	2	0	24	13	1	0	1	1	2	0	1	2	14	0	67	759
12:00 PM	3	4	4	0	22	9	1	0	0	0	1	0	2	4	12	0	62	766
12:05 PM	0	7	5	0	21	9	1	0	0	1	1	0	4	1	16	0	66	775
12:10 PM	3	8	2	0	26	9	1	0	1	2	3	0	2	1	10	0	68	787
12:15 PM	1	7	0	0	24	7	1	0	1	4	2	0	6	4	10	0	67	789
12:20 PM	0	13	4	0	25	8	1	0	0	1	1	0	3	3	22	0	81	815
12:25 PM	1	10	2	0	20	7	0	0	2	1	1	0	3	7	32	0	86	846
12:30 PM	1	8	5	0	23	11	0	0	2	1	0	0	3	3	19	0	76	843
12:35 PM	3	14	2	0	32	8	3	1	0	0	2	0	4	1	12	0	82	850
12:40 PM	1	8	5	0	21	5	0	0	2	3	2	0	3	1	21	0	72	856
12:45 PM	2	2	5	0	23	9	1	0	0	3	0	0	5	3	18	0	71	859
12:50 PM	3	7	1	0	21	12	0	0	3	1	1	0	3	2	17	0	71	869
12:55 PM	1	8	3	0	14	19	0	0	0	0	0	0	3	4	18	0	70	872
1:00 PM	1	6	4	0	29	6	0	0	1	1	4	0	1	1	23	0	77	887
1:05 PM	2	13	1	0	20	8	1	0	1	0	0	0	1	1	11	0	59	880
1:10 PM	6	6	2	0	24	12	1	0	1	1	1	0	3	3	18	0	78	890
1:15 PM	1	11	5	0	23	11	0	0	0	0	2	0	1	6	13	0	73	896
1:20 PM	2	10	5	0	21	11	1	0	0	1	3	0	2	5	24	0	85	900
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1:30 PM	3	9	2	0	17	5	1	0	0	1	3	0	1	6	13	0	61	861
1:35 PM	1	9	1	0	22	11	0	0	0	1	1	0	0	2	24	0	72	851
1:40 PM	1	9	2	0	19	6	4	0	1	2	0	0	4	5	16	0	69	848
1:45 PM	4	8	2	0	13	16	0	0	0	2	1	0	4	1	23	0	74	851
1:50 PM	1	8	2	0	14	10	0	0	1	1	3	0	3	0	11	0	54	834

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	20	128	36	0	300	104	12	4	16	8	12	0	40	44	252	0	976
Heavy Trucks	0	0	0		0	4	0		0	0	0		0	0	4		8
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 4/24/2015 9:33 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: Langer Farms Pkwy -- Driveway
CITY/STATE: Sherwood, OR

QC JOB #: 13346205
DATE: Thu, Apr 16 2015

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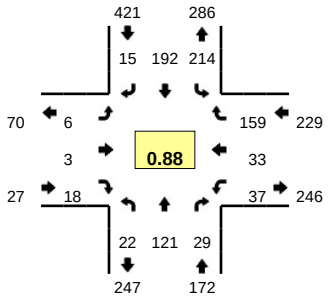

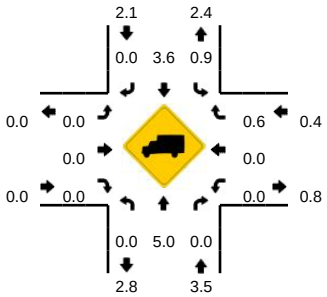

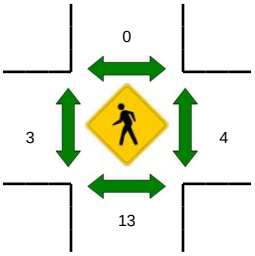

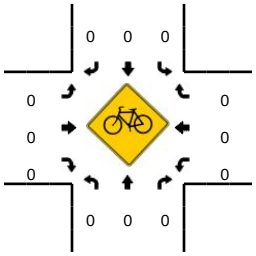

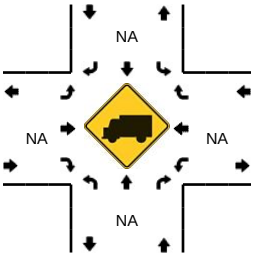

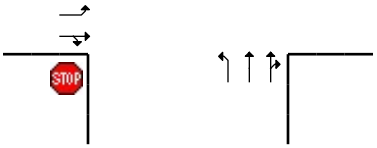

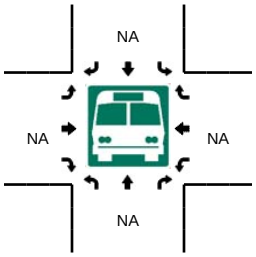

5-Min Count Period Beginning At	Langer Farms Pkwy (Northbound)				Langer Farms Pkwy (Southbound)				Driveway (Eastbound)				Driveway (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:30 PM	1	9	6	0	14	13	2	0	1	2	2	0	2	3	22	0	77	781
3:35 PM	2	7	1	0	16	11	2	0	2	1	1	0	2	3	10	0	58	778
3:40 PM	2	7	3	0	11	17	2	1	2	0	2	0	3	4	7	0	61	800
3:45 PM	4	10	4	0	13	11	1	0	0	0	0	0	1	3	19	0	66	814
3:50 PM	1	11	3	0	14	17	0	0	1	1	2	0	6	2	15	0	73	814
3:55 PM	3	3	5	0	14	14	1	0	0	2	2	0	4	2	7	0	57	819
4:00 PM	1	9	4	0	8	15	2	0	0	2	0	0	1	1	12	0	55	798
4:05 PM	3	7	3	0	14	16	0	0	1	0	0	0	2	4	14	0	64	785
4:10 PM	2	10	2	0	16	17	1	0	1	1	1	0	3	2	14	0	70	785
4:15 PM	1	12	3	0	14	16	2	0	2	0	3	0	0	5	10	0	68	778
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4:30 PM	1	12	3	0	26	13	2	0	0	0	3	0	6	3	13	0	82	812
4:35 PM	1	4	0	0	21	18	2	0	0	0	2	0	4	0	20	0	72	826
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5:10 PM	2	13	1	0	13	15	0	0	0	0	1	0	1	1	12	0	59	857
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5:25 PM	4	12	0	0	9	15	0	0	2	0	1	0	2	2	11	0	58	823

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	132	20	0	284	188	24	0	4	0	24	0	56	24	188	0	968
Heavy Trucks	0	8	0		0	4	0		0	0	0		0	0	0		12
Pedestrians		4				0				0				8			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2015 2:41 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

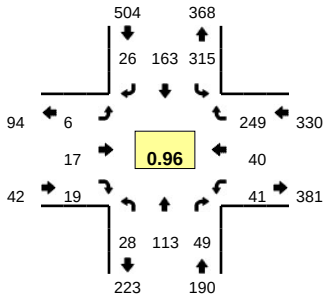
LOCATION: Langer Farms Pkwy -- Driveway

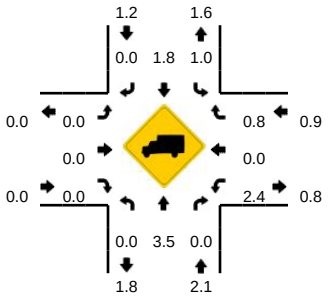
QC JOB #: 13346206

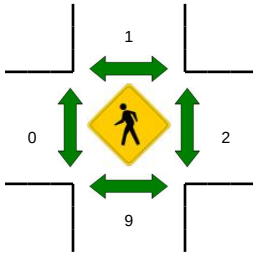
CITY/STATE: Sherwood, OR

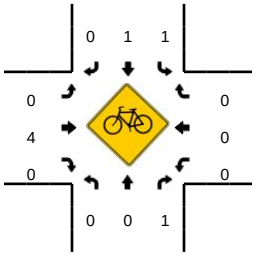
DATE: Sat, Apr 18 2015

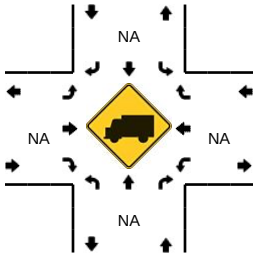
Peak-Hour: 1:00 PM -- 2:00 PM
Peak 15-Min: 1:00 PM -- 1:15 PM

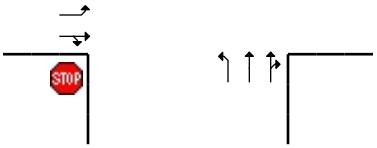


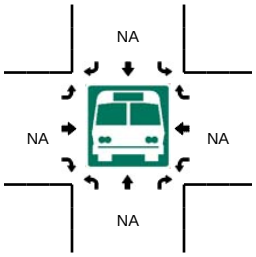












5-Min Count Period Beginning At	Langer Farms Pkwy (Northbound)				Langer Farms Pkwy (Southbound)				Driveway (Eastbound)				Driveway (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:30 PM	2	7	3	0	30	13	0	0	0	2	1	0	0	7	17	0	82	905
12:35 PM	2	9	4	0	27	8	2	0	3	2	4	0	3	1	20	0	85	920
12:40 PM	5	19	2	0	18	7	1	0	1	0	5	0	4	1	24	0	87	936
12:45 PM	3	12	5	0	24	14	0	0	2	0	0	0	3	3	20	0	86	945
12:50 PM	3	11	3	0	28	10	1	0	2	2	1	0	2	2	15	0	80	950
12:55 PM	3	14	1	0	30	12	3	0	0	1	0	0	2	5	23	0	94	985
1:00 PM	1	9	5	0	30	17	3	0	1	2	5	0	1	4	21	0	99	1023
1:05 PM	3	12	2	0	20	15	1	0	0	0	1	0	6	9	26	0	95	1029
1:10 PM	3	11	4	0	20	16	1	0	1	0	1	0	2	4	21	0	84	1037
1:15 PM	4	4	1	0	32	12	0	0	0	1	2	0	3	2	13	0	74	1019
1:20 PM	1	9	6	0	29	14	2	0	0	3	1	0	4	3	17	0	89	1027
1:25 PM	2	10	3	0	24	13	2	0	1	3	3	0	2	2	17	0	82	1037
1:30 PM	4	9	3	0	24	15	4	0	0	2	0	0	2	3	23	0	89	1044
1:35 PM	0	13	4	0	29	12	2	0	0	1	0	0	4	1	18	0	84	1043
1:40 PM	2	8	4	0	27	11	3	0	1	1	1	0	2	2	31	0	93	1049
1:45 PM	2	13	4	0	31	11	3	0	0	0	2	0	7	1	25	0	99	1062
1:50 PM	1	8	10	0	21	11	2	0	1	2	1	0	4	5	16	0	82	1064
1:55 PM	5	7	3	0	28	16	3	0	1	2	2	0	4	4	21	0	96	1066
2:00 PM	1	8	4	0	24	15	3	0	3	4	3	0	5	2	25	0	97	1064
2:05 PM	3	7	2	0	12	2	1	0	1	1	2	0	5	8	25	0	69	1038
2:10 PM	2	15	1	0	25	18	1	0	1	0	3	0	2	3	17	0	88	1042
2:15 PM	0	7	2	0	26	28	2	0	1	0	3	0	2	1	22	0	94	1062
2:20 PM	1	6	3	0	32	11	2	0	0	0	0	0	3	2	21	0	81	1054
2:25 PM	1	11	7	0	25	11	1	0	1	0	1	0	5	7	17	0	87	1059

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	28	128	44	0	280	192	20	0	8	8	28	0	36	68	272	0	1112
Heavy Trucks	0	8	0		8	0	0		0	0	0		4	0	4		24
Pedestrians		16				4				0				0			20
Bicycles	0	0	0		0	1	0		0	2	0		0	0	0		3
Railroad																	
Stopped Buses																	

Comments:

Report generated on 4/24/2015 9:33 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

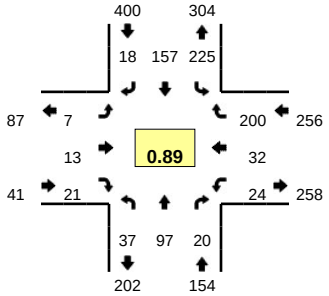
LOCATION: Langer Farms Pkwy -- Driveway

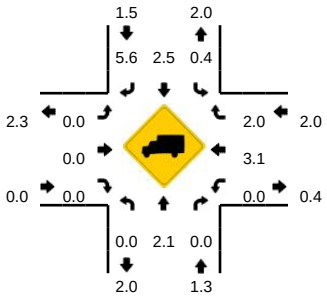
CITY/STATE: Sherwood, OR

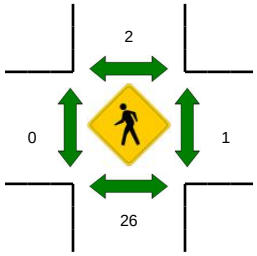
QC JOB #: 13346206

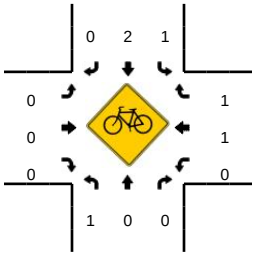
DATE: Sat, Apr 18 2015

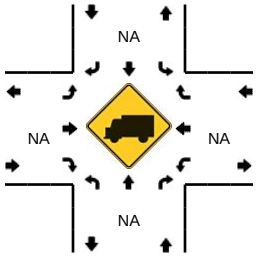
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:20 PM -- 4:35 PM

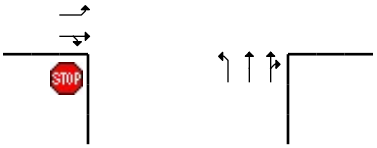


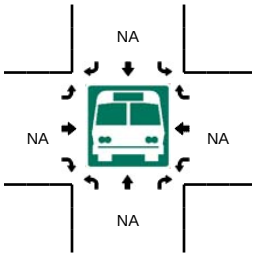












5-Min Count Period Beginning At	Langer Farms Pkwy (Northbound)				Langer Farms Pkwy (Southbound)				Driveway (Eastbound)				Driveway (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:30 PM	2	6	2	0	24	16	1	1	1	2	3	0	4	3	12	0	77	914
3:35 PM	4	10	1	0	20	8	0	0	0	0	1	0	1	1	12	0	58	894
3:40 PM	3	11	2	0	39	10	2	0	0	3	1	0	1	3	23	0	98	907
3:45 PM	6	9	2	0	26	9	2	0	2	0	2	0	2	5	14	0	79	923
3:50 PM	0	10	1	0	12	14	1	0	1	0	2	0	2	3	17	0	63	894
3:55 PM	4	7	4	0	18	8	1	0	1	2	5	0	6	0	11	0	67	887
4:00 PM	2	14	2	0	11	10	0	0	0	0	1	0	2	2	19	0	63	884
4:05 PM	2	6	1	0	16	11	2	0	0	1	2	0	3	2	18	0	64	881
4:10 PM	6	13	0	0	18	4	1	0	1	0	2	0	4	4	18	0	71	880
4:15 PM	1	9	0	0	25	8	4	0	0	1	3	0	1	0	10	0	62	865
4:20 PM	6	7	2	0	18	20	0	0	1	3	1	0	2	5	20	0	85	862
4:25 PM	3	10	2	0	18	25	0	0	1	2	4	0	3	3	19	0	90	877
4:30 PM	5	8	3	0	11	12	1	0	2	1	1	0	1	1	18	0	64	864
4:35 PM	1	4	5	0	27	10	4	0	0	2	1	0	2	2	12	0	70	876
4:40 PM	1	7	2	0	12	15	2	0	0	0	1	0	3	4	17	0	64	842
4:45 PM	3	8	1	0	25	12	0	0	1	0	0	0	1	3	11	0	65	828
4:50 PM	6	7	1	0	26	16	2	0	1	3	3	0	1	4	21	0	91	856
4:55 PM	1	4	1	0	18	14	2	0	0	0	2	0	1	2	17	0	62	851
5:00 PM	0	3	0	0	26	11	3	0	2	1	3	0	6	2	14	0	71	859
5:05 PM	2	10	1	0	16	8	1	0	0	0	0	0	4	2	19	0	63	858
5:10 PM	1	8	1	0	13	12	2	0	0	2	0	0	2	3	18	0	62	849
5:15 PM	2	6	2	0	29	16	1	1	0	0	2	0	3	2	24	0	88	875
5:20 PM	3	14	0	0	19	17	0	0	1	1	1	0	4	4	11	0	75	865
5:25 PM	2	5	5	0	17	18	0	0	2	0	2	0	2	0	11	0	64	839

