KELLINGTON LAW GROUP, PC

Wendie L. Kellington
P.O. Box 159
Lake Oswego Or
97034

Phone (503) 636-0069
Mobile (503) 804-0535
Facsimile (503) 636-0102
Email: wk@klgpc.com

June 16, 2020

Via Electronic Mail
Members of the Salem City Council
c/o Dan Atchison, City Attorney
Aaron Panko
555 Liberty St SE, Room 205
Salem, OR 97301

RE: Request for Remand

Dear Honorable Mayor and Members of the City Council:

The Applicants[1] in the above referenced matter hereby request that the City respond to LUBA's remand. ORS 227.181. LUBA's decision held:

> "The Costco store is a 'shopping center' within the meaning of SRC 111.001, a 'retail use' that is allowed in the CR zone, and PacTrust's proposal does not exceed either the 240,000 GLA limit for a store or the 299,000 GLA for the subject property." LUBA Decision Slip Op *18.

Scope of Remand

The only issue that LUBA decided the City must determine on remand, is whether PacTrust has a vested right to a shopping center composed of 299,000 sq. ft gross leasable area (GLA), such that the site review application PacTrust submitted for significantly less GLA, may not be denied. The record should be reopened to address that issue. However, no hearing is required.

Both the City and opponents conceded at LUBA that PacTrust has a vested right to the requested shopping center use. That means that there can be no dispute that PacTrust has a vested right to a shopping center composed of 299,000 GLA or less.

The proposal is for total retail GLA of 189,550 sq. ft.; when the added to the existing medical buildings composed of 38,512 sq. ft., the total integrated shopping center development on the subject property is 228,062 sq. ft., which is 70,938 sq. ft. or 24% less GLA than PacTrust's vested right. Accordingly, PacTrust demonstrates in this remand submission that it has a vested right to complete development of the community shopping center that was approved

[1] Applicants are M & T Partners, Inc. and Pacific Realty Associates, L.P, hereinafter "Applicants" or "PacTrust" for ease of reference.

in the 2007 Decision as part of the unified shopping center that included the medical offices/clinic with up to 299,000 GLA consistent with the conceptual plans presented in 2007.

The City and Opponents Have Conceded That PacTrust has a Vested Right to a Shopping Center up to 299,000 sq. ft.

All parties agreed at LUBA that PacTrust has a vested right to its shopping center. The opponents' concession in this regard was complete, subject only to their constrained view of the 2007 Decision, which neither LUBA nor the court of appeals accepted.[2] The City's concession was qualified by its claim that PacTrust's vested right can be denied if the City decides that the vested shopping center use does not meet tree preservation standards.[3]

PacTrust disagrees with the City's qualified position. PacTrust has a vested right to a shopping center composed of 299,000 sq. ft. GLA, and the proposed shopping center at issue in the site review application, which is substantially smaller, cannot be denied. Per City-imposed conditions of approval on the 2007 Decision, PacTrust has fully mitigated the impacts of a larger shopping center composed of 314,000 sq. ft.[4]

The only issue that the City must decide on remand, is whether PacTrust has a vested right to its shopping center and must approve the proposed site plan. PacTrust requests that the City affirm that it has a vested right to its shopping center and approve the proposed site plan for the shopping center that is well within the scope of PacTrust's vested right.

Site Review Seeks a Limited Land Use Decision

LUBA observed that the City's site plan review is a limited land use decision:

> "The challenged decision is a limited land use decision, as all parties acknowledge." Slip op *5.

LUBA provided no specific guidance about how PacTrust's vested right interfaced with City site review criteria:

> "If *** PacTrust possesses a vested right to approval of the shopping center, then we understand PacTrust to argue that the City may not apply site plan review criteria in a manner that prevents development of the shopping center. We express no opinion here about that argument." Slip op *6.

---

[2] Opponents argued in their LUBA brief: "There is not [sic] dispute PacTrust has a vested right to develop the property **in conformance with** the development proposed and approved in the CPC/ZC 06-06 Decision." (Emphasis in original)

[3] The City argued in its LUBA brief: "Petitioners' 'vested rights' argument does not assert an independent basis for approval, it simply argues that Petitioners are entitled to build what the 2007 Decision allowed, and Respondent agrees. Respondent only maintains that the proposed development must comply with the applicable standards and criteria."

[4] *See* Kittelson Memorandum Exhibit C, p 1.

While LUBA affirmed the City's restrictive interpretation of its tree preservation ordinance which the City used to deny site review, it also remanded the City's denial decision, based upon PacTrust's vested right. That can only mean that in LUBA's view, PacTrust's vested right precludes the City from denying site review based upon tree preservation or any other standards. *See* slip op *29:

> "Finally, Costco argues that the City's findings are inadequate and fail to address Costco's argument that the $3.75 million in off-site transportation improvements PacTrust has already spent entitle PacTrust to City approval ofthe shopping center. This argument is similar to PacTrust's second assignment of error. For the same reasons that we sustained PacTrust's second assignment of error, we agree with Costco that remand is required in order for the City to address Costco's argument that it is entitled to City approval of the shopping center."

PacTrust is entitled to have its site plan review application approved without any requirement or condition that it implement measures to avoid impacting the trees.

As a Limited Land Use Decision, the City May Not Apply its Tree Preservation Standards to Deny the Proposed Shopping Center

The site plan review application seeks a limited land use decision. That has been decided and is the law of this case. That means that PacTrust's site plan review application seeks a decision that is "somewhere between" one issued under clear and objective standards and one requiring the application of discretionary land use standards. *Fechtig v. City of Albany*, 27 Or LUBA 480, *aff'd* 130 Or App 138 (1994).

The City site plan review standards clearly show that site plan review is a limited land use decision since they require approval when particular standards are met:

> "An application for Class 3 site plan review *shall be granted* if ***". UDC 220.005(3).

Relatedly, as a matter of state law, the only standards that may be applied to a limited land use decision are those that regulate the "physical characteristics" of the shopping center, which is a use permitted outright on the property. Because the site review application seeks approval of a limited land use decision for a use permitted outright, the shopping center use may not be denied. ORS 197.015(12).[5]

[5] "Limited land use decision":

(a) Means a final decision or determination made by a local government pertaining to a site within an urban growth boundary that concerns:
"*****

Viewed through this lens, nothing makes the City tree preservation requirements obviously applicable to site plan review. The most analogous provision of the UDC is in the site review criteria in UDC 220.005(3)(A), which *require* approval where:

> "The application meets all applicable standards of the UDC[.]"

The "applicable standards of the UDC" are articulated in the site plan review purpose statement at UDC 220.001. The standards:

> "include but are not limited to standards related to access, pedestrian connectivity, setbacks, parking areas, external refuse storage areas, open areas, landscaping, and transportation and utility infrastructure."

As explained in *Friends of Yamhill County v. Yamhill County*, 229 Or App 188, 193, 211 P3d 297 (2009), under the principle of *ejusdem generis*, a regulation that lists what is "included" is not an exclusive list, but items not expressly listed are limited by the common characteristics of the listed items. The non-exclusive list of standards in UDC 220.0001 includes no standards that could preclude the use itself; consequently, standards that could preclude an outright permitted use (such as the City's tree preservation requirements, as applied by the City here) are outside the scope of the list. In the prior proceedings, the City took the position that some shopping center layout "options" would preserve the oak trees, but those options are not economically viable and therefore would preclude PacTrust's vested right. This was made clear by Ms. Shari Reed and others whose testimony is in the record, as well as by the attached letters. For example, when evaluating locations to lease discerning retail business would not favor sites where its back is facing Kuebler Blvd.; Costco requires a minimum amount of parking that would be precluded; and access and circulation must meet UDC 220.005 site access and circulation standards, which cannot be met with any of the "options."

LUBA implicitly recognized that denial on the basis of such restrictive interpretation cannot be squared with PacTrust's vested right when it remanded the City's denial of site plan review. Thus, UDC 808 may not be applied to the proposed shopping center because it allows denial of the use rather than regulates its physical characteristics.

It is "Necessary" to Remove the Eight Oak Trees

Notwithstanding that Applicants are entitled to site plan approval that does not require protecting the eight oak trees, the attached supplemental "Options" plans graphically demonstrate that it is impossible to develop the proposed shopping center in compliance with all applicable City standards and also to "save" the trees.

(B) The approval or denial of an application based on discretionary standards designed to regulate the *physical characteristics* of a *use permitted outright*, including but not limited to site review and design review." (Emphasis supplied.)