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	56	100	28	0	188	228	4	0	16	24	24	0	24	36	228	0	956
Heavy Trucks	0	0	0		4	8	0		0	0	0		0	0	8		20
Pedestrians		36				8				0				4			48
Bicycles	0	0	0		0	1	0		0	0	0		0	1	0		2
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2015 2:41 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

7409 SW Tech Center Dr, Ste B150
Tigard, OR 97224
971-223-0003
www.qualitycounts.net

Order Number: 13346202
Location: Langer Farms Pkwy North of Dwy
Date: 4/18/2015

	Pedestrians		Bicycles			
Time	Westbound	Eastbound	Westbound	Eastbound	Interval Total	Rolling Peak
6:00 AM	0	0	0	0	0	
6:15 AM	0	0	0	0	0	
6:30 AM	0	0	0	0	0	
6:45 AM	1	0	0	0	1	1
7:00 AM	1	0	1	0	2	2
7:15 AM	1	1	0	0	2	4
7:30 AM	1	2	0	0	3	7
7:45 AM	0	2	0	0	2	8
8:00 AM	2	1	0	0	3	10
8:15 AM	0	0	0	0	0	8
8:30 AM	0	0	0	0	0	5
8:45 AM	2	0	0	0	2	5
9:00 AM	0	1	0	0	1	3
9:15 AM	2	2	0	0	4	7
9:30 AM	3	0	0	0	3	10
9:45 AM	0	1	0	0	1	9
10:00 AM	3	0	0	0	3	11
10:15 AM	1	0	1	0	2	8
10:30 AM	0	0	0	0	0	5
10:45 AM	0	0	0	0	0	4
11:00 AM	0	0	0	0	0	1
11:15 AM	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0
2:45 PM	0	0	0	1	1	0
3:00 PM	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0
6:15 PM	0	1	0	0	1	1
6:30 PM	4	0	0	0	4	5
6:45 PM	0	0	0	0	0	5
7:00 PM	0	0	0	0	0	5
7:15 PM	0	0	0	0	0	4
7:30 PM	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0
Totals:	21	11	2	1	**35**	

Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

7409 SW Tech Center Dr, Ste B150
Tigard, OR 97224
971-223-0003
www.qualitycounts.net

Order Number: 13346204
Location: Langer Farms Pkwy South of Dwy
Date: 4/18/2015

	Pedestrians		Bicycles			
Time	Westbound	Eastbound	Westbound	Eastbound	Interval Total	Rolling Peak
6:00 AM	0	0	0	0	0	
6:15 AM	0	0	0	0	0	
6:30 AM	0	0	0	0	0	
6:45 AM	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0
7:30 AM	1	0	0	0	1	1
7:45 AM	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	1
8:15 AM	1	0	0	0	1	2
8:30 AM	0	0	0	0	0	1
8:45 AM	1	0	0	0	1	2
9:00 AM	1	2	0	0	3	5
9:15 AM	0	1	0	0	1	5
9:30 AM	0	0	0	0	0	5
9:45 AM	0	1	0	0	1	5
10:00 AM	0	0	0	0	0	2
10:15 AM	0	2	0	0	2	3
10:30 AM	0	0	0	0	0	3
10:45 AM	0	0	0	0	0	2
11:00 AM	1	3	0	0	4	6
11:15 AM	0	0	0	0	0	4
11:30 AM	0	0	0	0	0	4
11:45 AM	0	0	0	0	0	4
12:00 PM	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0
12:30 PM	1	1	0	0	2	2
12:45 PM	0	2	0	0	2	4
1:00 PM	0	0	0	0	0	4
1:15 PM	0	1	0	0	1	5
1:30 PM	0	0	0	1	1	3
1:45 PM	0	0	0	0	0	1
2:00 PM	0	0	0	0	0	1
2:15 PM	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0
3:15 PM	2	3	0	0	5	5
3:30 PM	1	0	0	0	1	6
3:45 PM	0	0	0	0	0	6
4:00 PM	0	2	0	0	2	8
4:15 PM	0	0	0	0	0	3
4:30 PM	0	2	0	0	2	4
4:45 PM	3	0	0	0	3	7
5:00 PM	0	0	0	0	0	5
5:15 PM	0	0	0	0	0	5
5:30 PM	0	0	0	0	0	3
5:45 PM	0	3	0	0	3	3
6:00 PM	2	0	0	0	2	5
6:15 PM	0	0	0	0	0	5
6:30 PM	0	0	0	0	0	5
6:45 PM	0	0	0	0	0	2
7:00 PM	0	0	0	0	0	0
7:15 PM	1	1	0	0	2	2
7:30 PM	0	2	0	0	2	4
7:45 PM	0	0	0	0	0	4
8:00 PM	0	0	0	0	0	4
8:15 PM	1	0	0	0	1	3
8:30 PM	0	0	0	0	0	1
8:45 PM	0	0	0	0	0	1
9:00 PM	0	0	0	0	0	1
9:15 PM	0	0	0	0	0	0
9:30 PM	1	0	0	0	1	1
9:45 PM	0	0	0	0	0	1
Totals:	17	26	0	1	**44**	

Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

7409 SW Tech Center Dr, Ste B150
Tigard, OR 97224
971-223-0003
www.qualitycounts.net

Order Number: 13346201
Location: Langer Farms Pkwy North of Dwy
Date: 4/16/2015

	Pedestrians		Bicycles			
Time	Westbound	Eastbound	Westbound	Eastbound	Interval Total	Rolling Peak
6:00 AM	0	0	0	0	0	
6:15 AM	0	0	0	0	0	
6:30 AM	0	0	0	0	0	
6:45 AM	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0
7:15 AM	1	0	0	0	1	1
7:30 AM	1	0	0	0	1	2
7:45 AM	0	0	0	0	0	2
8:00 AM	0	0	0	0	0	2
8:15 AM	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0
8:45 AM	2	1	0	0	3	3
9:00 AM	2	0	0	0	2	5
9:15 AM	0	0	0	0	0	5
9:30 AM	0	1	0	0	1	6
9:45 AM	0	0	0	0	0	3
10:00 AM	0	0	0	0	0	1
10:15 AM	1	0	0	0	1	2
10:30 AM	1	1	0	0	2	3
10:45 AM	0	0	0	0	0	3
11:00 AM	0	1	0	0	1	4
11:15 AM	0	0	0	0	0	3
11:30 AM	0	0	0	0	0	1
11:45 AM	0	0	0	0	0	1
12:00 PM	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0
1:00 PM	0	1	0	0	1	1
1:15 PM	1	2	0	0	3	4
1:30 PM	0	0	0	0	0	4
1:45 PM	0	0	0	1	1	4
2:00 PM	1	1	0	0	2	5
2:15 PM	0	0	0	0	0	2
2:30 PM	1	0	0	0	1	3
2:45 PM	2	0	0	0	2	5
3:00 PM	0	0	0	0	0	3
3:15 PM	0	0	0	0	0	3
3:30 PM	0	0	0	0	0	2
3:45 PM	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0
Totals:	13	8	0	1	**22**	

Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

7409 SW Tech Center Dr, Ste B150
Tigard, OR 97224
971-223-0003
www.qualitycounts.net

Order Number: 13346203
Location: Langer Farms Pkwy South of Dwy
Date: 4/16/2015

	Pedestrians		Bicycles			
Time	Westbound	Eastbound	Westbound	Eastbound	Interval Total	Rolling Peak
6:00 AM	0	0	0	0	0	
6:15 AM	0	0	0	0	0	
6:30 AM	0	0	0	0	0	
6:45 AM	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0
9:45 AM	0	1	0	0	1	1
10:00 AM	1	0	0	0	1	2
10:15 AM	0	0	0	0	0	2
10:30 AM	0	0	0	0	0	2
10:45 AM	1	0	0	0	1	2
11:00 AM	0	0	0	0	0	1
11:15 AM	0	0	0	0	0	1
11:30 AM	0	0	0	0	0	1
11:45 AM	0	1	0	0	1	1
12:00 PM	0	0	0	0	0	1
12:15 PM	1	0	0	0	1	2
12:30 PM	0	1	0	0	1	3
12:45 PM	0	0	0	0	0	2
1:00 PM	0	1	0	0	1	3
1:15 PM	0	1	0	0	1	3
1:30 PM	3	1	0	0	4	6
1:45 PM	0	1	0	0	1	7
2:00 PM	0	0	0	0	0	6
2:15 PM	0	0	0	0	0	5
2:30 PM	1	0	0	0	1	2
2:45 PM	0	0	0	0	0	1
3:00 PM	2	0	0	0	2	3
3:15 PM	0	0	0	0	0	3
3:30 PM	0	0	0	0	0	2
3:45 PM	0	1	0	0	1	3
4:00 PM	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0
5:00 PM	1	0	0	0	1	1
5:15 PM	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	1
5:45 PM	2	0	0	0	2	3
6:00 PM	0	1	0	0	1	3
6:15 PM	1	1	0	0	2	5
6:30 PM	0	0	0	0	0	5
6:45 PM	1	0	0	0	1	4
7:00 PM	1	1	0	0	2	5
7:15 PM	1	2	0	0	3	6
7:30 PM	0	0	0	0	0	6
7:45 PM	0	0	0	0	0	5
8:00 PM	1	0	0	0	1	4
8:15 PM	0	1	0	0	1	2
8:30 PM	0	0	0	0	0	2
8:45 PM	0	0	0	0	0	2
9:00 PM	0	1	0	0	1	2
9:15 PM	0	0	0	0	0	1
9:30 PM	0	0	0	0	0	1
9:45 PM	0	0	0	0	0	1
Totals:	17	15	0	0	**32**	

LOCATION: Langer Farms Pkwy South of Tualatin Sherwood Rd
SPECIFIC LOCATION: 500 ft from
CITY/STATE: Sherwood, OR

QC JOB #: 13346207
DIRECTION: NB
DATE: Apr 16 2015 - Apr 18 2015

Start Time	Mon	Tue	Wed	Thu 16-Apr-15	Fri 17-Apr-15	Average Weekday Hourly Traffic	Sat 18-Apr-15	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM				4	6	5	6		5	
1:00 AM				2	6	4	10		6	
2:00 AM				2	4	3	2		3	
3:00 AM				6	6	6	2		5	
4:00 AM				7	13	10	6		9	
5:00 AM				41	33	37	10		28	
6:00 AM				97	107	102	28		77	
7:00 AM				188	180	184	57		142	
8:00 AM				**195**	**181**	**188**	93		156	
9:00 AM				138	129	134	142		136	
10:00 AM				111	139	125	158		136	
11:00 AM				153	142	148	**179**		**158**	
12:00 PM				152	180	166	**197**		**176**	
1:00 PM				152	134	143	188		158	
2:00 PM				129	147	138	158		145	
3:00 PM				**179**	183	181	162		175	
4:00 PM				169	178	174	160		169	
5:00 PM				179	**191**	**185**	129		166	
6:00 PM				138	179	159	172		163	
7:00 PM				130	140	135	109		126	
8:00 PM				93	102	98	91		95	
9:00 PM				55	48	52	55		53	
10:00 PM				31	44	38	39		38	
11:00 PM				14	9	12	18		14	
Day Total				2365	2481	2427	2171		2339	
% Weekday Average				97.4%	102.2%					
% Week Average				101.1%	106.1%	103.8%	92.8%			
AM Peak Volume				8:00 AM 195	8:00 AM 181	8:00 AM 188	11:00 AM 179		11:00 AM 158	
PM Peak Volume				3:00 PM 179	5:00 PM 191	5:00 PM 185	12:00 PM 197		12:00 PM 176	

Comments:

Report generated on 4/23/2015 3:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: Langer Farms Pkwy South of Tualatin Sherwood Rd
SPECIFIC LOCATION: 500 ft from
CITY/STATE: Sherwood, OR

QC JOB #: 13346207
DIRECTION: NB/SB
DATE: Apr 16 2015 - Apr 18 2015

Start Time	Mon	Tue	Wed	Thu 16-Apr-15	Fri 17-Apr-15	Average Weekday Hourly Traffic	Sat 18-Apr-15	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM				28	23	26	32		28	
1:00 AM				6	15	11	29		17	
2:00 AM				6	9	8	6		7	
3:00 AM				9	8	9	5		7	
4:00 AM				15	20	18	7		14	
5:00 AM				54	46	50	18		39	
6:00 AM				133	156	145	41		110	
7:00 AM				**340**	296	**318**	97		244	
8:00 AM				324	**311**	318	170		268	
9:00 AM				249	243	246	295		262	
10:00 AM				239	263	251	315		272	
11:00 AM				292	288	290	**337**		**306**	
12:00 PM				312	345	329	372		343	
1:00 PM				330	284	307	**400**		338	
2:00 PM				311	344	328	361		339	
3:00 PM				385	411	398	357		384	
4:00 PM				414	443	429	364		**407**	
5:00 PM				**418**	**449**	**434**	327		398	
6:00 PM				358	387	373	335		360	
7:00 PM				303	311	307	261		292	
8:00 PM				233	245	239	222		233	
9:00 PM				149	136	143	160		148	
10:00 PM				84	106	95	99		96	
11:00 PM				32	40	36	56		43	
Day Total				5024	5179	5108	4666		4955	
% Weekday Average				98.4%	101.4%					
% Week Average				101.4%	104.5%	103.1%	94.2%			
AM Peak Volume				7:00 AM 340	8:00 AM 311	7:00 AM 318	11:00 AM 337		11:00 AM 306	
PM Peak Volume				5:00 PM 418	5:00 PM 449	5:00 PM 434	1:00 PM 400		4:00 PM 407	

Comments:

Report generated on 4/23/2015 3:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: Langer Farms Pkwy South of Tualatin Sherwood Rd
SPECIFIC LOCATION: 500 ft from
CITY/STATE: Sherwood, OR

QC JOB #: 13346207
DIRECTION: SB
DATE: Apr 16 2015 - Apr 18 2015

Start Time	Mon	Tue	Wed	Thu 16-Apr-15	Fri 17-Apr-15	Average Weekday Hourly Traffic	Sat 18-Apr-15	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM				24	17	21	26		22	
1:00 AM				4	9	7	19		11	
2:00 AM				4	5	5	4		4	
3:00 AM				3	2	3	3		3	
4:00 AM				8	7	8	1		5	
5:00 AM				13	13	13	8		11	
6:00 AM				36	49	43	13		33	
7:00 AM				**152**	116	134	40		103	
8:00 AM				129	130	130	77		112	
9:00 AM				111	114	113	153		126	
10:00 AM				128	124	126	157		136	
11:00 AM				139	**146**	**143**	**158**		**148**	
12:00 PM				160	165	163	175		167	
1:00 PM				178	150	164	**212**		180	
2:00 PM				182	197	190	203		194	
3:00 PM				206	228	217	195		210	
4:00 PM				**245**	**265**	**255**	204		**238**	
5:00 PM				239	258	249	198		232	
6:00 PM				220	208	214	163		197	
7:00 PM				173	171	172	152		165	
8:00 PM				140	143	142	131		138	
9:00 PM				94	88	91	105		96	
10:00 PM				53	62	58	60		58	
11:00 PM				18	31	25	38		29	
Day Total				2659	2698	2686	2495		2618	
% Weekday Average				99.0%	100.4%					
% Week Average				101.6%	103.1%	102.6%	95.3%			
AM Peak Volume				7:00 AM 152	11:00 AM 146	11:00 AM 143	11:00 AM 158		11:00 AM 148	
PM Peak Volume				4:00 PM 245	4:00 PM 265	4:00 PM 255	1:00 PM 212		4:00 PM 238	

Comments:

Report generated on 4/23/2015 3:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

APPENDIX 2B

SPEED SURVEY

LOCATION: Langer Farms Pkwy South of Tualatin Sherwood Rd
SPECIFIC LOCATION: 500 ft from
CITY/STATE: Sherwood, OR

QC JOB #: 13346207
DIRECTION: NB
DATE: Apr 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	1	0	1	0	2	0	0	0	0	0	0	0	0	0	4	26-35	2
1:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	26-35	2
2:00 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	21-30	2
3:00 AM	0	0	1	2	2	1	0	0	0	0	0	0	0	0	6	26-35	4
4:00 AM	1	0	0	2	3	1	0	0	0	0	0	0	0	0	7	30-39	4
5:00 AM	0	0	2	20	15	4	0	0	0	0	0	0	0	0	41	26-35	35
6:00 AM	0	1	9	42	34	9	**2**	0	0	0	0	0	0	0	97	26-35	76
7:00 AM	7	1	13	**90**	56	**19**	2	0	0	0	0	0	0	0	188	26-35	145
8:00 AM	**8**	**2**	18	86	**72**	8	1	0	0	0	0	0	0	0	**195**	26-35	157
9:00 AM	5	0	14	71	39	8	1	0	0	0	0	0	0	0	138	26-35	110
10:00 AM	5	1	**21**	47	33	4	0	0	0	0	0	0	0	0	111	26-35	79
11:00 AM	3	2	18	73	49	7	1	0	0	0	0	0	0	0	153	26-35	122
12:00 PM	4	0	20	71	52	5	0	0	0	0	0	0	0	0	152	26-35	123
1:00 PM	6	2	**24**	66	41	12	**1**	0	0	0	0	0	0	0	152	26-35	106
2:00 PM	3	1	15	58	37	14	1	0	0	0	0	0	0	0	129	26-35	95
3:00 PM	7	**4**	22	**85**	47	14	0	0	0	0	0	0	0	0	**179**	26-35	132
4:00 PM	4	0	22	69	58	16	0	0	0	0	0	0	0	0	169	26-35	126
5:00 PM	6	0	12	71	**65**	**23**	0	**2**	0	0	0	0	0	0	179	26-35	136
6:00 PM	3	0	11	73	44	7	0	0	0	0	0	0	0	0	138	26-35	117
7:00 PM	**9**	2	15	57	45	2	0	0	0	0	0	0	0	0	130	26-35	102
8:00 PM	1	1	15	47	27	2	0	0	0	0	0	0	0	0	93	26-35	74
9:00 PM	0	0	6	22	22	5	0	0	0	0	0	0	0	0	55	26-35	44
10:00 PM	0	1	6	14	7	2	1	0	0	0	0	0	0	0	31	26-35	20
11:00 PM	0	0	2	5	5	2	0	0	0	0	0	0	0	0	14	26-35	10
Day Total	73	18	268	1073	756	165	10	2	0	0	0	0	0	0	2365	26-35	1828
Percent	3.1%	0.8%	11.3%	45.4%	32.0%	7.0%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
ADT 2365																	
AM Peak Volume	8:00 AM 8	8:00 AM 2	10:00 AM 21	7:00 AM 90	8:00 AM 72	7:00 AM 19	6:00 AM 2								8:00 AM 195		
PM Peak Volume	7:00 PM 9	3:00 PM 4	1:00 PM 24	3:00 PM 85	5:00 PM 65	5:00 PM 23	1:00 PM 1	5:00 PM 2							3:00 PM 179		

Comments:

Report generated on 4/23/2015 3:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: Langer Farms Pkwy South of Tualatin Sherwood Rd
SPECIFIC LOCATION: 500 ft from
CITY/STATE: Sherwood, OR

QC JOB #: 13346207
DIRECTION: NB
DATE: Apr 17 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	1	0	0	3	2	0	0	0	0	0	0	0	0	0	6	26-35	5
1:00 AM	0	0	0	2	3	1	0	0	0	0	0	0	0	0	6	30-39	4
2:00 AM	0	1	2	0	1	0	0	0	0	0	0	0	0	0	4	16-25	3
3:00 AM	0	0	1	1	4	0	0	0	0	0	0	0	0	0	6	26-35	5
4:00 AM	0	0	1	7	3	1	1	0	0	0	0	0	0	0	13	26-35	10
5:00 AM	0	0	6	12	10	5	0	0	0	0	0	0	0	0	33	26-35	22
6:00 AM	2	1	11	44	35	11	**2**	1	0	0	0	0	0	0	107	26-35	79
7:00 AM	3	3	18	74	64	**14**	1	**2**	**1**	0	0	0	0	0	180	26-35	138
8:00 AM	0	2	12	**79**	**75**	13	0	0	0	0	0	0	0	0	**181**	26-35	154
9:00 AM	1	2	12	70	35	8	1	0	0	0	0	0	0	0	129	26-35	105
10:00 AM	**6**	3	16	64	41	8	1	0	0	0	0	0	0	0	139	26-35	104
11:00 AM	4	**4**	**30**	72	29	3	0	0	0	0	0	0	0	0	142	21-30	102
12:00 PM	5	3	**30**	**88**	49	5	0	0	0	0	0	0	0	0	180	26-35	137
1:00 PM	3	2	12	65	49	3	0	0	0	0	0	0	0	0	134	26-35	114
2:00 PM	3	**4**	13	68	46	11	2	0	0	0	0	0	0	0	147	26-35	113
3:00 PM	4	1	24	81	56	**15**	2	0	0	0	0	0	0	0	183	26-35	136
4:00 PM	3	1	20	77	67	10	0	0	0	0	0	0	0	0	178	26-35	144
5:00 PM	**12**	1	14	76	**72**	13	**3**	0	0	0	0	0	0	0	**191**	26-35	148
6:00 PM	6	4	22	80	54	12	1	0	0	0	0	0	0	0	179	26-35	134
7:00 PM	4	2	22	65	38	9	0	0	0	0	0	0	0	0	140	26-35	102
8:00 PM	4	0	22	58	17	1	0	0	0	0	0	0	0	0	102	21-30	79
9:00 PM	0	1	12	21	9	5	0	0	0	0	0	0	0	0	48	21-30	33
10:00 PM	2	0	12	19	11	0	0	0	0	0	0	0	0	0	44	26-35	30
11:00 PM	0	0	1	3	5	0	0	0	0	0	0	0	0	0	9	26-35	8
Day Total	63	35	313	1129	775	148	14	3	1	0	0	0	0	0	2481	26-35	1904
Percent	2.5%	1.4%	12.6%	45.5%	31.2%	6.0%	0.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

ADT
2481

AM Peak Volume	10:00 AM 6	11:00 AM 4	11:00 AM 30	8:00 AM 79	8:00 AM 75	7:00 AM 14	6:00 AM 2	7:00 AM 2	7:00 AM 1						8:00 AM 181		
PM Peak Volume	5:00 PM 12	2:00 PM 4	12:00 PM 30	12:00 PM 88	5:00 PM 72	3:00 PM 15	5:00 PM 3								5:00 PM 191		

Comments:

Report generated on 4/23/2015 3:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: Langer Farms Pkwy South of Tualatin Sherwood Rd
SPECIFIC LOCATION: 500 ft from
CITY/STATE: Sherwood, OR

QC JOB #: 13346207
DIRECTION: NB
DATE: Apr 18 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	2	2	1	**1**	0	0	0	0	0	0	0	6	26-35	4
1:00 AM	0	0	2	5	3	0	0	0	0	0	0	0	0	0	10	26-35	7
2:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	26-35	2
3:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	26-35	2
4:00 AM	0	0	1	3	1	0	1	0	0	0	0	0	0	0	6	21-30	4
5:00 AM	0	0	0	7	3	0	0	0	0	0	0	0	0	0	10	26-35	10
6:00 AM	0	0	5	10	9	3	1	0	0	0	0	0	0	0	28	26-35	19
7:00 AM	0	0	8	28	14	7	0	0	0	0	0	0	0	0	57	26-35	41
8:00 AM	3	0	14	48	20	**8**	0	0	0	0	0	0	0	0	93	26-35	68
9:00 AM	**6**	0	17	64	48	7	0	0	0	0	0	0	0	0	142	26-35	111
10:00 AM	1	**2**	22	76	49	8	0	0	0	0	0	0	0	0	158	26-35	125
11:00 AM	6	1	**25**	**89**	**51**	6	1	0	0	0	0	0	0	0	**179**	26-35	139
12:00 PM	**10**	3	22	**94**	57	10	1	0	0	0	0	0	0	0	**197**	26-35	150
1:00 PM	7	**4**	**44**	75	50	7	1	0	0	0	0	0	0	0	188	26-35	125
2:00 PM	6	2	22	63	49	15	1	0	0	0	0	0	0	0	158	26-35	112
3:00 PM	10	2	16	61	**63**	5	**5**	0	0	0	0	0	0	0	162	26-35	123
4:00 PM	5	2	28	65	41	**17**	2	0	0	0	0	0	0	0	160	26-35	105
5:00 PM	3	0	12	57	44	12	1	0	0	0	0	0	0	0	129	26-35	101
6:00 PM	2	2	23	94	46	5	0	0	0	0	0	0	0	0	172	26-35	139
7:00 PM	7	1	19	43	33	5	1	0	0	0	0	0	0	0	109	26-35	75
8:00 PM	5	0	20	41	23	2	0	0	0	0	0	0	0	0	91	26-35	63
9:00 PM	2	0	14	24	12	3	0	0	0	0	0	0	0	0	55	23-32	37
10:00 PM	1	0	2	23	10	3	0	0	0	0	0	0	0	0	39	26-35	33
11:00 PM	0	1	0	11	6	0	0	0	0	0	0	0	0	0	18	26-35	17
Day Total	74	20	316	984	637	124	16	0	0	0	0	0	0	0	2171	26-35	1621
Percent	3.4%	0.9%	14.6%	45.3%	29.3%	5.7%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

ADT
2171

AM Peak Volume	9:00 AM 6	10:00 AM 2	11:00 AM 25	11:00 AM 89	11:00 AM 51	8:00 AM 8	12:00 AM 1		11:00 AM 179	
PM Peak Volume	12:00 PM 10	1:00 PM 4	1:00 PM 44	12:00 PM 94	3:00 PM 63	4:00 PM 17	3:00 PM 5		12:00 PM 197	

Comments:

Report generated on 4/23/2015 3:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

SUMMARY - Tube Count - Speed Data

LOCATION: Langer Farms Pkwy South of Tualatin Sherwood Rd
SPECIFIC LOCATION: 500 ft from
CITY/STATE: Sherwood, OR

QC JOB #: 13346207
DIRECTION: NB
DATE: Apr 16 2015 - Apr 18 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	210	73	897	3186	2168	437	40	5	1	0	0	0	0	0	7017	26-35	5354
Percent	3.0%	1.0%	12.8%	45.4%	30.9%	6.2%	0.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
Cumulative Percent	3.0%	4.0%	16.8%	62.2%	93.1%	99.3%	99.9%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%			

ADT
2339

85th Percentile 33 MPH

Mean Speed(Average) 28 MPH

Median 28 MPH
Mode: 28 MPH

Comments:

Report generated on 4/23/2015 3:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Quality Counts
TRANSPORTATION DATA COLLECTION

LOCATION: Langer Farms Pkwy South of Tualatin Sherwood Rd
SPECIFIC LOCATION: 500 ft from
CITY/STATE: Sherwood, OR

QC JOB #: 13346207
DIRECTION: SB
DATE: Apr 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	4	12	7	1	0	0	0	0	0	0	0	0	24	26-35	18
1:00 AM	0	0	0	2	2	0	0	0	0	0	0	0	0	0	4	26-35	4
2:00 AM	0	0	2	1	1	0	0	0	0	0	0	0	0	0	4	21-30	3
3:00 AM	0	0	0	1	1	1	0	0	0	0	0	0	0	0	3	31-40	2
4:00 AM	0	0	2	5	1	0	0	0	0	0	0	0	0	0	8	21-30	7
5:00 AM	0	0	4	7	2	0	0	0	0	0	0	0	0	0	13	23-32	10
6:00 AM	0	0	5	12	14	5	0	0	0	0	0	0	0	0	36	26-35	25
7:00 AM	**3**	0	22	56	**56**	**14**	**1**	0	0	0	0	0	0	0	**152**	26-35	111
8:00 AM	2	3	18	52	39	13	1	**1**	0	0	0	0	0	0	129	26-35	91
9:00 AM	2	2	25	56	24	2	0	0	0	0	0	0	0	0	111	21-30	81
10:00 AM	3	**4**	27	63	23	6	1	1	0	0	0	0	0	0	128	22-31	89
11:00 AM	1	1	**28**	**64**	39	6	0	0	0	0	0	0	0	0	139	26-35	103
12:00 PM	3	5	31	83	31	6	0	0	**1**	0	0	0	0	0	160	26-35	113
1:00 PM	**6**	4	**39**	82	42	3	2	0	0	0	0	0	0	0	178	26-35	124
2:00 PM	5	5	37	84	45	6	0	0	0	0	0	0	0	0	182	26-35	129
3:00 PM	3	2	33	107	55	5	1	0	0	0	0	0	0	0	206	26-35	162
4:00 PM	0	4	29	**118**	87	6	1	0	0	0	0	0	0	0	**245**	26-35	204
5:00 PM	2	3	27	106	**89**	**12**	0	0	0	0	0	0	0	0	239	26-35	195
6:00 PM	4	**7**	38	99	65	7	0	0	0	0	0	0	0	0	220	26-35	164
7:00 PM	5	7	35	81	38	3	**3**	**1**	0	0	0	0	0	0	173	26-35	118
8:00 PM	4	4	35	75	18	3	1	0	0	0	0	0	0	0	140	21-30	110
9:00 PM	1	1	21	52	18	1	0	0	0	0	0	0	0	0	94	21-30	73
10:00 PM	1	4	12	28	8	0	0	0	0	0	0	0	0	0	53	21-30	40
11:00 PM	0	0	3	8	7	0	0	0	0	0	0	0	0	0	18	26-35	14
Day Total	45	56	477	1254	712	100	11	3	1	0	0	0	0	0	2659	26-35	1966
Percent	1.7%	2.1%	17.9%	47.2%	26.8%	3.8%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

ADT
2659

AM Peak Volume	7:00 AM 3	10:00 AM 4	11:00 AM 28	11:00 AM 64	7:00 AM 56	7:00 AM 14	7:00 AM 1	8:00 AM 1							7:00 AM 152		
PM Peak Volume	1:00 PM 6	6:00 PM 7	1:00 PM 39	4:00 PM 118	5:00 PM 89	5:00 PM 12	7:00 PM 3	7:00 PM 1	12:00 PM 1						4:00 PM 245		

Comments:

Report generated on 4/23/2015 3:16 PM

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LOCATION: Langer Farms Pkwy South of Tualatin Sherwood Rd
SPECIFIC LOCATION: 500 ft from
CITY/STATE: Sherwood, OR