The Proposal will not "Remove" any Significant Tree

Not only do the tree preservation requirements not apply, and not only is it "necessary" to remove the trees, PacTrust's proposal also will not "remove" any "significant" tree in fact. PacTrust intends to transplant all eight of the "significant" oak trees and no City permit is required to do so. *See* Exhibit B, Arborists Report.

UDC 808.015 only prohibits the removal of "significant trees," not all trees. UDC 808.005 defines "Tree removal" to mean:

> "to cut down a tree or remove 30 percent or more of the crown, trunk, or root system of a tree; or to damage a tree so as to cause the tree to decline or die. The term 'removal' includes, but is not limited to, topping, damage inflicted upon a root system by application of toxic substances, operation of equipment and vehicles, storage of materials, change of natural grade due to unapproved excavation or filling, or unapproved alteration of natural physical conditions. The term 'removal' does not include normal trimming or pruning of trees."

The proposal to transplant the eight "significant" trees does not cut them down, remove more than 30% of the crowns or damages the trees so as to cause them to decline or die. Consequently, none of the trees will be "removed" as defined in UDC 808.005.

Accordingly, because PacTrust will transplant and not remove the trees, UDC 808 is not triggered at all. In this regard, and without waiving its other arguments, to resolve the dispute PacTrust suggests a condition of approval that states:

> "The eight (8) "significant" oak trees on the subject property shall be transplanted and maintained after transplant, consistently with the recommendations of the PacTrust Remand Letter, Exhibit B, Arborists Report."

The arborist's report governing transplant demonstrates that all but one of the trees has a good chance for survival. The one tree with the poorest chance of surviving transplant is already in poor shape and has a low chance of survival even in its existing circumstances. Exhibit B, Arborist Report, p 11. While there can be no guarantee of their survival, PacTrust will follow all recommendations in the arborist's report to provide the trees with the best chance of survival during and after transplant. The cost of the replanting effort is not insignificant – the cost is in excess of $450,000 – but it is an effort the Applicants are willing to undertake to resolve the controversy concerning the "significant" trees.

Traffic Issues

LUBA also explained that if the City chooses, it may address the opponents' concerns regarding the proposal's compliance with the traffic impact requirements of UDC 220.005(f)(3). However, there is no useful purpose served by addressing traffic again, LUBA did not require

that the City do so, no one appealed that determination and the matter of traffic impacts has been exhaustively reviewed and vetted by the City's professional staff, ODOT and the applicant's traffic engineers. Traffic was appropriately not a basis for denial in the City's decision that LUBA remanded. The proposal's compliance with City site plan review traffic standards is a settled issue that need not be revisited. Accordingly, PacTrust requests that the City address only the vested right issue that LUBA remanded.

However, if and only if the City Council decides to revisit the traffic site plan review approval criteria at issue, then the City Council should reopen the record for additional evidence and argument on that issue as well. If the City does so, then PacTrust attaches Exhibit C, which is Kittelson Associates' response to the "Greenlight" report submitted by the opponents on December 10, 2018, the night of the City Council meeting. Combined with the other evidence in the record, Kittelson's attached report conclusively establishes that the proposal satisfies traffic site review approval criteria. We address this in greater detail below.

Remand Process Requirements

The Salem Revised Code and Uniform Development Code dictate no particular remand procedures. The only limits are in UDC 300.1080 and ORS 227.181 requiring final action by the City on the remand within 120-days of this request.

While it is apparent that the City Council must open the record for additional argument and evidence on the vested rights remand topic, it may do so by either holding a public hearing or it may limit the remand proceeding to written submittals only. Written submittals are the most capable of resulting in an efficient, fair, and reasonably swift resolution, and are the Applicants' preference.

To aid the City's consideration on remand, the Applicants offer the specific legal analyses below.

1. <u>The Applicants have a vested right to develop the proposed shopping center</u>.

Applicants have a vested right to implement the 2007 Decision and that vested right includes approval of the current proposal. Under separate headings below, Applicants provide the legal framework for vested rights and an analysis under that framework based upon the existing record and then on additional evidence submitted with this remand request. Applicants then address the development impacts of the vested right and how the impacts from the current proposal do not exceed those that would flow from implementation of the vested right.

Much of the legal framework and analysis based on the existing record presented below is taken from the briefing to LUBA. The record citations below refer to the LUBA record.

Legal Framework for Vested Rights

As noted above, both City and opponents conceded at LUBA that the Applicants have a vested right to its shopping center. PacTrust has a vested right to approval of the shopping center site review proposed here because it is wholly consistent with the shopping center approved by the City in its 2007 Decision and PacTrust expended significant amounts of money toward developing that approved shopping center in good faith reliance on the City's decision and subsequent actions.

Vested rights is a well-established legal principle that holds that the owner of property pursuing development can reach a point in the process where it acquires a vested right to complete the development even when the local government has regulations that if applied, would restrict or prohibit the development that was started.

The seminal case concerning vested rights in Oregon is *Clackamas Co. v. Holmes*, 265 Or 193, 508 P2d 190 (1973), where the Oregon Supreme Court set forth seven factors a decision-maker is to consider in determining whether a vested right exists. Oregon courts have reinforced that not all *Holmes* factors will come into play in any particular case. *Union Oil Co v. Board of Co. Comm. of Clack. Co.*, 81 Or App 1, 8, 724 P2d 341 (1986). The Court of Appeals summarized four of those factors in *Ecklund v. Clackamas County* 36 Or App 73, 81, 583 P2d 567 (1978), explaining:

> "The Supreme Court in *Holmes* identified four essential factors to be considered in asserting the evidence of a nonconforming use: (1) the ratio of prior expenditures to the total cost of the project, (2) the good faith of the landowner in making the prior expenditures, (3) whether the expenditures have any relationship to the completed project or could apply to various other uses of the land, and (4) the nature of the project, its location and ultimate cost. *None of these factors is predominant; they are merely guidelines in assessing the evidence and deciding the issue*." (Emphasis supplied.)

Much attention has been paid to the "ratio of prior expenditures" factor in numerous cases. In determining whether claimed expenditures are properly considered under this factor, LUBA has held that several other *Holmes* factors are relevant and include: (1) identifying the time at which the expenditures were made; (2) analyzing whether the expenditures were made in good faith and were lawful when made; and (3) determining whether the expenditures were directly related to the proposed use of the property. *DLCD v. Curry County*, 19 Or LUBA 249, 255 (1990).

Related to this factor, the Court in *Holmes* explained that:

> "in order for a landowner to have acquired a vested right * * * the commencement of the construction must have been substantial, or substantial costs towards completion of the job must have been incurred." 265 Or at 197.

In 2011, the Oregon Supreme Court revisited the *Holmes* decision for the first time in 40 years. *Friends of Yamhill County v. Bd. of Com'rs of Yamhill County*, 351 Or 219, 237 (2011). In analyzing the *Holmes* factors, the Court observed that the nature of development of land has changed during that 40-year period, and "the amount of upfront costs that landowners must incur to build some projects has increased." *Id.*, at 237-38. The Court then added:

> "We cannot lose sight of those changes in applying the factors identified in *Holmes* to current conditions." *Id.* at 238.

The Court later explained that the "ultimate cost" also matters in the *Holmes* analysis, "because the weight to be given the expenditure may vary depending on the ultimate cost." *Id.* at 248. For example, $200 in expenditures to develop a $1,000 project is undoubtedly a high percentage of the final cost, but the expenditures would likely not be considered "substantial." The Court ultimately noted: "Conversely, when the ultimate cost of a project runs into millions of dollars, an expenditure may be substantial even though it is only a small percentage of the projected cost." *Id.*

Development Rights Created in 2007 Decision

Before applying the particular factors set forth in *Holmes* and its progeny, it is important to clearly identify the development that is the subject of PacTrust's vested rights claim. In 2006, PacTrust applied for a zone change on 18.4 acres of property to allow for the development of a retail shopping center. The 18.4 acres is adjacent to an approximate 10-acre parcel that was owned by the Salem Clinic, but not developed. In its 2006 submission to the City, PacTrust demonstrated that the specific development it proposed on the 18.4 acres was a community shopping center, which was an allowed use in the proposed zone. However, PacTrust also included the details of its more comprehensive development plan that included the adjacent 10 acres and proposed a unified development consisting of a medical clinic building and medical office space on the adjacent 10 acres and a retail shopping center on the 18.4 acres. At that time, the universal sentiment was that the area needed a new medical clinic building, and that a medical clinic could survive if developed in a larger shopping center environment. Accordingly, PacTrust included the medical office/clinic development in its 2006 request illustrating a unified community retail and medical office/clinic center. However, PacTrust made clear that it would not develop the Salem Clinic or other medical offices standing alone, rather only as a part of a unified shopping center.