QC JOB #: 13346207
DIRECTION: SB
DATE: Apr 17 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	1	0	4	7	4	1	0	0	0	0	0	0	0	0	17	26-35	11
1:00 AM	0	0	1	5	3	0	0	0	0	0	0	0	0	0	9	26-35	7
2:00 AM	0	0	3	2	0	0	0	0	0	0	0	0	0	0	5	21-30	5
3:00 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	16-25	1
4:00 AM	0	0	2	3	2	0	0	0	0	0	0	0	0	0	7	26-35	5
5:00 AM	0	0	2	5	5	1	0	0	0	0	0	0	0	0	13	26-35	10
6:00 AM	2	2	10	17	13	5	0	0	0	0	0	0	0	0	49	26-35	30
7:00 AM	1	1	14	52	38	**10**	0	0	0	0	0	0	0	0	116	26-35	89
8:00 AM	3	3	23	57	33	9	**2**	0	0	0	0	0	0	0	130	26-35	89
9:00 AM	2	2	16	45	**45**	4	0	0	0	0	0	0	0	0	114	26-35	90
10:00 AM	**5**	7	21	**64**	23	2	2	0	0	0	0	0	0	0	124	26-35	86
11:00 AM	4	**16**	**37**	62	25	1	1	0	0	0	0	0	0	0	**146**	21-30	99
12:00 PM	5	5	33	72	46	4	0	0	0	0	0	0	0	0	165	26-35	117
1:00 PM	1	4	32	72	36	5	0	0	0	0	0	0	0	0	150	26-35	107
2:00 PM	2	3	37	102	49	4	0	0	0	0	0	0	0	0	197	26-35	151
3:00 PM	5	7	33	111	59	**12**	**1**	0	0	0	0	0	0	0	228	26-35	170
4:00 PM	**8**	5	39	**126**	**78**	8	1	0	0	0	0	0	0	0	**265**	26-35	204
5:00 PM	8	8	43	117	75	6	1	0	0	0	0	0	0	0	258	26-35	192
6:00 PM	4	**10**	43	92	52	6	1	0	0	0	0	0	0	0	208	26-35	144
7:00 PM	3	6	**50**	84	27	0	1	0	0	0	0	0	0	0	171	21-30	134
8:00 PM	3	8	47	65	20	0	0	0	0	0	0	0	0	0	143	21-30	112
9:00 PM	0	6	22	45	14	1	0	0	0	0	0	0	0	0	88	21-30	67
10:00 PM	0	3	23	26	9	1	0	0	0	0	0	0	0	0	62	21-30	49
11:00 PM	1	0	4	16	8	2	0	0	0	0	0	0	0	0	31	26-35	24
Day Total	58	96	540	1247	664	83	10	0	0	0	0	0	0	0	2698	26-35	1911
Percent	2.1%	3.6%	20.0%	46.2%	24.6%	3.1%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

ADT
2698

AM Peak Volume	10:00 AM 5	11:00 AM 16	11:00 AM 37	10:00 AM 64	9:00 AM 45	7:00 AM 10	8:00 AM 2		11:00 AM 146	
PM Peak Volume	4:00 PM 8	6:00 PM 10	7:00 PM 50	4:00 PM 126	4:00 PM 78	3:00 PM 12	3:00 PM 1		4:00 PM 265	

Comments:

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CITY/STATE: Sherwood, OR

QC JOB #: 13346207
DIRECTION: SB
DATE: Apr 18 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	11	12	3	0	0	0	0	0	0	0	0	0	26	21-30	22
1:00 AM	0	1	4	6	8	0	0	0	0	0	0	0	0	0	19	26-35	14
2:00 AM	0	0	2	0	2	0	0	0	0	0	0	0	0	0	4	16-25	2
3:00 AM	0	0	1	0	2	0	0	0	0	0	0	0	0	0	3	26-35	2
4:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	21-30	1
5:00 AM	0	1	4	1	1	1	0	0	0	0	0	0	0	0	8	16-25	5
6:00 AM	0	0	4	5	3	1	0	0	0	0	0	0	0	0	13	21-30	9
7:00 AM	0	3	12	15	6	3	**1**	0	0	0	0	0	0	0	40	21-30	27
8:00 AM	3	3	12	38	15	**6**	0	0	0	0	0	0	0	0	77	26-35	53
9:00 AM	4	3	**33**	77	30	6	0	0	0	0	0	0	0	0	153	21-30	110
10:00 AM	3	**9**	29	73	**37**	6	0	0	0	0	0	0	0	0	157	26-35	110
11:00 AM	**5**	4	29	**81**	35	4	0	0	0	0	0	0	0	0	**158**	26-35	116
12:00 PM	10	4	38	84	35	4	0	0	0	0	0	0	0	0	175	21-30	122
1:00 PM	6	4	41	**114**	42	4	1	0	0	0	0	0	0	0	**212**	26-35	155
2:00 PM	6	5	**55**	90	44	2	1	0	0	0	0	0	0	0	203	21-30	145
3:00 PM	5	1	35	104	40	**10**	0	0	0	0	0	0	0	0	195	26-35	144
4:00 PM	**11**	6	33	103	42	7	**2**	0	0	0	0	0	0	0	204	26-35	144
5:00 PM	4	6	33	91	**57**	7	0	0	0	0	0	0	0	0	198	26-35	148
6:00 PM	3	**11**	28	78	40	1	2	0	0	0	0	0	0	0	163	26-35	118
7:00 PM	3	2	36	78	29	3	1	0	0	0	0	0	0	0	152	21-30	113
8:00 PM	6	2	45	59	17	2	0	0	0	0	0	0	0	0	131	21-30	104
9:00 PM	0	1	34	61	6	3	0	0	0	0	0	0	0	0	105	21-30	94
10:00 PM	2	1	12	35	10	0	0	0	0	0	0	0	0	0	60	21-30	47
11:00 PM	1	0	6	22	8	1	0	0	0	0	0	0	0	0	38	26-35	30
Day Total	72	67	537	1228	512	71	8	0	0	0	0	0	0	0	2495	21-30	1764
Percent	2.9%	2.7%	21.5%	49.2%	20.5%	2.8%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

ADT
2495

AM Peak Volume	11:00 AM 5	10:00 AM 9	9:00 AM 33	11:00 AM 81	10:00 AM 37	8:00 AM 6	7:00 AM 1		11:00 AM 158	
PM Peak Volume	4:00 PM 11	6:00 PM 11	2:00 PM 55	1:00 PM 114	5:00 PM 57	3:00 PM 10	4:00 PM 2		1:00 PM 212	

Comments:

Report generated on 4/23/2015 3:16 PM

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SUMMARY - Tube Count - Speed Data

LOCATION: Langer Farms Pkwy South of Tualatin Sherwood Rd
SPECIFIC LOCATION: 500 ft from
CITY/STATE: Sherwood, OR

QC JOB #: 13346207
DIRECTION: SB
DATE: Apr 16 2015 - Apr 18 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	175	219	1554	3729	1888	254	29	3	1	0	0	0	0	0	7852	26-35	5617
Percent	2.2%	2.8%	19.8%	47.5%	24.0%	3.2%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
Cumulative Percent	2.2%	5.0%	24.8%	72.3%	96.3%	99.6%	99.9%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%			

ADT
2617

85th Percentile 32 MPH

Mean Speed(Average): 27 MPH

Median 27 MPH
Mode: 28 MPH

Comments:

Report generated on 4/23/2015 3:16 PM

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Quality Counts
TRANSPORTATION DATA COLLECTION

LOCATION: Langer Farms Pkwy South of Tualatin Sherwood Rd
SPECIFIC LOCATION: 500 ft from
CITY/STATE: Sherwood, OR

QC JOB #: 13346207
DIRECTION: NB/SB
DATE: Apr 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	1	0	5	12	9	1	0	0	0	0	0	0	0	0	28	26-35	20
1:00 AM	0	0	0	3	3	0	0	0	0	0	0	0	0	0	6	27-36	5
2:00 AM	0	0	3	2	1	0	0	0	0	0	0	0	0	0	6	21-30	5
3:00 AM	0	0	1	3	3	2	0	0	0	0	0	0	0	0	9	31-40	5
4:00 AM	1	0	2	7	4	1	0	0	0	0	0	0	0	0	15	26-35	11
5:00 AM	0	0	6	27	17	4	0	0	0	0	0	0	0	0	54	26-35	44
6:00 AM	0	1	14	54	48	14	2	0	0	0	0	0	0	0	133	26-35	101
7:00 AM	**10**	1	35	**146**	**112**	**33**	**3**	0	0	0	0	0	0	0	**340**	26-35	257
8:00 AM	10	**5**	36	138	111	21	2	**1**	0	0	0	0	0	0	324	26-35	248
9:00 AM	7	2	39	127	63	10	1	0	0	0	0	0	0	0	249	26-35	190
10:00 AM	8	5	**48**	110	56	10	1	1	0	0	0	0	0	0	239	26-35	165
11:00 AM	4	3	46	137	88	13	1	0	0	0	0	0	0	0	292	26-35	225
12:00 PM	7	5	51	154	83	11	0	0	**1**	0	0	0	0	0	312	26-35	237
1:00 PM	12	6	**63**	148	83	15	**3**	0	0	0	0	0	0	0	330	26-35	231
2:00 PM	8	6	52	142	82	20	1	0	0	0	0	0	0	0	311	26-35	223
3:00 PM	10	6	55	**192**	102	19	1	0	0	0	0	0	0	0	385	26-35	293
4:00 PM	4	4	51	187	145	22	1	0	0	0	0	0	0	0	414	26-35	332
5:00 PM	8	3	39	177	**154**	**35**	0	**2**	0	0	0	0	0	0	**418**	26-35	330
6:00 PM	7	7	49	172	109	14	0	0	0	0	0	0	0	0	358	26-35	281
7:00 PM	**14**	**9**	50	138	83	5	3	1	0	0	0	0	0	0	303	26-35	221
8:00 PM	5	5	50	122	45	5	1	0	0	0	0	0	0	0	233	21-30	172
9:00 PM	1	1	27	74	40	6	0	0	0	0	0	0	0	0	149	26-35	114
10:00 PM	1	5	18	42	15	2	1	0	0	0	0	0	0	0	84	21-30	60
11:00 PM	0	0	5	13	12	2	0	0	0	0	0	0	0	0	32	26-35	24
Day Total	118	74	745	2327	1468	265	21	5	1	0	0	0	0	0	5024	26-35	3795
Percent	2.3%	1.5%	14.8%	46.3%	29.2%	5.3%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

ADT
5024

AM Peak Volume	7:00 AM 10	8:00 AM 5	10:00 AM 48	7:00 AM 146	7:00 AM 112	7:00 AM 33	7:00 AM 3	8:00 AM 1			7:00 AM 340	
PM Peak Volume	7:00 PM 14	7:00 PM 9	1:00 PM 63	3:00 PM 192	5:00 PM 154	5:00 PM 35	1:00 PM 3	5:00 PM 2	12:00 PM 1		5:00 PM 418	

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Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	2	0	4	10	6	1	0	0	0	0	0	0	0	0	23	26-35	15
1:00 AM	0	0	1	7	6	1	0	0	0	0	0	0	0	0	15	26-35	12
2:00 AM	0	1	5	2	1	0	0	0	0	0	0	0	0	0	9	21-30	7
3:00 AM	0	0	2	1	4	1	0	0	0	0	0	0	0	0	8	26-35	5
4:00 AM	0	0	3	10	5	1	1	0	0	0	0	0	0	0	20	26-35	15
5:00 AM	0	0	8	17	15	6	0	0	0	0	0	0	0	0	46	26-35	32
6:00 AM	4	3	21	61	48	16	2	1	0	0	0	0	0	0	156	26-35	108
7:00 AM	4	4	32	126	102	**24**	1	**2**	**1**	0	0	0	0	0	296	26-35	227
8:00 AM	3	5	35	**136**	**108**	22	2	0	0	0	0	0	0	0	**311**	26-35	244
9:00 AM	3	4	28	115	80	12	1	0	0	0	0	0	0	0	243	26-35	195
10:00 AM	**11**	10	37	128	64	10	**3**	0	0	0	0	0	0	0	263	26-35	192
11:00 AM	8	**20**	**67**	134	54	4	1	0	0	0	0	0	0	0	288	21-30	201
12:00 PM	10	8	63	160	95	9	0	0	0	0	0	0	0	0	345	26-35	255
1:00 PM	4	6	44	137	85	8	0	0	0	0	0	0	0	0	284	26-35	222
2:00 PM	5	7	50	170	95	15	2	0	0	0	0	0	0	0	344	26-35	265
3:00 PM	9	8	57	192	115	**27**	3	0	0	0	0	0	0	0	411	26-35	307
4:00 PM	11	6	59	**203**	145	18	1	0	0	0	0	0	0	0	443	26-35	348
5:00 PM	**20**	9	57	193	**147**	19	**4**	0	0	0	0	0	0	0	**449**	26-35	339
6:00 PM	10	**14**	65	172	106	18	2	0	0	0	0	0	0	0	387	26-35	278
7:00 PM	7	8	**72**	149	65	9	1	0	0	0	0	0	0	0	311	21-30	221
8:00 PM	7	8	69	123	37	1	0	0	0	0	0	0	0	0	245	21-30	192
9:00 PM	0	7	34	66	23	6	0	0	0	0	0	0	0	0	136	21-30	99
10:00 PM	2	3	35	45	20	1	0	0	0	0	0	0	0	0	106	21-30	80
11:00 PM	1	0	5	19	13	2	0	0	0	0	0	0	0	0	40	26-35	32
Day Total	121	131	853	2376	1439	231	24	3	1	0	0	0	0	0	5179	26-35	3815
Percent	2.3%	2.5%	16.5%	45.9%	27.8%	4.5%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

ADT 5179

AM Peak Volume	10:00 AM 11	11:00 AM 20	11:00 AM 67	8:00 AM 136	8:00 AM 108	7:00 AM 24	10:00 AM 3	7:00 AM 2	7:00 AM 1						8:00 AM 311		
PM Peak Volume	5:00 PM 20	6:00 PM 14	7:00 PM 72	4:00 PM 203	5:00 PM 147	3:00 PM 27	5:00 PM 4								5:00 PM 449		

Comments:

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QC JOB #: 13346207
DIRECTION: NB/SB
DATE: Apr 18 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	11	14	5	1	**1**	0	0	0	0	0	0	0	32	21-30	24
1:00 AM	0	1	6	11	11	0	0	0	0	0	0	0	0	0	29	26-35	22
2:00 AM	0	0	2	1	3	0	0	0	0	0	0	0	0	0	6	26-35	4
3:00 AM	0	0	1	0	4	0	0	0	0	0	0	0	0	0	5	26-35	4
4:00 AM	0	0	1	4	1	0	1	0	0	0	0	0	0	0	7	21-30	5
5:00 AM	0	1	4	8	4	1	0	0	0	0	0	0	0	0	18	26-35	12
6:00 AM	0	0	9	15	12	4	1	0	0	0	0	0	0	0	41	26-35	26
7:00 AM	0	3	20	43	20	10	1	0	0	0	0	0	0	0	97	21-30	63
8:00 AM	6	3	26	86	35	**14**	0	0	0	0	0	0	0	0	170	26-35	121
9:00 AM	10	3	50	141	78	13	0	0	0	0	0	0	0	0	295	26-35	219
10:00 AM	4	**11**	51	149	**86**	14	0	0	0	0	0	0	0	0	315	26-35	234
11:00 AM	**11**	5	**54**	**170**	86	10	1	0	0	0	0	0	0	0	**337**	26-35	255
12:00 PM	**20**	7	60	178	92	14	1	0	0	0	0	0	0	0	372	26-35	269
1:00 PM	13	8	**85**	**189**	92	11	2	0	0	0	0	0	0	0	**400**	26-35	280
2:00 PM	12	7	77	153	93	17	2	0	0	0	0	0	0	0	361	26-35	246
3:00 PM	15	3	51	165	**103**	15	**5**	0	0	0	0	0	0	0	357	26-35	268
4:00 PM	16	8	61	168	83	**24**	4	0	0	0	0	0	0	0	364	26-35	251
5:00 PM	7	6	45	148	101	19	1	0	0	0	0	0	0	0	327	26-35	248
6:00 PM	5	**13**	51	172	86	6	2	0	0	0	0	0	0	0	335	26-35	258
7:00 PM	10	3	55	121	62	8	2	0	0	0	0	0	0	0	261	26-35	182
8:00 PM	11	2	65	100	40	4	0	0	0	0	0	0	0	0	222	21-30	165
9:00 PM	2	1	48	85	18	6	0	0	0	0	0	0	0	0	160	21-30	133
10:00 PM	3	1	14	58	20	3	0	0	0	0	0	0	0	0	99	26-35	78
11:00 PM	1	1	6	33	14	1	0	0	0	0	0	0	0	0	56	26-35	46
Day Total	146	87	853	2212	1149	195	24	0	0	0	0	0	0	0	4666	26-35	3361
Percent	3.1%	1.9%	18.3%	47.4%	24.6%	4.2%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

ADT
4666

AM Peak Volume	11:00 AM 11	10:00 AM 11	11:00 AM 54	11:00 AM 170	10:00 AM 86	8:00 AM 14	12:00 AM 1		11:00 AM 337	
PM Peak Volume	12:00 PM 20	6:00 PM 13	1:00 PM 85	1:00 PM 189	3:00 PM 103	4:00 PM 24	3:00 PM 5		1:00 PM 400	

Comments:

Report generated on 4/23/2015 3:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

SUMMARY - Tube Count - Speed Data

LOCATION: Langer Farms Pkwy South of Tualatin Sherwood Rd
SPECIFIC LOCATION: 500 ft from
CITY/STATE: Sherwood, OR

QC JOB #: 13346207
DIRECTION: NB/SB
DATE: Apr 16 2015 - Apr 18 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	385	292	2451	6915	4056	691	69	8	2	0	0	0	0	0	14869	26-35	10971
Percent	2.6%	2.0%	16.5%	46.5%	27.3%	4.6%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
Cumulative Percent	2.6%	4.6%	21.0%	67.5%	94.8%	99.5%	99.9%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%			

ADT
4956

85th Percentile 33 MPH

Mean Speed(Average): 27 MPH

Median 28 MPH
Mode: 28 MPH

Comments:

Report generated on 4/23/2015 3:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Quality Counts
TRANSPORTATION DATA COLLECTION

APPENDIX 2C

COLLISION DETAILS

DKS

Edith Victoria <elv@dksassociates.com>

Langer Farms Parkway - Sherwood

Angela Hass <HassA@sherwoodoregon.gov> Tue, May 12, 2015 at 4:00 PM
To: Edith Victoria <elv@dksassociates.com>

Edith:

Case# 14-241028 – 9/6/2014, 12:49 p.m. – Turning from Langer Farms Pkwy onto Tualatin-Sherwood Rd (within 300 ft), vehicle to vehicle, driver side to front, driver cited for dangerous left turn.

Case# 14-241095 – 9/19/2014, 3:58 p.m. – Crossing from WalMart over to Target, vehicle to vehicle, driver side to passenger side, driver cited for failure to yield before entering hwy

Case# 15-240073 – 1/20/2015, 3:45 p.m. – Turning from Langer Farms Pkwy into WalMart parking lot, sun was in eyes, vehicle to vehicle, driver side front to driver side middle, driver cited for unlawful/unsignaled turn

Hopefully this information will be helpful for your safety analysis.

Thank you,

Angie Hass

Administrative Assistant III

Sherwood Police Department

Direct: 503-925-7131

Fatality report – Phone conversation with Washington County Public Records – Sheriff Department

Date and Time:

12/18/2015 at 10PM

Report ID:

#14-519687

Location:

500’ south of Tualatin-Sherwood Road & Langer Farms Pkwy

Cause:

Pedestrian at fault, run into the street

APPENDIX 2D

NCHRP SPREADSHEETS

GUIDELINES FOR PEDESTRIAN CROSSING TREATMENTS

This spreadsheet combines Worksheet 1 and Worksheet 2 (Appendix A, pages 69-70) of TCRP Report 112/NCHRP Report 562 (*Improving Pedestrian Safety at Unsignalized Intersections*) into an electronic format. This spreadsheet should be used in conjunction with, and not independent of, Appendix A documentation.

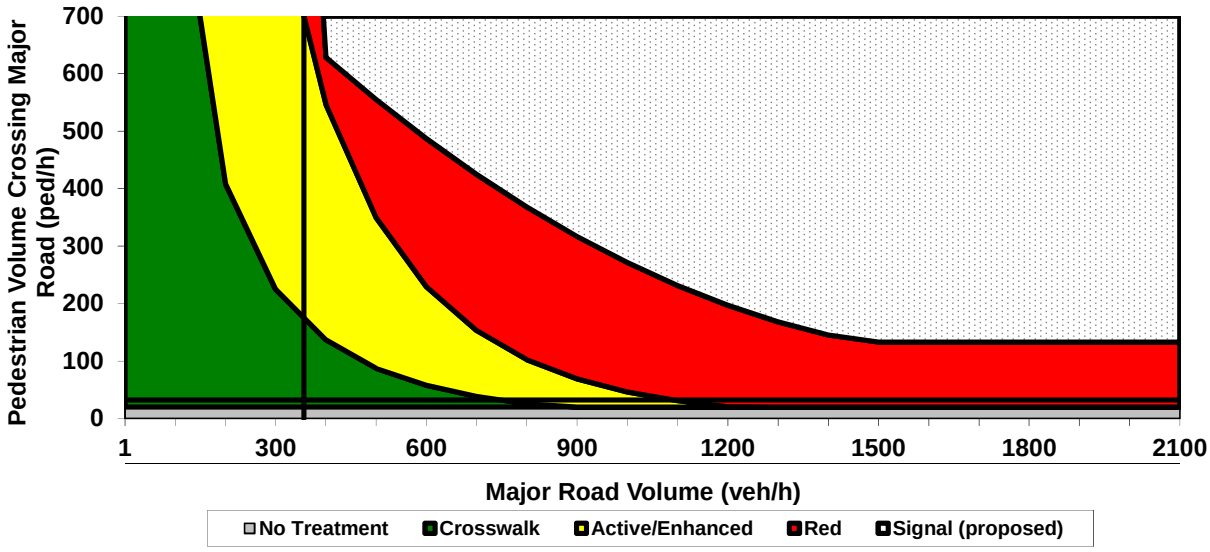
This spreadsheet is still under development, please inform TTI if errors are identified.

Key

- Blue fields contain descriptive information.
- Green fields are required and must be completed.
- Tan fields are adjustments that are filled out only under certain conditions (follow instructions to the left of the cell).
- Gray fields are automatically calculated and should not be edited.

Analyst and Site Information			
Analyst	DKS Associates - ELV	Major Street	SW Langer Farms Pkwy
Analysis Date	May 11, 2015	Minor Street or Location	Target/Walmart Driveway
Data Collection Date	April 18, 2015	Peak Hour	4:00 PM - 5:00 PM Pedestrian Peak

Step 1: Select worksheet:		
Posted or statutory speed limit (or 85th percentile speed) on the major street (mph)	*1a*	33
Is the population of the surrounding area <10,000? (enter ***YES*** or ***NO***)	*1b*	NO
Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a traffic control device?		
Peak-hour pedestrian volume (ped/h), V_p	*2a*	32
Result: Go to step 3.		
Step 3: Does the crossing meet the pedestrian warrant for a traffic signal?		
Major road volume, total of both approaches during peak hour (veh/h), $V_{maj\text{-}s}$	*3a*	356
[Calculated automatically] Preliminary (before min. threshold) peak hour pedestrian volume to meet warrant	*3b*	663
[Calculated automatically] Minimum required peak hour pedestrian volume to meet traffic signal warrant	*3c*	663
Is 15th percentile crossing speed of pedestrians less than 3.5 ft/s (1.1 m/s)? (enter ***YES*** or ***NO***)	*3d*	NO
If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce *3c* by up to 50%. — % rate of reduction for *3c* (up to 50%)	*3e*	0%
Reduced value or *3c*	*3f*	663
Result: The signal warrant is not met. Go to step 4.		
Step 4: Estimate pedestrian delay.		
Pedestrian crossing distance, curb to curb (ft), L	*4a*	50
Pedestrian walking speed (ft/s), S_p (suggested speed = 3.5 ft/s)	*4b*	3.5
Pedestrian start-up time and end clearance time (s), t_s (suggested start-up time = 3 sec)	*4c*	3
[Calculated automatically] Critical gap required for crossing pedestrian (s), t_c	*4d*	17
Major road volume, total both approaches OR approach being crossed if raised median island is present, during peak hour (veh/h), $V_{maj\text{-}d}$	*4e*	356
Major road flow rate (veh/s), v	*4f*	0.10
Average pedestrian delay (s/person), d_p	*4g*	29
Total pedestrian delay (h), D_p The value in 4h is the calculated estimated delay for all pedestrians crossing the major roadway without a crossing treatment (assumes 0% compliance). If the actual total pedestrian delay has been measured at the site, that value can be entered in 4i to replace the calculated value in 4h.	*4h*	0.3
	4i	
Step 5: Select treatment based up on total pedestrian delay and expected motorist compliance.		
Expected motorist compliance at pedestrian crossings in region: enter ***HIGH for High Compliance*** or ***LOW for Low Compliance***	*5a*	LOW
Treatment Category:	**CROSSWALK**	



This worksheet provides general recommendations on pedestrian crossing treatments to consider at unsignalized intersections; in all cases, engineering judgment should be used in selecting a specific treatment for installation. This worksheet does not apply to school crossings. In addition to the results provided by this worksheet, users should consider whether a pedestrian treatment could present an increased safety risk to pedestrians, such as where there is poor sight distance, complex geometrics, or nearby traffic signals.

GUIDELINES FOR PEDESTRIAN CROSSING TREATMENTS

This spreadsheet combines Worksheet 1 and Worksheet 2 (Appendix A, pages 69-70) of TCRP Report 112/NCHRP Report 562 (*Improving Pedestrian Safety at Unsignalized Intersections*) into an electronic format. This spreadsheet should be used in conjunction with, and not independent of, Appendix A documentation.

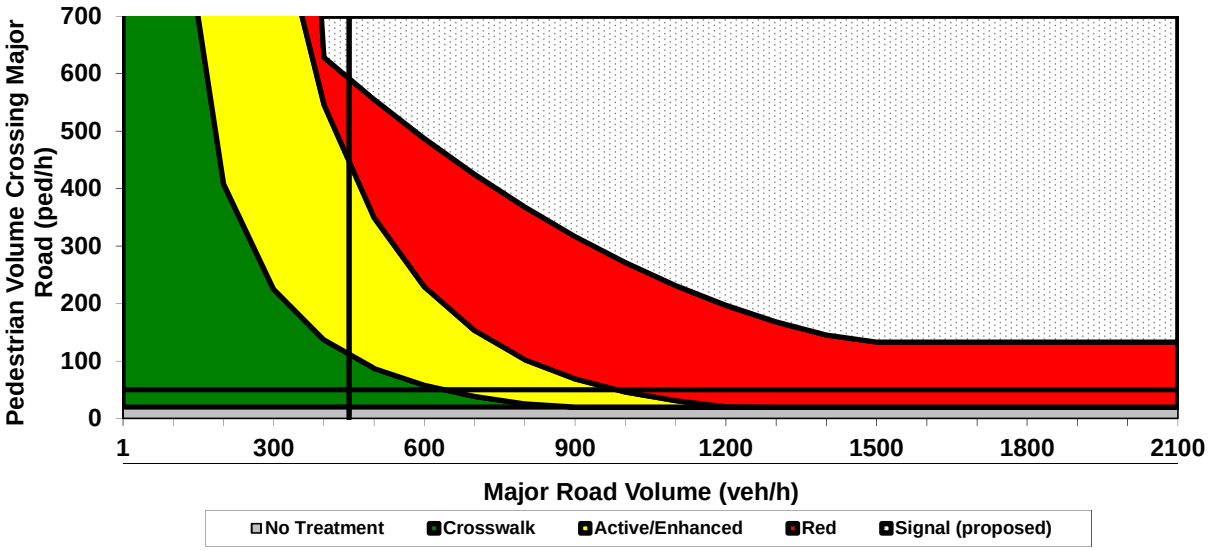
This spreadsheet is still under development, please inform TTI if errors are identified.

Key

- Blue fields contain descriptive information.
- Green fields are required and must be completed.
- Tan fields are adjustments that are filled out only under certain conditions (follow instructions to the left of the cell).
- Gray fields are automatically calculated and should not be edited.

Analyst and Site Information			
Analyst	DKS Associates - ELV	Major Street	SW Langer Farms Pkwy
Analysis Date	May 11, 2015	Minor Street or Location	Target/Walmart Driveway
Data Collection Date		Peak Hour	Future Peak

Step 1: Select worksheet:		
Posted or statutory speed limit (or 85th percentile speed) on the major street (mph)	*1a*	33
Is the population of the surrounding area <10,000? (enter ***YES*** or ***NO***)	*1b*	NO
Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a traffic control device?		
Peak-hour pedestrian volume (ped/h), V_p	*2a*	50
Result: Go to step 3.		
Step 3: Does the crossing meet the pedestrian warrant for a traffic signal?		
Major road volume, total of both approaches during peak hour (veh/h), $V_{maj\text{-}s}$	*3a*	450
[Calculated automatically] Preliminary (before min. threshold) peak hour pedestrian volume to meet warrant	*3b*	591
[Calculated automatically] Minimum required peak hour pedestrian volume to meet traffic signal warrant	*3c*	591
Is 15th percentile crossing speed of pedestrians less than 3.5 ft/s (1.1 m/s)? (enter ***YES*** or ***NO***)	*3d*	NO
If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce *3c* by up to 50%. — % rate of reduction for *3c* (up to 50%)	*3e*	0%
If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce *3c* by up to 50%. — Reduced value or *3c*	*3f*	591
Result: The signal warrant is not met. Go to step 4.		
Step 4: Estimate pedestrian delay.		
Pedestrian crossing distance, curb to curb (ft), L	*4a*	50
Pedestrian walking speed (ft/s), S_p (suggested speed = 3.5 ft/s)	*4b*	3.5
Pedestrian start-up time and end clearance time (s), t_s (suggested start-up time = 3 sec)	*4c*	3
[Calculated automatically] Critical gap required for crossing pedestrian (s), t_c	*4d*	17
Major road volume, total both approaches OR approach being crossed if raised median island is present, during peak hour (veh/h), $V_{maj\text{-}d}$	*4e*	450
Major road flow rate (veh/s), v	*4f*	0.13
Average pedestrian delay (s/person), d_p	*4g*	48
Total pedestrian delay (h), D_p The value in 4h is the calculated estimated delay for all pedestrians crossing the major roadway without a crossing treatment (assumes 0% compliance). If the actual total pedestrian delay has been measured at the site, that value can be entered in 4i to replace the calculated value in 4h.	*4h*	0.7
	4i	
Step 5: Select treatment based up on total pedestrian delay and expected motorist compliance.		
Expected motorist compliance at pedestrian crossings in region: enter ***HIGH for High Compliance*** or ***LOW for Low Compliance***	*5a*	LOW
Treatment Category:	**CROSSWALK**	



This worksheet provides general recommendations on pedestrian crossing treatments to consider at unsignalized intersections; in all cases, engineering judgment should be used in selecting a specific treatment for installation. This worksheet does not apply to school crossings. In addition to the results provided by this worksheet, users should consider whether a pedestrian treatment could present an increased safety risk to pedestrians, such as where there is poor sight distance, complex geometrics, or nearby traffic signals.