As part of its zone change request, PacTrust was required to, and did show through conceptual development plans, the proposed retail shopping center. PacTrust's drawings depicted development buildings and parking, which overlaid the existing oak trees, making clear that to construct the proposed retail shopping center, the oak trees would have to be removed.

The City approved Pac Trust's zone change based upon the general depictions of the retail facilities on the 18.4 acres and medical offices on the 10 acres. In doing so, the City confirmed that the proposal was a community shopping center, which the City defined as a

shopping center with less than 300,000 gross leasable area. The 300,000 GLA limitation was important to the overall development plan because the City recognized the proposal as a unified center that had both a retail shopping center and a medical clinic/office space component and applied that limitation to the overall project.

Not only did the City approve PacTrust's zone change based upon the unified development proposed, it required a certain minimum amount of development. In Condition 14 of the 2007 Decision, the City required that the:

> "subject 18.4-acre property shall be developed with a retail shopping center. The maximum amount of gross leasable area (GLA) for the shopping center on the subject property shall be 240,000 GLA. If the subject property is developed in conjunction with the abutting approximate 10-acre property currently owned by Salem Clinic *** the total amount of retail GLA and medical/dental office of the two properties shall not exceed 299,000 GLA."

With respect to the existing oak trees, the City Council was plainly aware that the conceptual plans for the 2007 Decision illustrated a retail shopping center that would require not only the eight oak trees to be removed, but also approximately 70 other trees. With that knowledge, the Council found that there were no significant natural resources that would be impacted the proposed development.[6] In doing so, the City applied a long-standing interpretation of its code that to develop the approved commercial development it was "necessary" (emphasis added) to remove "all" trees and PacTrust was not required to make any further showing.

Subsequent City actions confirm that it considered PacTrust's proposed development to be the larger combined development discussed in the 2007 Decision and specifically referred to in Condition 14. In 2009, after PacTrust acquired the approximate 10-acre parcel upon which the Salem Clinic is now situated, the City approved a zone change for that property from Commercial Office and Residential Agriculture to Commercial Retail and Commercial Office. The zone change was to facilitate a property line adjustment that effectively moved about 2.5 acres of the 10-acre parcel into the former 18.4-acre parcel to be used as part of the retail shopping center component of the proposed unified development.

Then, in 2012, the City approved a site plan review application applicable to the 7.49 acres of the former 10-acre parcel that resulted from the property line adjustment. In its approval, the City treated the 2012 site plan approval application as the first phase of a two-phase development with the second phase being the retail shopping center of up to 240,000 square feet on the approximate 22-acre adjacent parcel (the former 18.4-acre parcel).

---

[6] "The Subject Property is primarily a vacant field. There are no identified natural resources on the Subject Property. Development of vacant land is expected. The proposed change will have no significant negative impact on the quality of the land." 2007 Decision, p 19.

Furthermore, in the 2018 proceedings in this matter leading to the decision that LUBA remanded, to demonstrate that it had a vested right to complete the 240,000 square foot retail shopping center component, PacTrust provided evidence of $3.7 Million in significant expenditures toward completion of the approved retail shopping center. This sum, while significant in its own right, was only a small portion of PacTrust's expenditures on the overall approved project, which totaled over $13.4 Million plus land dedications. On remand, the City should evaluate PacTrust's vested right considering all of the expenditures PacTrust made in furtherance of developing the unified retail/medical office development the City approved (and in fact required in Condition 14) because it is that unified development the City approved and PacTrust made expenditures specifically related to completing that larger development. However, significant expenditures sufficient to compel a finding that a vested right exists occurred, regardless of whether one analyzes only the retail shopping center element of the project, or the larger development as a whole.

Analysis of the Holmes Factors Based on Existing Record

Ratio of Expenditures to Total Costs

PacTrust provided expenditure calculations and rough estimated project costs for the Kuebler Gateway Shopping Center focused on the 18.4 acres in its November 29, 2018 letter to the City Council. Rec-622. The record establishes that Applicants have spent $3,765,190 on transportation facility improvements mandated by the 2007 Decision to serve a 299,000 square foot shopping center. Rec-622. The total sum to complete all transportation exactions required by the 2007 Decision is anticipated to run $6.25 Million. Rec-627. Even though the $3,765,190 expenditures addressed impacts from the overall project, it was proper to use that number to show that PacTrust had a vested right to complete the retail shopping center because the vast majority of the traffic impacts were attributable to the retail shopping center and because the two components were intrinsically connected. Without the retail shopping center there would have been no medical office/clinic development and thus no impacts to mitigate.

The total estimated project cost for the Kuebler Gateway Shopping Center includes the combined construction development costs for PacTrust and Costco plus the transportation exactions. Costco has estimated its costs to develop the proposed store and site improvements at $40 Million. Rec-628. Costco's development is for 168,550 square feet GLA (Rec-650) of the new development's 189,550 square feet of GLA, with the other new retail development amounting to 21,000 square feet of GLA. Dividing Costco's estimated costs by its GLA ($40 Million divided by 168,550 square feet) Costco's development cost equals $237.32 per square foot GLA. Assuming the same per-square foot cost for the retail shops,[7] the cost of the retail shops is $4.98 Million ($237.32 x 21,000).

[7] The square foot development costs for the retail shops is actually higher given: (1) that they are smaller size; (2) that they are designed to a higher level of detail and finishing than the Costco structure; (3) cost inflation factors such as later construction and (4) only represent the shell construction cost. Additional monies will be required for tenant improvements. That would tilt the ratio farther in the Applicants' favor.

The total cost of the retail shops ($4.98 Million), Costco development ($40 Million) and transportation exactions ($6.25 Million) is $51.23 Million.

Calculating the ratio of expenditures already made to total cost – $3.765 Million to $51.23 Million – yields a ratio of 1:13.6. That is almost identical to the 1:14 ratio that the *Holmes* Court found established a vested right.[8] *Webber v. Clackamas County*, 42 Or App 151, 155, 600 P2d 151 (1979) (noting 1:14 ratio in *Holmes* decision).

Pac Trust's expenditures take on greater magnitude in light of the court's discussion in *Friends of Yamhill County.* The court noted there that expenditures can be considered "substantial," even if the ratio is the same or less than the ratio in *Holmes* if the overall scope and cost of the development is larger. Given the changes in development and particularly the scope and expense involved, the court noted that expenditures that produce a lower ratio in the context of a multi-million-dollar project can nonetheless be substantial. In *Holmes,* the expenditures were $33,000, and the total cost of the development was estimated at between $400,000 and $500,000. Here, the total cost of the retail shopping center development is $51.23 Million. Not only does PacTrust fall in line with the *Holmes* ratio, it does so in the context of a multi-million-dollar development where the court has acknowledged that lesser expenditures can be substantial in a vested rights analysis.

This factor weights in favor of a vested right.

Good Faith of the Land Owner

PacTrust's good faith in making the expenditures cannot be seriously challenged. All expenditures were made pursuant to a condition of approval imposed by the 2007 Decision and in furtherance of subsequent City approvals/actions. The City imposed exactions to improve the transportation facilities to mitigate for the additional traffic generated by the 299,000 sq. ft. community shopping center approved by that decision. The expenditures implement those conditions with the ultimate aim of establishing the development.

The timing of the expenditures and the relationship to other City actions is appropriate as well. All expenditures were made after the 2007 Decision in order to implement that decision. In 2009, the City approved a second zone change to allow for part of the development approved in 2007 to proceed. It rezoned the 10-acre parcel (by then owned by PacTrust) to facilitate a property line adjustment that increased the size of the retail shopping center site and reduced the medical clinic/office site. In 2012, the City approved the Site Plan Review for the medical clinic/office development. When the City made those decisions, the conditions from 2007 requiring PacTrust to make off-site public improvements to mitigate impacts from the retail shopping center remained in place. The City did not give any indication that PacTrust's approval to develop the retail shopping center would be reversed or restricted. The City never suggested that it might in the future adopt a different interpretation of its code foreclosing development

[8] If the calculations also included the cost of other completed improvements not included in the record, the ratio would be even further in the Applicants' favor.

consistent with the conceptual site plans presented in the 2007 proceedings because of the oak trees that it was fully aware could not remain.

In fact, in 2015, after the medical office/clinic component of the development required in Condition 14 was completed, the City desired to expedite major improvements to Kuebler Blvd. and the trigger for PacTrust having to make the major improvements had not occurred. Thus, the City approached PacTrust requesting that it provide $3 Million in funds to complete the improvements before PacTrust would otherwise be required to do so. In good faith reliance on the City's 2007 Decision and subsequent City actions, PacTrust voluntarily provided early funding for the improvements required to mitigate impacts of the retail shopping center. It should not now be penalized for contributing $3 Million towards the total cost of $3.21 Million (i.e., 94% of the City's cost for the project) and cooperating with the City throughout the process.

Holmes also considers whether an owner had notice of changing conditions before the expenditures. *Holmes*, 265 Or at 198. Here, there was no notice until the City Council voted in December 2018 to reverse the Planning Director approval of the Applicants' site plan that the City would apply the 2007 Decision contrary to its prior practice and the decision's plain language, or that it would interpret the tree preservation standards in a different manner than those standards had consistently been applied in the past. As noted above, the City approved interim applications for land use actions specifically related to completing the proposed development required by Condition 14. The City also requested and received help from PacTrust in the timing and funding of City transportation improvements, and PacTrust had no reason not to trust the City. Significantly, as noted above, after PacTrust completed significant steps toward completion of the project, the City, through its Planning Director concluded that the proposal satisfied all of the approval criteria and was consistent with the 2007 Decision. Rec-157. If Applicants had any notice or other reason to suspect that its site plan would not be approved, it certainly would not have funded early transportation improvements from which it would receive no benefit. The improvements provide no benefit because without the right to develop the shopping center that the City approved in the 2007 Decision (see Condition 14), there is no viable retail shopping center Pac Trust can develop on the property and it would not proceed to do so.

The good faith factor weighs in favor of a vested right.

Relationship of Expenditures to Completed Project

Under *Holmes*, it is not required that the expenditures would only benefit the specific development the applicant commenced. Indeed, in that case the applicant expended money on a new well that could have been used for agricultural uses but also added capacity to support the proposed processing plant. Nonetheless, the well expenditures were considered as part of the analysis of whether or not the applicant had a vested right to build the processing plant. Here, as discussed above, both the nature and the scale of the transportation improvement expenditures by PacTrust are directly related to the 2007 Decision, the use it approved, and the conditions of approval. Rec-666-69. The expenditures in the record were made specifically to satisfy obligations that the City required from PacTrust to mitigate transportation impacts of the

shopping center approved in 2007. But for the conditions of approval tied to the 2007 shopping center project approval, those expenditures would not have been made. All of the expenditures are directly related to conditions of approval and directly further the completion of the community shopping center approved by the 2007 Decision.

Importantly, the expenditures are directly related to a community shopping center up to 299,000 sq. ft. GLA – the 2007 Decision allows no other use on the subject property. The expenditures cannot apply to other potential permitted uses on the property – there are none allowed.

This factor weighs in favor of a vested right.

Nature of the Project, Location and Ultimate Cost

The 2007 Decision established that the 18.4-acre site can only be developed as a shopping center of 240,000 sq. ft. GLA or less and if developed with the adjacent 10-acre parcel could only be developed as an integrated shopping center of up to 299,000 sq. ft. The subject property is a large vacant site, now zoned Commercial Retail, that in 2007 was surrounded by growing residential neighborhoods that still exist. The subject property is also located on a major transportation facility, Kuebler Boulevard, which is identified as a parkway and is projected to carry approximately 50,000 trips per day. Rec-679 n4.

As the 2007 Decision concluded, the surrounding vicinity "represents a logical geographical area for the proposed community commercial facility based on the existing and emerging residential growth in the area and the key adjoining transportation corridors." Rec-680. As discussed above, the ultimate cost of the project is substantial, running in excess of $51.23 Million dollars.[9] In a multi-staged development process such as this one, much of the development expenditures must occur to implement earlier decisions prior to or as part of subsequent application stages. At some point, those expenditures become substantial enough to establish a vested right for the property owner to develop the use as approved. In this instance, at an expenditure of at least $3.765 Million, this project has well crossed that vested rights line.

This factor weighs in favor of a vested right.

Summary

As the above analysis demonstrates, the Applicants' expenditures presented in the record of the decision that LUBA remanded, establishes a vested right to develop the property as required and authorized by the 2007 Decision and as implemented by the site plan review proposal under review.

[9] As the Applicants explained, in this part of the analysis, it is focusing only on the existing record. For the reasons articulated previously, in earlier proceedings the Applicants focused on the development of just the retail shopping center on the 18.4 acres (later expanded to about 22 acres). The Applicants expand on the total cost of the entire community center that includes the medical office/clinic buildings below.

Additional Evidence and Analysis

The analysis below follows the same *Holmes* analysis presented above but provides greater detail and incorporates additional evidence provided by PacTrust for inclusion into the record.

As discussed above, PacTrust has spent significantly more toward completion of the project than the $3.765 Million identified above. As part of what the City identified as Phase I of the unified development, PacTrust completed significant site work including the mass grading, constructed a medical clinic building, completed tenant improvements on that building, upgraded an existing water line, designed elements of the retail shopping center and designed more of the public roadway improvements. PacTrust would not have made any of these expenditures but for the 2007 Decision and its promise of the retail shopping center that it approved.

Ratio of Expenditures to Total Costs

In addition to the $3,765,190 in expenditures currently confirmed in the record, PacTrust expended an additional $9,602,177 toward completion of the project approved in the 2007 Decision. Most of the additional costs relate to the medical office/clinic component that the Applicants would never have started had the City not approved the larger retail shopping center component of the project. However, as is evident in some of the cost descriptions, some of the expenditures also related to preliminary work on the retail shopping center component. The breakdown of those expenditures is as follows:

- $789,990 on mass grading to prepare a portion of the site for construction of the medical clinic and office buildings, and to market the remaining retail shopping center portion of the site;
- $3,370,960 to complete the Salem Clinic medical center building;
- $1,657,956 to complete tenant improvements necessary to lease the Salem Clinic medical center building;
- $2,066,320 to complete the second medical office building on the site;
- $615,393 to complete tenant improvements necessary to lease that second medical office building;
- $558,952 on additional mass grading in preparation for developing a shopping center on the 18.4-acre parcel;
- $253,142 to complete waterline improvements in Kuebler Blvd.;
- $78,747 on design work and application material for development of the retail shopping center; and
- $210,717 on design work for remaining future public roadway improvements.

Accordingly, to date PacTrust has expended at least $13,367,367 toward completing the development the City approved in 2007. With the above expenditures included, the total integrated retail project cost to date is approximately $61,422,737.

These additional expenditures dramatically change the *Holmes* ratio, from 1:13.6 to 1:4.5. That means PacTrust has already expended about 22% of the total cost to complete the unified community shopping center the City approved in 2007 and substantially enhances the Applicants' vested rights position. Moreover, as discussed above, under *Friends of Yamhill County*, expenditures for larger projects that are not necessarily a high percentage of the overall cost can still be deemed legally significant. In this case, PacTrust made more than $13 million in expenditures towards completion of the larger project. Under any fair reading of *Holmes* and *Friends of Yamhill County*, PacTrust's expenditures are significant.

Good Faith of the Land Owner

As discussed above, there is no basis for finding that PacTrust did not proceed with all of the above expenditures in good faith. In the proceeding that led to the 2007 Decision, PacTrust openly presented its plan for the unified development on both the 18.4-acre parcel and the adjacent 10-acre parcel. The City, in Condition 14, included the development of the 10 acres in reaching the 299,000 square foot limitation on GLA. More importantly, in exacting public improvements to existing transportation facilities, the City used anticipated impacts from the unified 299,000 square foot project. In 2009, the City approved a second zone change to facilitate the overall development including both parcels approved in the 2007 Decision. In 2012, the City approved development of part of the unified project approved in the 2007 Decision when it approved the site plan review for the medical clinic and office building. The City expressly referred to that portion of the development as "Phase I" of the larger project that had been approved by the 2007 Decision. Thus, the City's approvals throughout the years provided a reasonable basis for PacTrust to believe the City authorized all of the development, justifying the expenditures detailed above. Or stated differently, PacTrust would not have willingly made those expenditures if it had reason to believe its ability to develop the unified shopping center was in jeopardy.