Spreadsheet developed by
Texas Transportation Institute

Printed 6/12/2015

PED-CROSSING v 0.5
(Released August 2007)

APPENDIX 2E

COST ESTIMATES

City of Sherwood Cost Estimate

5/29/15 - DRAFT

Project Name: SW Langer Farms Parkway Pedestrian Crossing Review

Project Description: Crosswalk

Construction Items and Descriptions	Unit	Qty	Unit Cost	Total Cost
Site Preparation				
Mobilization (7% of Construction Sub-Total)	LS	1	$694	$694
Erosion Control (1% of Construction Sub-Total)	LS	1	$99	$99
Clearing & Grubbing (2.5% of Construction Sub-Total)	LS	1	$248	$248
Temporary Protection & Traffic Control (3% of Contruction Sub-Total)	LS	1	$297	$297
Removal of Structures and Obstructions (4% of Construction Sub-Total)	LS	1	$396	$396
Roadway Elements				
Pavement - New Road	SF		$5	$0
Pavement - Resurfacing	SF		$2	$0
Curb and Gutter	LF		$25	$0
Sidewalk	SF		$7	$0
Concrete Sidewalk Ramp	EA	2	$1,950	$3,900
Curb Extension or Modification	EA		$10,000	$0
Shared-Use Paths	SF		$2	$0
Modify Driveway	EA		$3,025	$0
Retaining Wall	Vert SF		$100	$0
Bridge	SF		$250	$0
Street Furnishing (Bike Racks, Trash Cans, Benches)	LF		$15	$0
Utility and Drainage				
Utility Relocation - Overhead	LF		$100	$0
Drainage System Installed	LF		$145	$0
Drainage System Modified	LF		$80	$0
Stormwater Treatment Facility	SF		$35	$0
Right-of-Way Development				
Landscaping	LF	40	$34	$1,360
Traffic Elements				
Traffic Signal (Installation)	EA		$280,000	$0
Traffic Signal (Modification per pole)	EA		$50,000	$0
Rectangular Rapid Flash Beacons (RRFB)	LS		$40,000	$0
Striping (Crosswalk + Stop Bar)	SQFT	272	$10	$2,720
Signage	LS	2	$966	$1,932
Street Lighting (Cobrahead)	LF		$130	$0
Street Lighting (Ornamental)	LF		$230	$0
Other Construction Items				
Other				$0
Other				$0

Construction Cost Subtotal	**$11,646**

Constuction Contingency (30% of Construction Cost Subtotal)	LS	1	$3,494	$3,494
Engineering Design and Construction Management (45% of Construction Cost Subtotal)	LS	1	$5,241	$5,241
Land Acquisition Costs				
ROW Acquisition	SF		$15	$0

Total Project Cost:	**$20,381**

Notes: All unit costs were obtained from PBOT Estimate Template Master.

City of Sherwood Cost Estimate

5/29/15 - DRAFT

Project Name: SW Langer Farms Parkway Pedestrian Crossing Review

Project Description: Rectangular Rapid Flashing Beacon

Construction Items and Descriptions	Unit	Qty	Unit Cost	Total Cost
Site Preparation				
Mobilization (7% of Construction Sub-Total)	LS	1	$3,513	$3,513
Erosion Control (1% of Construction Sub-Total)	LS	1	$502	$502
Clearing & Grubbing (2.5% of Construction Sub-Total)	LS	1	$1,255	$1,255
Temporary Protection & Traffic Control (3% of Contruction Sub-Total)	LS	1	$1,506	$1,506
Removal of Structures and Obstructions (4% of Construction Sub-Total)	LS	1	$2,008	$2,008
Roadway Elements				
Pavement - New Road	SF		$5	$0
Pavement - Resurfacing	SF		$2	$0
Curb and Gutter	LF		$25	$0
Sidewalk	SF		$7	$0
Concrete Sidewalk Ramp	EA	2	$1,950	$3,900
Curb Extension or Modification	EA		$10,000	$0
Shared-Use Paths	SF		$2	$0
Modify Driveway	EA		$3,025	$0
Retaining Wall	Vert SF		$100	$0
Bridge	SF		$250	$0
Street Furnishing (Bike Racks, Trash Cans, Benches)	LF		$15	$0
Utility and Drainage				
Utility Relocation - Overhead	LF		$100	$0
Drainage System Installed	LF		$145	$0
Drainage System Modified	LF		$80	$0
Stormwater Treatment Facility	SF		$35	$0
Right-of-Way Development				
Landscaping	LF	40	$34	$1,360
Traffic Elements				
Traffic Signal (Installation)	EA		$280,000	$0
Traffic Signal (Modification per pole)	EA		$50,000	$0
Rectangular Rapid Flash Beacons (RRFB)	LS	1	$40,000	$40,000
Striping (Crosswalk + Stop Bar)	SQFT	300	$10	$3,000
Signage	LS	2	$966	$1,932
Street Lighting (Cobrahead)	LF		$130	$0
Street Lighting (Ornamental)	LF		$230	$0
Other Construction Items				
Other				$0
Other				$0

Construction Cost Subtotal	**$58,975**

Constuction Contingency (30% of Construction Cost Subtotal)	LS	1	$17,693	$17,693
Engineering Design and Construction Management (45% of Construction Cost Subtotal)	LS	1	$26,539	$26,539
Land Acquisition Costs				
ROW Acquisition	SF		$15	$0

Total Project Cost:	**$103,206**

Notes: All unit costs were obtained from PBOT Estimate Template Master.

City of Sherwood Oregon
Home of the Tualatin River National Wildlife Refuge

RESOLUTION 2016-013

AUTHORIZING THE CITY MANAGER TO ENTER INTO A PROFESSIONAL SERVICES CONTRACT WITH DKS ASSOCIATES FOR LANGER FARMS PARKWAY PEDESTRIAN CROSSING PLANS, SPECIFICATIONS & ESTIMATES

WHEREAS, in response to citizen complaints regarding the safety of crossing Langer Farms Parkway near the access drives of Target store site and Parkway Village center, in March 2015 City Council directed City staff to conduct a transportation analysis of Langer Farms Parkway with the intent to determine if a mid-block pedestrian crossing was warranted and technically feasible; and

WHEREAS, City staff directed DKS Associates (DKS) to conduct an analysis under an existing On-Call Transportation Engineering contract (Resolution 2011-058); and

WHEREAS, DKS completed the analysis and submitted a report (dated June 12, 2015), wherein the report's conclusions stated that a pedestrian crossing of Langer Farms Parkway located near the driveway accesses of the Parkway Village and Target store site was warranted and technically feasible; and

WHEREAS, the City has determined there are funds available to design and construct the project, and engineering design work is required to progress the project further; and

WHEREAS, the pedestrian crossing design is a specialized engineering project, and ORS 279C.115(2) provides that *"A contracting agency may enter into a contract for architectural, engineering, photogrammetric mapping, transportation planning or land surveying services or related services directly with a consultant if the project described in the contract consists of work that has been substantially described, planned or otherwise previously studied or rendered in an earlier contract with the consultant that was awarded under rules adopted under ORS 279A.065 and the new contract is a continuation of the project."***;** and

WHEREAS, the proposed professional services contract with DKS is predicated on the previous crossing analysis and report performed by DKS; and

WHEREAS, DKS has provided a Scope of Work and Fee letter (dated February 19, 2016, attached as Exhibit A).

NOW, THEREFORE, THE CITY OF SHERWOOD RESOLVES AS FOLLOWS:

Section 1. The City Council authorizes the City Manager to enter into a contract with DKS Associates to provide professional engineering design and construction administration services for the project described in Exhibits A and B compensated on a time and materials basis for a maximum not to exceed amount of $34,500.

Section 2. Subject to limitations of City and State contracting rules and other applicable laws, the City Manager is authorized to execute contract changes orders with DKS Associates up to 10% ($3,450) of the contract amount identified in Section 1 above for unanticipated site issues affecting design, for a total budgeted professional engineering services contract amount of $37,950.

Section 3. This Resolution shall be effective upon its approval and adoption.

Duly passed by the City Council this 5th of April, 2016.

_____
Krisanna Clark, Mayor

Attest:

_____
Sylvia Murphy, MMC, City Recorder

EXHIBIT A

DKS

February 3, 2016

720 SW Washington St.
Suite 500
Portland, OR 97205
503.243.3500
www.dksassociates.com

Bob Galati
City of Sherwood
22560 SW Pine Street
Sherwood, OR 97140

Subject: Sherwood Langer Farms Parkway Ped Crossing PS&E

Dear Bob:

Per your email January 13, 2016, we have provided this scope of services. The City desires engineering design services for the rectangular rapid flashing beacon (RRFB) pedestrian crossing enhancement on Langer Farms Parkway. A conceptual overview of this improvement was recommended based on our prior pedestrian crossing analysis[1]. The design support would include PS&E for the RRFB, signage, and the solar-powered speed registers.

In addition to the traffic engineering services provided by our staff, we would deliver the following services with the support of civil engineering support provided by Harper Houf Peterson Righellis (HHPR), Inc. The following tasks and budget include the overall scope and fee.

The table below summarizes the support that would be required for this analysis, which is organized into the following general tasks:

Task 1) Project Management

Task 2) Meetings

Task 3) Data Collection

Task 4) Preliminary (Existing Concept, 30%) Design

Task 5) Final Design (90%, 100% Bid-Ready PS&E)

Task 6) Bid and Construction Assistance

[1] Memorandum: SW Langer Farms Parkway Pedestrian Crossing Review, prepared by DKS Associates, June 12, 2015.

Task	Description

1 Project Management	• On-going project management duties including:
	  ○ project coordination,
	  ○ prepare and maintain a project schedule (including key milestones and deliverables),
	  ○ monthly invoices, and
	  ○ quality assurance/quality control program.
	
	DELIVERABLES: Project schedule

2 Meetings	• Attendance at up to 4 coordination meetings with City staff at City Hall. These meetings are assumed to include:
	  ○ Project Kick-off Meeting (1), which may include review of the 30% concept that has been developed through the prior traffic analysis.
	  ○ General Team Meetings (1) as needed to review work in progress or address design details.
	  ○ Design Review Meetings (2), at 90% and 100% PS&E (Note: Review of 30% assumed to include team review of 30% concept developed during traffic analysis).
	
	No specific public involvement or utility meetings are assumed, however the timing and nature of the above meetings can be adjusted based on project need and is assumed to not exceed 4 total meetings. It is assumed that HHPR will attend one meeting.
	
	DELIVERABLES: Meeting attendance at up to 4 meetings.

3 Data Collection	• *NOTE: All traffic data (including speeds and volumes) has been collected previously during the prior traffic analysis.*
	• Field Visits: Visit site, take photos, confirm potential conflicts, and note any visible changes that have occurred since the traffic analysis was performed. Field visit may be conducted with staff in conjunction with project kick off meeting.
	• Topographic Survey (HHPR):
	  ○ Limits of the topographic survey will be the south returns of the two commercial center driveways and improvements between the back of sidewalk on both sides of the street and extending a distance approximately 50' south. Submit One Call public utility locate request to identify existing public utilities on subject property.
	  ○ Topographic survey to include, but not limited to, visible utilities, locate paint markings, buildings, curbs, sidewalks, fences, parking lot, walls, trees, and adequate spot elevations to produce a 1 foot contour interval base map.
	  ○ Survey will be supplemented by design and as-built information from the construction of Langer Farms Parkway.
	  ○ Prepare topographic design base map to include items listed above in AutoCAD

	C3D 2016. DELIVERABLES: field visit, topographic survey
4 Preliminary Design	*Note: It is assumed that the existing concept will serve as the preliminary design and will be reviewed during the kick off meeting with staff.* *DELIVERABLES: none*

5 Final Design	*Note: Due to the limited design area and scope, it is assumed that 60% design will not be provided. The design is assumed to advance from the 30% (concept level, previously prepared) to 90% design.*
	
	• *90% Design Submittal: Prepare construction plans, specifications (PS&E) and estimate for improvements including: RRFB, signing and striping, speed feedback signs, illumination, and two new curb ramps on either side of Langer Farms Parkway. Plans will include an overall construction plan and grading details for the two ramps. Plans and specifications will meet ODOT and City of Sherwood standards. The following plan sheets would be prepared:*
	  ○ *Civil plans (2)*
	  ○ *Signing and Striping plans and details (2)*
	  ○ *RRFB plans and details (2)*
	  ○ *Illumination plans and details (2)*
	  The design team will coordinate with relevant utilities to resolve any potential conflicts.
	• *Final Design Submittal: Prepare final (stamped and signed) construction plans, special provisions, and estimate based on City review comments.*
	
	DELIVERABLES:
	
	• *90% PS&E*
	• *Final PS&E (11"x17" stamped paper copies)*

6 Bid and Construction Assistance	• *Provide assistance during bidding and construction including assistance with contractor questions/RFI, submittal review and one site visit. Preparation of as-builts are not included.* *DELIVERABLES:* • *RFI and submittal responses* • *One site visit*

Assumptions:

1. Allow 10 business days for locate request to be completed.

2. Horizontal and vertical datum will be based on HHPR control in the area established with the Adams Avenue (Langer Farms Parkway) construction and Tualatin Sherwood Road design.

3. No Title Report will be reviewed and no easements located as a part of this survey.

4. Permit fees will be paid by Owner.

5. Schedule will be developed at the project onset with project team.

6. No new traffic data will be collected.

7. No new traffic analysis will be conducted.

8. Contract documents prepared by City of Sherwood except for plans and special plans.

Level of Effort:

Should other tasks, meetings or reviews be requested, they will be addressed in subsequent task scopes on an item-by-item basis.

AGREEMENT

In consideration of the performance of these services, DKS Associates will be compensated on a time and materials basis in accordance consistent with the terms of our July 19, 2011 (amended on July 19, 2015) On Call Traffic Engineering Services agreement (Account #6190, Dept. 57, Vendor #10126) for a maximum fee not to exceed $34,550.00.

If this agreement is acceptable, please have a duly authorized official of your agency sign below and return one original for our files. That signature will constitute formal authorization to proceed with the services according to the terms outlined.

If you have any questions about this scope of services, please call me or Garth Appanaitis.

Sincerely,

DKS Associates	*Approved by:*
A Corporation	City of Sherwood

Peter L. Coffey, PE

Principal

By: _____

Title Date

City Council Meeting Date: April 5, 2016

Agenda Item: Consent Agenda

TO: Sherwood City Council

FROM: Craig Sheldon, Public Works Director
Through: Joseph Gall, ICMA-CM, City Manager

SUBJECT: **Resolution 2016-014, authorizing the City Manager to execute a construction contract for Tualatin Street and Highland Drive Storm Sewer and Pavement Rehabilitation Project**

Issue:
Should the City Council authorize the City Manager to execute a construction contract with the lowest responsive bidder from a March 24, 2016 bid opening for the construction of a storm sewer and pavement rehabilitation within SW Tualatin Street and SW Highland Drive as well as pavement rehabilitation within SW Washington Street?

Background:
SW Tualatin Street southwest of SW Washington Street is currently a gravel street with drainage issues. Neighboring properties on the northwest side of the street receive water from the runoff from the existing street causing significant issues. The proposed street work will consist of cement treatment of the existing gravel street with placement of a new pavement surface at a width of 28 feet for the 130 feet nearest the Tualatin Street/Washington Street intersection. This will allow for the parking of approximately 4 vehicles on the southeast side of the new street. The last 80 feet of SW Tualatin Street will be paved to a width of 20 feet which will allow the existing fir trees to remain and more closely match the current configuration of the street. The surface of the street will shed drain to the northwestern curb line. The street will not be extended to SW Park Row Avenue as part of this project. The new storm sewer for SW Tualatin Street will involve extending a storm sewer within SW Park Row Avenue to serve SW Tualatin Street.

SW Washington Street between SW Tualatin Street to SW Willamette Street currently has a deficient roadway section with gravel parking on the southwest side of the street. The proposed street work will consist of cement treatment of the existing base with placement of a new pavement surface at a half street width of 18 feet from centerline on the southwest side to allow for on-street parking. The northeast side will receive new curbs at the location of the existing deficient curbing. New catch basins will be installed at the southeast side of the SW Willamette Street/SW Washington Street intersection.