Significantly, in 2015, the City accepted the benefits of its approval of the unified development project when it negotiated an agreement from PacTrust to fund substantial public improvements to Kuebler Blvd., well in advance of the time at which PacTrust was required to complete them. As noted, PacTrust's obligation to make the improvements to Kuebler Blvd only existed because it had an obligation to mitigate the impacts of the unified development of the medical office/retail shopping center with 299,000 square feet of GLA on both parcels – the 18.4 acres and the 10.0 acres. In other words, without the shopping center approval, the City would have had no basis to ask PacTrust to pay for the improvements in 2015, and PacTrust would have no reason to agree. Asking PacTrust to pay for the improvements in advance was a clear and unambiguous signal from the City that it fully expected PacTrust would eventually build the 299,000 square foot development that PacTrust presented in its 2006 zone change request and was approved in the 2007 Decision.

In addition, even as late as September 2018, the City took the position that PacTrust was authorized to proceed with the retail shopping center component of the project. In September 2018, the City planning director approved PacTrust's site plan review that illustrated the retail shopping center with a Costco store and additional retail pads.

As previously discussed, it was not until December 2018, when City Council reversed direction and decided to reinterpret the 2007 Decision and place restrictions on development that were not included in the 2007, 2009 or 2012 decisions and that made development consistent with the 2007 Decision impossible. Even then, City officials (including members of the City Council and mayor) familiar with the 2007 decision and subsequent City actions, confirmed that the City's decision to deny PacTrust's site plan review application was a dramatic change in the City's position. The Mayor cautioned other Council members that disavowing the 2007 Decision exposed the City to potential damages in litigation.

Relationship of Expenditures to Completed Project

The additional expenditures identified above, all directly relate to required mitigation of the development the City approved in its 2007 Decision, and that the City consistently reaffirmed in subsequent years. In fact, on September 12, 2012, the City Administrator approved the Site Plan Review application to develop the medical clinic building and separate medical/office building. The City Administrator acknowledged the proposed development as Phase I of a larger multi-phase unified development. The expenditures on mass grading and build-out of the medical clinic building and medical/office building were integral parts of the approved development and specifically related to that unified development approved by the 2007 Decision. Indeed, but for the City's approval and ongoing facilitation of the development of the larger retail shopping center component of the unified project, the Applicants would never have spent money on the medical office/clinic component of the project.

Nature of the Project, Location and Ultimate Cost

As noted above, the 2007 Decision established that the whole site (18.4 acres and 10 acres), can only be developed as a unified community shopping center of up to 299,000 square feet of GLA. That development was approved in an area where the City found a need for the unified development, including the medical office/clinic. There was never any question that the site was to be developed with the uses PacTrust intended, and expended money in reliance upon.

It was consistently understood by all concerned that it would never be feasible to proceed with just the medical offices portion of the development. In light of the extensive off-site improvements the City required, developing just the medical clinic and office component was simply not economically viable. The project needs the retail component to justify expending the costs the City required to provide the medical clinic/office building component.

Similarly, there was never any question that the project is in the location where the citizens and the City government desired to have a medical clinic and retail shopping opportunities. The City found a need for the retail shopping center component of the

development. The location drove a large portion of the expenditures because, as discussed above, the City required substantial improvements to the existing transportation facilities in the area to serve the overall development.

In approving the Site Plan Review for the medical clinic/office building component of the development first, the City acknowledged that in a development the size of that approved in 2007, any developer/owner would have to phase in improvements expending money on work in one phase to facilitate the ultimate completion of the project. Logically, it would have taken longer for any developer to complete the larger retail shopping center component of the project, particularly in view of the recession that gripped the state and nation shortly thereafter. Here, the expenditures detailed in the above cited evidence were all made to complete the larger project as approved. The total estimated cost of the completed project is approximately $61,422,737. Clearly, PacTrust has proceeded far enough in completing what the City approved/required in Condition 14 of the 2007 Decision, to have a vested right to complete the project.

Impacts of Development

The vested right PacTrust has under the 2007 Decision as detailed above, entitles it to complete the development that was proposed in the 2018 site plan review application. The fact that PacTrust proposed a retail shopping center with 189,550 square feet of GLA (less than the approved 240,000 square feet) does nothing to detract from its vested right, since 240,000 is a ceiling not a floor. The smaller center does, however, demonstrate that the impacts of the proposed shopping center are far less than the City contemplated, allowed, and required mitigation for, in the 2007 Decision.

As part of its presentation in 2006/2007, PacTrust demonstrated that due to site access issues, neighborhood impact concerns and other factors, any retail shopping center consistent with that approved in Condition 14, had to be located on the site as PacTrust presented in 2018; and any retail shopping center it contemplated and the City approved, required removing the eight oak trees on the site.

The fact that the final plan presented for site plan review in 2018 was for a smaller shopping center does not change PacTrust's vested right. The City still required mitigation for the full impact of a 299,000 sq. ft. GLA unified commercial shopping center.[10] To date, PacTrust has incurred substantial expense addressing that mitigation. The mass grading and other site work was required for any retail shopping center consistent with Condition 14. PacTrust was required by the City to expend the additional money on the integrated medical clinic/office building components of the larger development whether the shopping center had 240,000 square feet or 189,550 square feet. The relevant fact is that implementing its vested right through the 2018 proposed site plan would result in lesser impacts to the City; but the City still received the mitigation associated with the larger approved 299,000 sq. ft. development.

[10] As noted in Exhibit C, p 2, PacTrust in fact was required to mitigate for a shopping center composed of 314,000 sq. ft. GLA.

Vested Rights Conclusion

The evidence in the record and the above analysis demonstrates that the Applicants have established a vested right to develop the proposed retail shopping center.

2. <u>The evidence in the record demonstrates the proposal complies with the tree preservation requirements provided in UDC 808.030(L)</u>.

As demonstrated in the Salem Tree Retention Site Plan "Options," attached as Exhibit A, it is impossible to develop a viable shopping center that is consistent with PacTrust's vested rights under the 2007 Decision, preserves the eight significant oak trees in their current locations and also complies with relevant City standards. Importantly, UDC 220.005(f)(3)(B) and (C) require the following findings:

> "(B) The transportation system provides for the safe, orderly, and efficient circulation of traffic into and out of the proposed development, and negative impacts to the transportation system are mitigated adequately[.]
>
> "(C) Parking areas and driveways are designed to facilitate safe and efficient movement of vehicles, bicycles, and pedestrians[.]"

As is explained in the Kittelson supplement (Exhibit C), there is no site plan "option" that can meet these requirements, other than the shopping center layout depicted on the proposed site plan.

The "option" with the fewest fatal flaws – the "NW Option" - fails to provide the parking that is necessary under the City's code or that is adequate to support a viable shopping center. According to the City code, a 189,550 SF Retail Shopping Center City Code requires a **<u>minimum</u>** of 759 parking stalls. (SRC 806.005(a)(1)/806.015(a) Table 806-1). The parking needed to allow for maximum retail leasing opportunities (shops, cafes, fast-casual and sit-down dining, etc.), on the western portion of the shopping center, is 104 parking stalls (7/1,000), and 147 stalls (9.9/1,000) are provided, resulting in 43 spaces theoretically available for the eastern portion of the project. The eastern portion of the project requires under the city code, a minimum of 699 (4/1,000 sf) parking spaces, but only 546 (3.13/1,000) parking stalls are provided under this "option" creating a total deficit of the minimum parking required by the city code of 110 parking spaces (153 east shortfall minus 43 west theoretical extra spaces = 110 parking spaces). Therefore, the "NW Option" fails to meet SRC 806.005(a)(1)/806.015(a) Table 806-1 as well as SRC 220.005(f)(3)(a). The site plan application submitted for the Council's consideration, meets all city standards and includes 1053 parking stalls, which for the entire integrated 189,550 sq. ft. retail shopping center, amounts to just 5.6 parking stalls per 1000 sq. ft of retail, which is the minimum parking necessary for an economically viable shopping center as the evidence in the record makes plain. *See* Exhibit E.

That means to the extent such a showing is required, that it is "necessary" to remove the eight trees for the vested commercial development on the property.

3. The evidence in the record demonstrates the proposal complies with the transportation requirements set forth under UDC 220.005(f)(3).

Relevant to the transportation requirements for site plan review, LUBA explained that the City could, but was not obligated to, review the proposal's compliance with transportation requirements. LUBA stated:

> "On remand, the City may choose to address intervenor's arguments presented in the cross petition for review." Slip op at *30.

Revisiting the transportation requirements is unnecessary, but should the City Council nonetheless decide to address the transportation requirements set forth under UDC 220.005(f)(3), Applicants present the following arguments. If the City decides to revisit the proposal's compliance with UDC 220.005(f)(3) site review traffic standards on remand, then the following is offered.

Site Plan Transportation Criteria

UDC 220.005(f)(3) provides, in relevant part, that site plan review shall be granted if:

> "(B) The transportation system provides for the safe, orderly, and efficient circulation of traffic into and out of the proposed development, and negative impacts to the transportation system are mitigated adequately[.]
>
> "(C) Parking areas and driveways are designed to facilitate safe and efficient movement of vehicles, bicycles, and pedestrians[.]" (Emphasis supplied.)

Further, UDC 220.001, the purpose statement for site plan review, provides:

> "The purpose of this chapter is to provide a unified, consistent and efficient means to conduct site plan review for development activity that requires a building permit, to ensure that such development meets all applicable standards of the UDC, including, but not limited to, standards related to access, pedestrian connectivity, setbacks, parking areas, external refuse storage areas, open areas, landscaping, and transportation and utility infrastructure."

The plain language of the above code provisions makes clear that the site review transportation standard evaluates *only* the transportation systems that are *internal to the site and that are immediately adjacent to it that provide ingress and egress and that are directly related to the site*. The standard *does not require* any further areas be analyzed and does not require a replication of the much broader TPR-level review which was undertaken as part of the 2007 Decision. As discussed below, the scope of Applicants' transportation analysis meets the requirements of UDC 220.005(f)(3).

Examined more broadly, the UDC establishes a framework for transportation analysis that looks at different aspects of transportation planning and issues depending upon the type of application submitted as well as the nature and scope of the proposal. The code also explains when a TIA is required to be conducted and administrative rules provide the required elements of TIAs. But the TIA requirements and approval criteria for a plan or zone change application are not the same as those for a site review application.

Using the different applications related to the subject property as an example, the approval criteria for the 2007 application and decision required compliance with the comprehensive plan (which includes the TSP) as well as with the statewide planning goals (which include Goal 12 Transportation planning and the transportation planning rule ("TPR")). As part of that application and review process, PacTrust was required to look well beyond the boundaries of the property and to examine the existing and planned transportation system, and to assume the highest permitted trip volumes for the existing zoning of undeveloped properties (including the subject property) in its calculations. As a result of that analysis, the City imposed conditions of approval (the trip cap and required transportation facility improvements), to ensure that development of the property with 299,000 sq. ft. GLA as a unified commercial shopping center would be consistent with both the TSP and Goal 12, and that the transportation infrastructure would be adequate to accommodate the traffic impacts from any development consistent with that size limitation. Furthermore, subsequent amendments to the City's TSP were adopted that factored in the requirements and limitations imposed by the 2007 conditions and related exactions because they will apply to future development of the subject property. Consequently, development of a shopping center of up to 299,000 sq. ft. on the subject property is now contemplated by, and accounted for in, the City's TSP.

In short, the 2007 Decision required PacTrust to fund transportation system improvements to accommodate the broader traffic impacts from the authorized 299,000 sq. ft. GLA commercial retail center. As demonstrated above, PacTrust has already spent significant amounts to fully implement those transportation improvements to the greater transportation system.

By comparison, as the site plan review approval standards make clear, the transportation focus for site plan review is limited to the safe, orderly and efficient movement into and out of the development site (UDC 220.005(f)(3)(B)) and the safe and efficient movement within the development site (UDC 220.005(f)(3)(C)). This makes total sense. With the greater transportation system improvements already studied and addressed at the plan/zone change stage, all that remains at the site plan review stage is to examine and design for transportation circulation into, within and out of the development site, and to examine, as was done in this instance, whether there may be any additional transportation impacts that arise from the proposed anchor tenant that would require additional mitigation not previously accounted for by the TIA for the 2007 Decision. *See*, Kittelson & Associates, Nov. 29, 2018 Response, p. 2 (Rec-1085).

Opponents have argued that UDC 803.015(b)(1) requires a TIA which in turn would trigger other requirements in the City Department of Public Works Administrative Rules

(PWAR) 6.33, because the proposed site plan is for a permitted development that generates 1,000 daily trips onto an arterial or parkway. Opponents are incorrect. UDC 803.015 does not require a TIA because those trips were already evaluated in the 2007 TIA and addressed by the resulting mitigation. Stated differently, because impacts of a 299,000 sq. ft. unified commercial shopping center had been fully mitigated under the 2007 Decision, no further TIA was or is required. *See also* UDC 803.015(d). PWAR 6.33 is not an independent approval standard for anything, including site review, and is only triggered when the UDC 803.015 conditions are met – which is not here. Moreover, the type of TIA envisioned by PWAR 6.33 does not inform the required site review criteria of UDC 220.005(f)(3)(B) or (C).

As part of PacTrust's 2018 application, the City properly required a traffic memorandum showing compliance with the City's site plan review standards and a sensitivity check to confirm that the 2007 Decision traffic assumptions remained valid given the passage of time. This information was provided by PacTrust as requested, and both confirmed compliance with the site plan review standards and confirmed the ongoing viability of the 2007 analysis. LUBA Record at 1084-1106.

This is consistent with well-established rules for site plan review traffic studies. The Oregon Supreme Court has recognized the differing focus of transportation analysis between site plan review applications and other types of applications such as zone change applications. In *Siporen v. City of Medford*, 349 Or 247, 263-65, 243 P3d 776 (2010), the Oregon Supreme Court sustained the City of Medford's explanation that the TIA required for zone changes looks at the broader adequacy of traffic services for the area as provided by the TSP by asking whether the street system in the surrounding area is adequate to serve the subject property developed with uses permitted by the code. *Id.* at 264-65. Site plan and architectural review, however, has a much narrower focus as does the TIA for such applications. The TIA for those types of applications limits analysis to the traffic flow on the site, points of ingress and egress, and the street improvements needed to access the site. *Id.* at 263. Note also that the site plan criteria under the Medford code are largely similar to those under UDC 220.005(f)(3) and require additional examination of existing and proposed off-street parking (none is proposed for this project) and "loading" considerations.

Evidence in the Record Demonstrates the Proposal Complies with the Site Review Transportation Approval Criteria

Based upon the evidence already in the record, there is and can be no serious dispute that the internal transportation systems and circulation "in and out of the proposed development" are wholly adequate. As the Kittelson & Associates' traffic memoranda and related analysis demonstrates, all "negative impacts" are mitigated, and the arrangement of circulation into and out of the property, as well as within and around the project site, is safe, orderly, and efficient.

Not only are the proposed transportation systems adequate, the evidence already in the record in fact demonstrates that the traffic impacts from the tenant mix proposed here results in *significantly fewer traffic impacts than what the City approved* in 2007 and required the Applicants to mitigate. The Applicants have funded mitigation for a *significantly larger unified*

commercial shopping center, than is proposed. At a proposed 228,062 sq. ft. GLA versus an approved maximum of 299,000 sq. ft. GLA for the entire site, the proposal is approximately 24% smaller than it could be. The 2007 Decision required mitigation for 9,660 net new daily trips, 990 net new weekday pm peak hour trips, and 1,350 net new Saturday mid-day peak hour trips. *See* 2006 TIA, p. 3. The proposed 189,550 sq. ft. retail shopping center will generate only 7,743 daily trips, 747 weekday pm peak hour trips, and 986 Saturday mid-day peak hour trips. *See* May 21, 2018 Traffic Memorandum, p 2. Even with the combined trips associated with the approved medical and office uses on the greater site, the proposal generates *12% fewer daily trips*[11] than the Applicants are mitigating for under the 2007 Decision. There is no basis to require Applicants to mitigate impacts not generated by the proposed use, especially when the Applicants are already mitigating for greater impacts than the proposal will create. In fact, requiring that would violate the nexus and proportionality obligations of *Nollan* v. *California Coastal Comm'n*, 483 U.S. 825 (1987), and *Dolan v. City of Tigard*, 512 U.S. 374 (1994).

The transportation analyses conducted by Kittelson & Associates for this application, and for the application leading to the 2007 Decision, are comprehensive and complete for the different purposes that they serve. Those analyses plainly demonstrate that the proposal complies with the site plan review requirements set forth under UDC 220.005(f)(3)(B) and (C), the application meets all relevant standards and has significantly fewer trips than the 2007 Decision required be mitigated. Based on the above, if the City Council decides to consider the issue, it should conclude that the application complies with the UDC 220.005(f)(3)(B) and (C) site plan review transportation requirements.