SW Highland Drive from SW Willamette Street to SW Pine Street currently has a deficient storm sewer system and pavement surface. The proposed street work will consist of cement treatment of the existing base with placement of a new pavement at a width of 22 feet. New storm sewer will also be constructed.

The City solicited competitive bids from contractors and opened bids on March 24, 2016 to determine the lowest responsive bid. The seven (7) day protest period concluded with no protests. The lowest responsive bidder was C & M Excavation and Utilities with a bid of $574,208.63.

Work is expected to begin around April 11, 2016 and to be completed by the end of June, 2016. Notification has been provided to area residents of the upcoming work.

Staff requests that Sherwood City Council pass a resolution authorizing the City Manager to execute a construction contract with the lowest responsive bidder (C & M Excavation and Utilities) in Base Contract Amount of $267,583.19 with Construction Contingency of $40,137.48 (15%) of the Base Contract Amount for the Tualatin Street Project (includes Washington Street) and a Base Contract Amount of $306,625.44 with Construction Contingency of $45,993.82 (15%) of the Base Contract Amount for the Highland Drive Project.

Financial Impacts:

The construction of the storm improvements has a budgeted Base Contract Amount of $267,583.19 with Construction Contingency of $40,137.48 (15%) of the Base Contract Amount for the Tualatin Street Project (includes Washington Street) and a Base Contract Amount of $306,625.44 with Construction Contingency of $45,993.82 (15%) of the Base Contract Amount for the Highland Drive Project. Funding for the project was included in the FY2015-16 budget.

Recommendation:

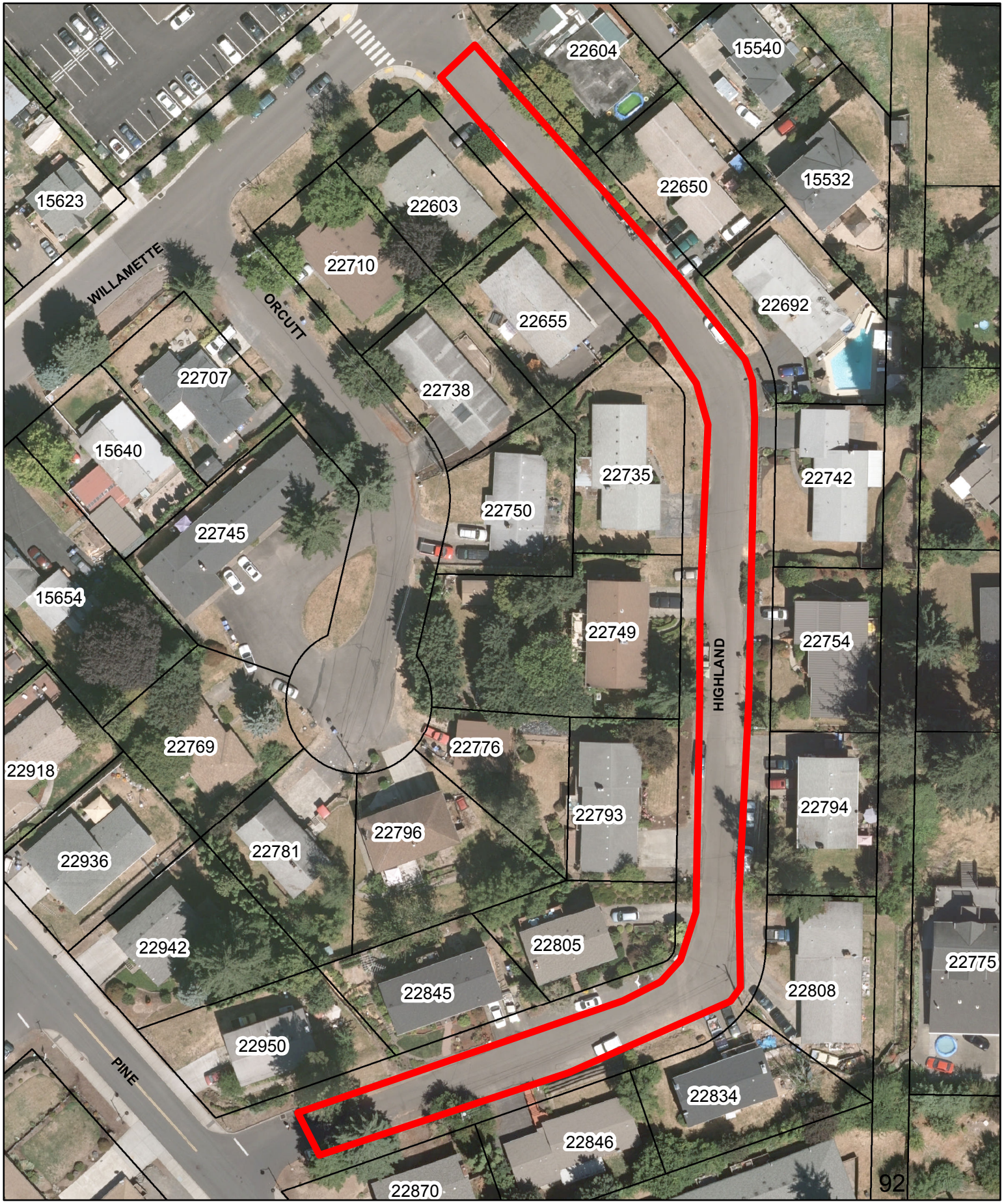
Staff respectfully requests adoption of Resolution 2016-014 authorizing the City Manager to execute a construction contract for the Tualatin Street and Highland Drive Storm Sewer and Pavement Rehabilitation Project.

Highland Dr Rehabilitation

Date: 3/25/2016

N

1 inch = 69 feet



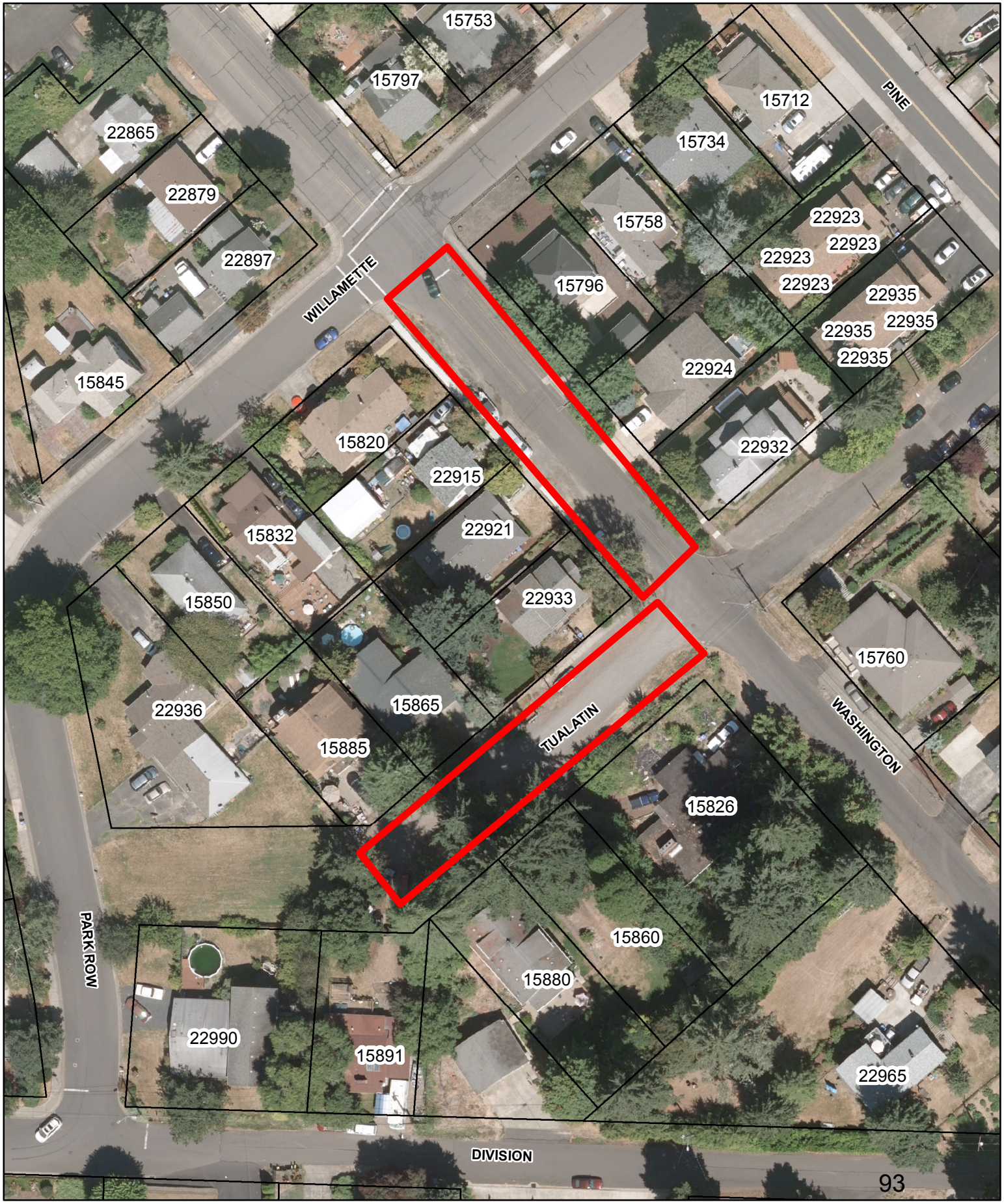
Tualatin Street & Washington Street Rehabilitation Project Area

City of Sherwood Oregon

Date: 3/25/2016

N

1 inch = 69 feet



City of Sherwood Oregon

Home of the Tualatin River National Wildlife Refuge

RESOLUTION 2016-014

AUTHORIZING THE CITY MANAGER TO EXECUTE A CONSTRUCTION CONTRACT FOR THE TUALATIN STREET AND HIGHLAND DRIVE STORM SEWER AND PAVEMENT REHABILITATION PROJECT

WHEREAS, the City has identified the storm sewer and pavement on SW Tualatin Street and SW Highland Drive and the pavement on SW Washington Street to be deficient and in need of replacement; and

WHEREAS, the City completed the design and produced bid documents to solicit contractors using a competitive bidding process meeting the requirements of local and state contracting statutes and rules (ORS 279C, OAR 137-049); and

WHEREAS, the City opened bids on March 24, 2016 and issued the Notice of Intent to Award with the mandatory seven (7) day protest period being completed without protest; and

WHEREAS, the City has budgeted for the construction cost of this project within the FY2015-16 budget, and C & M Excavation and Utilities has been identified as the lowest responsive bidder; and

WHEREAS, Staff recommends City Council to authorize the City Manager to execute a construction contract with the lowest responsive bidder from the March 24, 2016 bid opening (C & M Excavation and Utilities) in a Base Contract Amount of $267,583.19 with Construction Contingency of $40,137.48 (15%) of the Base Contract Amount for the Tualatin Street Project (includes Washington Street) and a Base Contract Amount of $306,625.44 with Construction Contingency of $45,993.82 (15%) of the Base Contract Amount for the Highland Drive Project.

NOW, THEREFORE, THE CITY OF SHERWOOD RESOLVES AS FOLLOWS:

Section 1: The City Manager is hereby authorized to execute a construction contract with the lowest responsive bidder (C & M Excavation and Utilities) in a Base Contract Amount of $267,583.19 with Construction Contingency of $40,137.48 (15%) of the Base Contract Amount for the Tualatin Street Storm Sewer and Pavement Rehabilitation Project (includes Washington Street) and a Base Contract Amount of $306,625.44 with Construction Contingency of $45,993.82 (15%) of the Base Contract Amount for the Highland Drive Storm Sewer and Pavement Rehabilitation Project.

Section 2: This Resolution shall be in effect upon its approval and adoption.

Duly passed by the City Council this 5th day of April 2016.

_____
Krisanna Clark, Mayor

Attest:

_____
Sylvia Murphy, MMC, City Recorder

Council Meeting Date: April 5, 2016

Agenda Item: Consent Agenda

TO: Sherwood City Council

FROM: Adrienne Doman Calkins, Library Manager
Through: Kristen Switzer, Community Services Director and Joseph Gall, ICMA-CM, City Manager

SUBJECT: Resolution 2016-015, Appointing Rose Hulett to the Library Advisory Board

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ISSUE:
Should the City Council appoint Rose Hulett to the Library Advisory Board?

BACKGROUND:
The Library Advisory Board currently has one open position, vacated by Diana Stanley, who served two full 4-year terms, effective this March.

Based on her interview and application, Council President and Liaison Jennifer Harris, Library Advisory Board Chair Christine McLaughlin, and I unanimously make our recommendation to appoint Rose Hulett to the Library Advisory Board.

Rose Hulett has an extensive background in Human Resources, management, leadership, strategic planning, and local government. Hulett has been a resident of Sherwood for nearly two years. She loves the community and the library and has already exhibited a deep connection to our services.

According to Chapter 2.12 of the Sherwood Municipal Code, members of the Library Advisory Board shall be appointed by the Mayor with consent of the City Council.

RECOMMENDATION:
Staff respectfully recommends approval of Resolution 2016-015, appointing Rose Hulett to the Library Advisory Board.

City of Sherwood Oregon

Home of the Tualatin River National Wildlife Refuge

RESOLUTION 2016-015

APPOINTING ROSE HULETT TO THE LIBRARY ADVISORY BOARD

WHEREAS, there is currently one seat vacant for a member of the Library Advisory Board due to a vacant position after Diana Stanley served two full terms;

WHEREAS, Rose Hulett has applied for the Library Advisory Board; and

WHEREAS, the applicant has been endorsed by the Council President and liaison, Board chairperson, staff liaison and by the Mayor; and

WHEREAS, Rose Hulett currently resides in Sherwood, has professional management, leadership and strategic planning experience, as well as volunteer and board experience, and is an enthusiastic supporter of Sherwood Public Library,

NOW, THEREFORE, THE CITY OF SHERWOOD RESOLVES AS FOLLOWS:

Section 1. Rose Hulett is hereby appointed to the Library Advisory Board for a four year term beginning April 2016 and ending April 2020.

Section 2: This Resolution shall be effective upon its approval and adoption.

Duly passed by the City Council this 5th day of April 2016.

_____
Krisanna Clark, Mayor

Attest:

_____
Sylvia Murphy, MMC, City Recorder

City Council Meeting Date: April 5, 2016

Agenda Item: New Business

TO: Sherwood City Council

FROM: Josh Soper, City Attorney
Through: Joseph Gall, ICMA-CM, City Manager

SUBJECT: **Resolution 2016-016, Approving Ballot Title and Explanatory Statement and Submitting to the Voters Ordinance 2016-003, Imposing a Three Percent Tax on the Sale of Marijuana Items by a Marijuana Retailer**

Issue:
Shall the City Council approve the ballot title and explanatory statement for, and formally submit to the voters at the November 2016 election, Ordinance 2016-003, which imposes a 3% tax on the sale of recreational marijuana items by recreational marijuana retailers?

Background:
Under HB 3400 (2015), cities may impose up to a 3% local tax on sales of marijuana items made by those with recreational marijuana retail licenses by referring an ordinance to the voters at a statewide general election. The first opportunity for such an election is therefore November 2016.

Council adopted such an ordinance imposing a 3% tax on January 19, 2016, and because this ordinance by law must be referred to the voters, staff has prepared a ballot title and explanatory statement. The attached resolution approves the ballot title and explanatory statement and formally refers the matter to the November 2016 election.

Subsequent to Council adopting Ordinance 2016-003, the Oregon Legislature approved SB 1601 (2016), which allows recreational marijuana retailers to sell marijuana items to medical marijuana cardholders without collecting any state or local taxes. The attached ballot title and explanatory statement therefore clarify that the local tax would apply only to recreational marijuana sales by recreational marijuana retailers.

State law also provides a mechanism for prohibiting the establishment of certain marijuana businesses via an ordinance that must also be approved by the voters, but states that a city that adopts such a prohibition may not also impose a local tax. An ordinance creating such a prohibition is also before Council for approval of a ballot title and explanatory statement, and formal referral to voters. The proposed tax ordinance therefore will not be effective if the prohibition ordinance is approved by voters, even if the tax ordinance is also approved. Statements to that effect are included in the ballot titles and explanatory statements for both ordinances.

Financial Impacts:

If this ordinance is approved by voters, and the prohibition ordinance on the same ballot is not also approved by voters, it will likely eventually result in a revenue increase for the City. The amount of revenue is dependent on the number of recreational marijuana retail stores in the City (currently zero) and their sales figures. Because this is a new industry, an accurate estimate is impossible at this time.

Recommendation:

Staff respectfully recommends Council adopt Resolution 2016-016, Approving Ballot Title and Explanatory Statement and Submitting to the Voters Ordinance 2016-003, Imposing a Three Percent Tax on the Sale of Marijuana Items by a Marijuana Retailer

City of Sherwood Oregon
Home of the Tualatin River National Wildlife Refuge

RESOLUTION 2016-016

APPROVING BALLOT TITLE AND EXPLANATORY STATEMENT AND SUBMITTING TO THE VOTERS ORDINANCE 2016-003, IMPOSING A THREE PERCENT TAX ON THE SALE OF MARIJUANA ITEMS BY A MARIJUANA RETAILER

WHEREAS, section 34a of House Bill 3400 (2015) provides that a city council may adopt an ordinance to be referred to the voters that imposes up to a three percent tax or fee on the sale of marijuana items by a marijuana retailer in the area subject to the jurisdiction of the city; and

WHEREAS, the Sherwood City Council, on January 19, 2016, adopted Ordinance 2016-003, Imposing a Three Percent Tax on the Sale of Marijuana Items by a Marijuana Retailer and Referring Ordinance; and

WHEREAS, Senate Bill 1601 (2016) prohibits cities that impose such a tax from collecting the tax in the case of sales of marijuana items by recreational marijuana retailers to medical marijuana cardholders; and

WHEREAS, the Sherwood City Council wants to refer the question of whether to impose a tax on the sale of recreational marijuana items by a recreational marijuana retailer in the area subject to the jurisdiction of the City to the voters of the City of Sherwood;

NOW, THEREFORE, THE CITY OF SHERWOOD RESOLVES AS FOLLOWS:

Section 1. An election is called for the City of Sherwood, Washington County, Oregon for the purpose of submitting to City voters Ordinance 2016-003, Imposing a Three Percent Tax on the Sale of Marijuana Items by a Marijuana Retailer and Referring Ordinance

Section 2. Tuesday, November 8, 2016 is designated as the date for holding the election for voting on the ordinance.

Section 3. The election will be conducted by the Washington County Elections Department.

Section 4. The precincts for this election will include all of the territory within the corporate limits of the City of Sherwood.

Section 5. The Ballot Title and Explanatory Statement attached as Exhibits 1 and 2, respectively, are hereby approved.

Section 6. The City Recorder will publish the Ballot Title as required by state law. The City of Sherwood authorizes the City Recorder or her designee to act on behalf of the City and to take such further action as is necessary to carry out the intent and purposes set forth herein, in compliance with the applicable provisions of law.

Section 7. This Resolution shall be effective upon its approval and adoption.

Duly passed by the City Council this 5th day of April, 2016.

_____
Krisanna Clark, Mayor

Attest:

_____
Sylvia Murphy, MMC, City Recorder

Exhibit 1
Ballot Title

CAPTION: City tax on marijuana retailers' sales of recreational marijuana items

QUESTION: Shall Sherwood impose a three percent tax on sales of recreational marijuana items by recreational marijuana retailers in the city?

SUMMARY: Under state law, a city council may adopt an ordinance to be referred to the voters of the city imposing up to a three percent tax on the sale of recreational marijuana items in the city by licensed recreational marijuana retailers. The Sherwood City Council adopted such an ordinance and referred it to this election.

Approval of this measure would impose a three percent tax on the sale of recreational marijuana items in the city by licensed recreational marijuana retailers. The tax would be collected at the point of sale and remitted by the retailers.

Under state law, a city that prohibits the establishment of one or more types of marijuana facilities in the city may not impose a local tax on the sale of recreational marijuana items. A separate measure on this ballot would prohibit the establishment of certain recreational marijuana facilities in Sherwood. This local tax measure would therefore become operative only if it is approved by voters and the measure prohibiting certain recreational marijuana facilities is not approved.

Exhibit 2
Explanatory Statement

Approval of this measure would impose a three percent tax on the sale of recreational marijuana items by recreational marijuana retailers within the City of Sherwood. The tax would be collected at the point of sale and remitted by the retailers. There are no restrictions on how the city may use the revenues generated by this tax.

Under Measure 91, adopted by Oregon voters in November 2014, the Oregon Liquor Control Commission must license the retail sale of recreational marijuana. The Oregon Legislature subsequently provided that a city council may adopt an ordinance imposing up to a three percent tax on the sale of recreational marijuana items (which include marijuana concentrates, extracts, edibles, and other products intended for human consumption and use) by licensed recreational marijuana retailers in the city, but the city council must refer that ordinance to the city's voters at a statewide general election. The Sherwood City Council adopted an ordinance imposing a three percent tax on the sale of recreational marijuana items by licensed recreational marijuana retailers in the city and, as a result, has referred this measure to the voters.

Under state law, a city that prohibits the establishment of one or more types of marijuana facilities in the city may not impose a local tax on the sale of recreational marijuana items. A separate measure on this ballot would prohibit the establishment of certain recreational marijuana facilities in Sherwood. This local tax measure would therefore become operative only if it is approved by voters and the measure prohibiting certain recreational marijuana facilities is not approved.

City Council Meeting Date: April 5, 2016

Agenda Item: New Business

TO: Sherwood City Council

FROM: Josh Soper, City Attorney
Through: Joseph Gall, ICMA-CM, City Manager

SUBJECT: **Resolution 2016-017, Approving Ballot Title and Explanatory Statement and Submitting to the Voters Ordinance 2016-002, Declaring a Ban on Recreational Marijuana Producers, Recreational Marijuana Processors, Recreational Marijuana Wholesalers, and Recreational Marijuana Retailers**

Issue:
Shall the City Council approve the ballot title and explanatory statement for, and formally submit to the voters at the November 2016 election, Ordinance 2016-002, which declares a ban on specified categories of recreational marijuana-related businesses?

Background:
Under HB 3400 (2015), cities may impose a ban on medical marijuana processing sites, medical marijuana dispensaries, recreational marijuana producers, recreational marijuana processors, recreational marijuana wholesalers, and/or recreational marijuana retailers by referring an ordinance to the city's voters at a statewide general election. The first opportunity for such an election is therefore November 2016.

Council adopted such an ordinance banning all of the above categories of recreational marijuana-related businesses on January 19, 2016, and because this ordinance by law must be referred to the voters, staff has prepared a ballot title and explanatory statement. The attached resolution approves the ballot title and explanatory statement and formally refers the matter to the November 2016 election.

State law also provides a mechanism for imposing a local tax of up to 3% on the sale of marijuana items by recreational marijuana retailers via an ordinance that must also be approved by the voters, but states that a city that adopts a ban on any category of marijuana facilities may not also impose a tax. An ordinance creating such a tax is also before Council for approval of a ballot title and explanatory statement, and formal referral to the voters. The proposed tax ordinance therefore will not be effective if the prohibition ordinance is approved by voters, even if the tax ordinance is also approved. Statements to that effect are included in the ballot titles and explanatory statements for both ordinances.

Financial Impacts:
If this ordinance is approved by voters, it will prevent the City from imposing a local tax of up to 3% on marijuana sales by recreational marijuana retailers. It will also prevent the City from receiving its

share of the distribution of state marijuana tax revenues. Because this is a new industry, an accurate estimate of the potential loss of revenue is impossible at this time.

Recommendation:

Staff respectfully recommends Council adopt Resolution 2016-017, Approving Ballot Title and Explanatory Statement and Submitting to the Voters Ordinance 2016-002, Declaring a Ban on Recreational Marijuana Producers, Recreational Marijuana Processors, Recreational Marijuana Wholesalers, and Recreational Marijuana Retailers.

City of Sherwood Oregon
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RESOLUTION 2016-017

APPROVING BALLOT TITLE AND EXPLANATORY STATEMENT AND SUBMITTING TO THE VOTERS ORDINANCE 2016-002, DECLARING A BAN ON RECREATIONAL MARIJUANA PRODUCERS, RECREATIONAL MARIJUANA PROCESSORS, RECREATIONAL MARIJUANA WHOLESALERS, AND RECREATIONAL MARIJUANA RETAILERS

WHEREAS, Measure 91, which the voters adopted in November 2014, directs the Oregon Liquor Control Commission to license the production, processing, wholesale, and retail sale of recreational marijuana; and

WHEREAS, section 134 of HB 3400 (2015) provides that a city council may adopt an ordinance to be referred to the electors of the city prohibiting the establishment of certain state-licensed marijuana businesses in the area subject to the jurisdiction of the city; and

WHEREAS, the Sherwood City Council wants to refer the question of whether to prohibit recreational marijuana producers, processors, wholesalers, and retailers to the voters of the City of Sherwood; and

WHEREAS, the Sherwood City Council, on January 19, 2016, adopted Ordinance 2016-002, Declaring a Ban on Recreational Marijuana Producers, Recreational Marijuana Processors, Recreational Marijuana Wholesalers, and Recreational Marijuana Retailers; Referring Ordinance;

NOW, THEREFORE, THE CITY OF SHERWOOD RESOLVES AS FOLLOWS:

Section 1. An election is called for the City of Sherwood, Washington County, Oregon for the purpose of submitting to City voters Ordinance 2016-002, Declaring a Ban on Recreational Marijuana Producers, Recreational Marijuana Processors, Recreational Marijuana Wholesalers, and Recreational Marijuana Retailers.

Section 2. Tuesday, November 8, 2016 is designated as the date for holding the election for voting on the ordinance.

Section 3. The election will be conducted by the Washington County Elections Department.

Section 4. The precincts for this election will include all of the territory within the corporate limits of the City of Sherwood.

Section 5. The Ballot Title and Explanatory Statement attached as Exhibits 1 and 2, respectively, are hereby approved.

Section 6. The City Recorder will publish the Ballot Title as required by state law. The City of Sherwood authorizes the City Recorder or her designee to act on behalf of the City and to take such

further action as is necessary to carry out the intent and purposes set forth herein, in compliance with the applicable provisions of law.

Section 7. This Resolution shall be effective upon its approval and adoption.

Duly passed by the City Council this 5th day of April, 2016.

_____
Krisanna Clark, Mayor

Attest:

_____
Sylvia Murphy, MMC, City Recorder

Exhibit 1
Ballot Title

CAPTION: Prohibits certain recreational marijuana facilities in Sherwood

QUESTION: Shall recreational marijuana producers, processors, wholesalers, and retailers be prohibited in Sherwood?

SUMMARY: State law allows operation of licensed recreational marijuana producers, processors, wholesalers, and retailers. State law also provides that a city council may adopt an ordinance to be referred to the city's voters to prohibit the establishment of one or more of those categories of facilities within the city's boundaries. The Sherwood City Council adopted such an ordinance and referred it to this election.

Approval of this measure would prohibit the establishment and operation of recreational marijuana producers, processors, wholesalers, and retailers within the city. Medical marijuana facilities would not be affected.

If this measure is approved, the city will be ineligible to receive distributions of state marijuana tax revenue and will be unable to impose a local tax or fee on the sale of recreational marijuana items by recreational marijuana retailers. A separate measure on this ballot would impose such a local tax. If this measure prohibiting recreational marijuana facilities is approved by voters, the local tax measure will therefore have no effect even if it is also approved.

Exhibit 2
Explanatory Statement

Approval of this measure would prohibit the establishment and operation of certain recreational marijuana facilities within the City of Sherwood.

Measure 91, approved by Oregon voters in 2014, provides that the Oregon Liquor Control Commission will license recreational marijuana producers (those who manufacture, plant, cultivate, grow, or harvest marijuana), processors, wholesalers, and retailers. State law also provides that a city council may adopt an ordinance prohibiting the establishment of one or more of those categories of facilities within the city, but the council must refer the ordinance to the city's voters at a statewide general election. The Sherwood City Council has adopted an ordinance prohibiting the establishment and operation of recreational marijuana producers, processors, wholesalers, and retailers within the city and, as a result, has referred this measure to the voters.

If approved, this measure would prohibit recreational marijuana producers, processors, wholesalers, and retailers within the city. Medical marijuana facilities would not be affected by this measure.

Approval of this measure has revenue impacts. Currently, ten percent of state marijuana tax revenues will be distributed to cities to assist local law enforcement in performing their duties under Measure 91. If approved, this measure would make the city ineligible to receive those distributions of state marijuana tax revenues.

Additionally, state law provides that a city may impose up to a three percent local tax on the sale of recreational marijuana items by licensed recreational marijuana retailers in the city. However, state law also provides that a city that prohibits the establishment of recreational marijuana producers, processors, wholesalers, or retailers may not impose such a local tax. A separate measure on this ballot would impose a local tax on sales of recreational marijuana items by licensed recreational marijuana retailers. If this measure prohibiting certain recreational marijuana facilities is approved by voters, the local tax measure will have no effect even if it is also approved.

City of Sherwood Oregon

Home of the Tualatin River National Wildlife Refuge

RESOLUTION 2016-018

A RESOLUTION OPPOSING BALLOT MEASURE NO. 34-244

WHEREAS, the citizens of Sherwood elect members of the community to represent them on the Sherwood City Council once every four (4) years;

WHEREAS, Council members are obliged to review in detail and conduct extensive analysis of the operations of the City, including the budget and matters that effect the economics of its constituents;

WHEREAS, Council members debate to establish rates and fees that the citizens, including themselves, will be charged for certain capital improvements and services;

WHEREAS, it is the Council's belief that Measure 34-244 will result in significant financial and lifestyle impacts to its citizens by forcing the City to operate without the ability to raise fees (such as System Development Charges (SDCs) and rates charged for garbage, water, etc.) when there is a clear need to do so to adequately provide for the citizens of Sherwood;

WHEREAS, the Initiative will require that the City place any proposed rate hike or increase in fees greater than 2% on the ballot for public voting, thereby forcing the City to incur a cost of approximately $10,000 or more to put the issue on the ballot (based on recent election costs), which contradicts the purpose of the Initiative to control costs and fees;

WHEREAS, Measure 34-344 requires that our City Charter be amended to include a required double majority vote to approve any new fee or fees by more than 2%, whereby the majority of registered voters have to vote and a majority of those who cast their ballots must approve the proposed increase in fees and/or rates;

WHEREAS, given Measure 34-244's double-majority requirement and past voter turnout showing that there has never been a majority of the electorate in Sherwood, it is predicted that the City will be prevented from funding capital projects and improvements needed for its citizens;

WHEREAS, Council members, in acknowledging their responsibility for which the citizens have entrusted them for years, desire to formally state their opposition to initiative #34-244 on the May 2016 ballot.

NOW THEREFORE, it is resolved by the City of Sherwood as follows:

1. City of Sherwood City Council opposes the passage of Measure 34-244; and
2. The City of Sherwood City Council urges all Sherwood Citizens to vote NO on Measure 34-244.
3. This resolution is effective upon adoption.

Adopted by the Sherwood City Council at a regular meeting thereof this 5th day of April 2016, and filed with the Sherwood City Recorder.

_____
Krisanna Clark, Mayor

Attest:

_____
Sylvia Murphy, MMC, City Recorder