Opponents' Arguments

At LUBA, opponents argued, among other issues, that the application materials failed to adequately evaluate traffic impacts under UDC 803.015, UDC 803.035, UDC 200.055, Salem Area Comprehensive Plan (SACP) policies, and City administrative rules. The interposition of the vested rights issue and the fact that traffic had been fully studied and mitigated for in the 2007 Decision for a much larger shopping center, demonstrate there is no traffic issue. Regardless, opponents' arguments do not pass close scrutiny and are improper.

At the outset, it is important to understand that within the land use decision-making framework are certain basic legal principles that promote efficiency and sequential decision-making. One of these is the principle that prohibits collateral attacks on matters resolved in related prior land use decisions in a subsequent permit that relies on the prior decision. *Just v. Linn County*, 59 Or LUBA 233, 236 (2009). Related to this proceeding, the 2007 Decision had required PacTrust to study the impacts to the greater transportation system as part of its application and the City Council imposed a condition of approval that limited the size of development permitted on the site as well as conditions that imposed exactions to pay for the

[11] The 2007 Decision conditions mitigate for the 314,000 combined retail/office development because that was the amount of GLA anticipated in the TIA supporting the 2007 Decision. The total number of trips the KAI report for the 2007 Decision assumed was 9,660. The total number of trips KAI assumes in its site review analysis is 8,558. The proposal will therefore have 1,102 fewer trips than the 2007 Decision mitigates for.

transportation impacts from the maximum amount of development allowed under the approval (299,000 sq. ft. GLA). Those conditions of approval in final land use decisions are also insulated from collateral attack. *Graser-Lindsey v. City of Oregon City*, 72 Or LUBA 25, 34-35 (2015) (challenge to condition of approval imposed in prior zone change approval that allowed development of property prior to adoption of area concept plan constitutes an impermissible collateral attack on the decision).

Furthermore, the underlying information used to reach that prior decision is also protected from collateral attack. Particularly instructive here, LUBA has held that the principles of collateral attack apply to challenges to the traffic count numbers and other transportation system analysis that underlie a previous final land use decision. In *Graser-Lindsey v. City of Oregon City*, 74 Or LUBA 488 (2016), *aff'd*, 284 Or App 314 (2017), LUBA held that opponents could not challenge the adopted and acknowledged TSP on the grounds that it had underestimated the amount of traffic that would be generated by full build out when challenging a subsequent decision to adopt an area concept plan. In short, not only may parties not collaterally attack prior decisions and conditions of approval, parties also cannot collaterally attack the underlying data and analysis of the TIA that formed the basis of a prior land use decision.

Several of opponents' arguments constitute improper collateral attacks on matters resolved by the 2007 Decision. These include arguments that the scope of the TIA analysis should be enlarged and the "need" to reevaluate alternative solutions for the Battle Creek Road/Boone Road intersection. These matters were resolved by the prior decision and are final. As discussed above, the plan change/zone change TIA from 2007 examined a significantly greater area than what is necessary or appropriate for a site plan review application, and nothing in the UDC or applicable law requires or even allows a revisiting of that broader perspective. Indeed, the City's TSP was amended consistent with the 2007 Decision, its conditions of approval and the TIA that supported that decision. Furthermore, the traffic light at the Battle Creek Road/Boone Road intersection that will be installed under the 2007 Decision's conditions was an express condition of approval for the 2007 Decision. A demand to deviate from that condition is an impermissible collateral attack of the 2007 Decision.

Other of opponents' transportation related objections represent unlawful collateral attacks on the 2007 Decision because the allegations contend that the approved shopping center will have additional and unmitigated traffic impacts. Arguments that there are other types of impacts that would flow from a 299,000 sq. ft. GLA retail commercial center could have been raised during the 2007 proceedings, but either were not or were resolved against the opponents. *Lufkin v. City of Salem*, 56 Or LUBA 719 (2008). As the Court of Appeals recognized, the 2007 proceedings fully discussed and anticipated impacts from large, similarly sized stores such as Costco, Albertson's, Target, and Kohl's that were envisioned as possible anchor stores in the approved retail shopping center. Court of Appeals Slip Op at *15. Opponents' arguments represent a collateral attack on the 2007 Decision and there is no basis in the site plan review transportation standards to shoehorn in the additional analysis opponents want.

Opponents have also argued that the traffic memo prepared by Kittelson & Associates during the initial site plan review proceeding is inadequate in a number of ways. However, the work was completed following close consultation with the City and ODOT. Furthermore, as the Kittelson & Associates' June, 2020 and November 29, 2018 Response to Appeal of Decision Comments explain, and despite opponents' repeated assertions otherwise, the methodology, scope, analysis years, study time periods, seasonal adjustments, right-turn-on-red adjustments, saturation flow rate, background growth rate, trip generation determinations, pass-by rate, signal timing re-coordination, queuing analysis, and trip type analysis by Kittelson all follow and satisfy all applicable City standards and ODOT guidelines. *See* LUBA Record at 1084-1106. City staff and ODOT concur with Kittelson & Associates, not with opponents.

The City Council should reject opponents' TIA arguments and conclude that the proposal satisfies the transportation-related requirements of UDC 220.005(f)(3)(B) and (C).

4. Further Traffic Mitigation

As provided in the 2007 Decision Condition 6, Applicant shall commit up to $5,000 for traffic calming devices to be used in the residential neighborhood south, if a need is determined. Regardless of whether it is strictly necessary or even warranted, PacTrust agrees to install 3 speed bumps in the adjacent neighborhood on Cultus St. and Foxhaven Dr., SE, and a pedestrian refuge on Boone Rd. SE as shown on Exhibit F attached to this letter, at an estimated cost of $65,000.

Conclusion

Based upon the evidence in the record and the above analysis, the City Council should conclude that Applicants have a vested right to develop the subject property as proposed and approve the site plan review application.[12] The City Council should conclude, on a separate and independent basis, that the evidence in the record demonstrates that the Applicant has a vested right to develop a shopping center consistent with the application, the application satisfies all of the site plan review approval criteria and approve the application.

Very truly yours,

Wendie L. Kellington

WLK:wlk
CC: Shari Reed, Vice President, PacTrust

[12] Similarly, the City should approve the Type II Driveway Approach Permit.

Attachments
Exhibit A - Site Plan “Options”
Exhibit B - Arborist Report
Exhibit C - Kittelson Traffic Memorandum
Exhibit D - Updated Landscape Plan
Exhibit E - Jeff Olson and Frank Schmidt Letters
Exhibit F - Traffic mitigation (speed bumps and pedestrian refuge)
Exhibit G - Executive Transmittal
Exhibit H - Overall Plan

Site Plan Analysis:

1) 8 significant White Oak Trees to be transplanted. Plus a minimum of 40 additional White Oaks will be planted. Meets SRC 808.030(a)(2)(L).

2) Site Access:
- New roundabout on 27th Ave is the primary access to the site per 2007 Decision conditions 4 and 5,
- Location of this roundabout is fixed as ROW was acquired on 8/14/18 per the Development Agreement approved 5/25/18. This location is consistent with the City's best practices for site access, 2007 Decision conditions 4 and 5.
- RI driveway off Kuebler provides adequate access to the site,
- West driveway off Boone Rd provides adequate access to the site per condition 7,
- Access off of Boone Rd across from Bow Ct provides additional local access to the site (consistent with 2007 Decision conditions 5 & 8).

3) Shopping Center with 174,650 sf of retail uses requires 696 parking stalls. The proposed site plan complies with SRC 806.005(a)(1)/806.015(a) Table 806-1, and meets SRC 220.005(f)(3)(A).

4) Vehicular and pedestrian circulation is orderly, efficient and safe and meets SBC 220.005(f)(3)(B), CPC/ZC 06-6 conditions 5 and 13 and SRC 800.065(a)

5) The proposed shopping center is coordinated with the commercial center to the west with both pedestrian and vehicular circulation aligned (meets 2007 Decision and SRC).

6) Per Class 3 Site Plan Review this site plan complies with all applicable standards of the Salem Revised Code.

7) Costco Fuel Facility located away from residential areas.

8) Receiving dock screened from Residential Uses.

9) Delivery and Fuel Trucks are able to access the site and circulate internally avoiding conflicts and impacts with adjacent residential neighborhood.

10) Site plan meets all 17 of the conditions of approval from the 2007 decision.

MG2

Costco Wholesale

Salem, OR

Proposed Site Plan

MG2 Project: 17-0413-01A

Project Manager: S Bullock

Date: June 11, 2020

Site Plan Analysis:

1) 8 White Oak Trees retained. Overall landscape coverage is 28% including the oak tree protection area (21.9% not including the Oak Protection area). The higher landscape percentage compared to the preferred plan (18.2%) is primarily due to the required location of the fueling positions and configuration of the north property line at the back of the proposed Costco building. It is not possible to reduce the landscaping and in its place add parking because to do so creates an unsafe condition for vehicles and pedestrians and therefore conflicts with SRC 220.005(f)(3)(B).

X 2) A retail shopping center consisting of 189,550 sf requires a minimum of 758 (4/1,000 sf) parking stalls (SRC 806.005(a)(1)/806.015(a) Table 806-1). The parking needed to allow for maximum leasing opportunities (shops, cafes, fast casual and sit-down dining, etc.) on the western portion of the shopping center is 104 parking stalls (7/ 1,000), and 147 is provided resulting in 43 spaces available for the eastern portion of the project. The eastern portion of the site requires a minimum of 699 (4/1,000 sf) parking spaces, but only 546 (3.13/1,000) parking stalls can be provided creating a total deficit of 110 parking spaces (153 east shortfall minus 43 west extra = 110 parking spaces). Therefore, this option fails to meet (SRC 806.005(a)(1)/806.015(a) Table 806-1).

X 3) Site Access:
- New roundabout on 27th Ave is the primary access to the site,
- Location of this roundabout is fixed as ROW was acquired on 8/14/18 per the Development Agreement approved 5/25/18. This location is also consistent with the City's best practices for site access (2007 Decision condition 4 and 5).
- Existing RI driveway off Kuebler provides adequate access to the site,
- Existing driveway off Boone Rd provides adequate access to the site,

X 4) Both vehicular and pedestrian circulation is inefficient, unorderly and pedestrian circulation is unsafe. This conflicts with SRC 220.005(f)(3)(B) and (C) and 800.065(a)(3 & 5).

X 5) This shopping center layout is poorly coordinated with the commercial development to the west. Both pedestrian and vehicular circulation are inadequate.

X 6) Does not comply with a Class 3 Site Plan Review requirements or the 2007 CPC/ZC decision.

X 7) The fuel facility is located in the SE corner along Boone Road, which is necessary to allow adequate traffic flow to and from the main access at 27th Ave. This is the least desirable location within the site due to the proximity to residences along the south side of Boone.

X 8) Receiving dock faces Residential Uses.

X 9) Fuel Trucks would have to access the site from Boone Rd creating conflicts and impacts with adjacent residential neighborhood.

MG2

Costco Wholesale

Salem, OR

NW Option

MG2 Project: 17-0413-01A

Project Manager: S Bullock

Date: June 11, 2020

Site Plan Analysis:

1) Trees retained - 8

X 2) Site Access:
- Roundabout on 27th Ave must be removed from this plan and the ROW acquired for this roundabout will be wasted. This site plan is inconsistent with that location because it does not provide enough space for the building and a safe entering ramp. This plan is inconsistent with the City's best practices for site access and violates 2007 Decision Condition 5.
- RI driveway off Kuebler provides adequate access to the site,
- West driveway off Boone Rd provides adequate access to the site,
- New access off of Boone Rd directly across from Cultus Ct is needed for fuel truck access. This violates Condition 8 of the 2007 CPC/ZC decision.
- New access off of Boone Rd across from Bow Ct is required to provide access to the site for the delivery trucks.

X 3) Shopping Center with 174,650 sf of retail uses requires 696 parking stalls. This site plan provides approx. 560 parking stalls. This fails to comply with SRC 806.005(a)(1)/806.015(a) Table 806-1, and fails to meet SRC 220.005(f)(3)(A).

X 4) Both vehicular and pedestrian circulation is inefficient, unorderly and unsafe. No feasible mitigation is possible so this plan violates SRC 220.005(f)(3)(B) and (C), 800.065(a)(3 & 5) and the 2007 Decision Condition 5.

5) This shopping center can be coordinated with the commercial development to the west.

X 6) This site plan does not comply with Class 3 Site Plan Review requirements.

X 7) Costco Fuel Facility located close to Residential Uses.

X 8) Receiving dock faces Residential Uses.

X 9) Multiple access points on Boone Rd to adjust for not having the 27th Ave roundabout. This violates the 2007 Decision, conditions 4 and 5.

MG2

Costco Wholesale

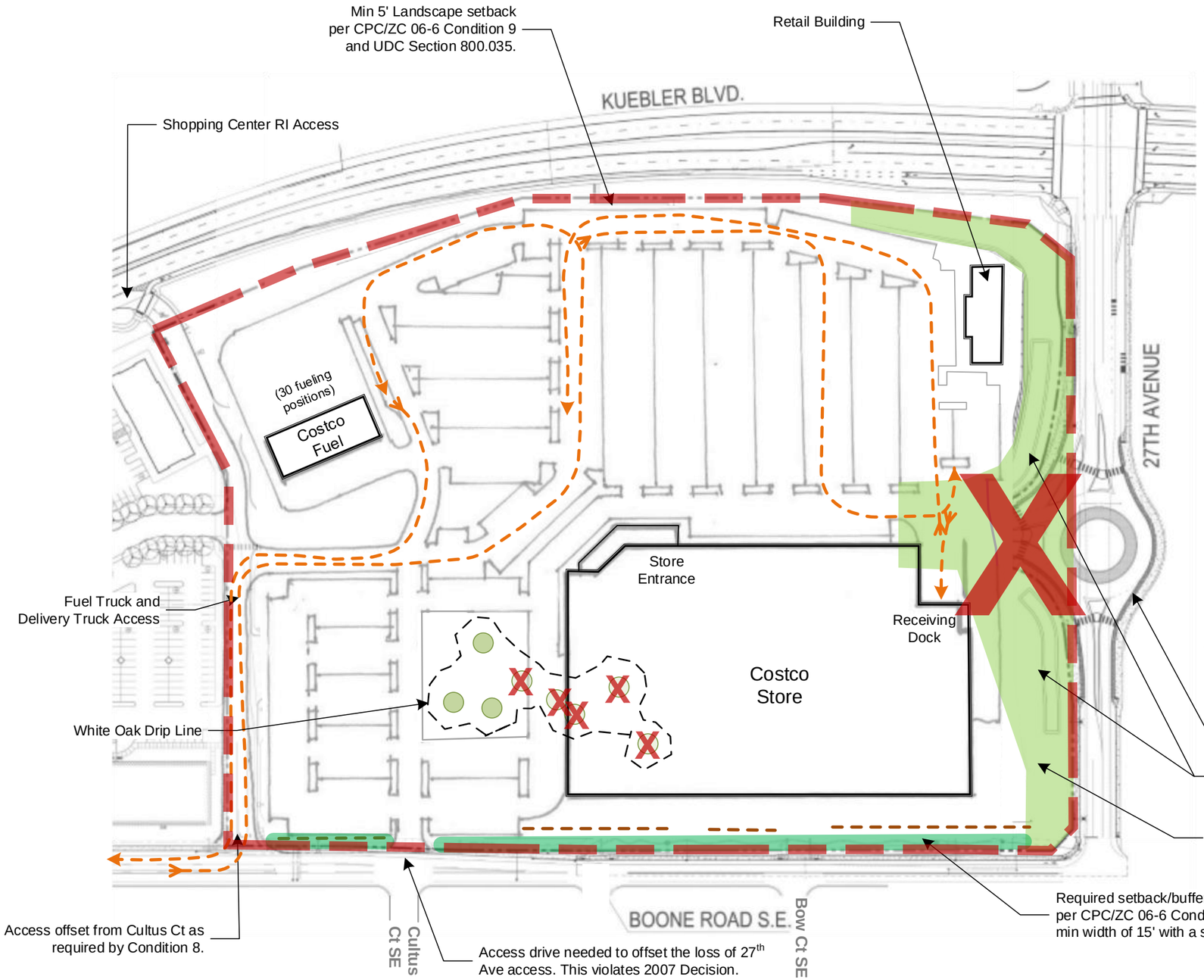
Salem, OR

NE Option

MG2 Project: 17-0413-01A

Project Manager: S Bullock

Date: June 11, 2020



Site Plan Analysis:

X 1) 5 White Oak Trees not retained (SRC 808.015)

X 2) Site Access:
- Roundabout on 27th Ave must be removed from this plan and the ROW acquired for this roundabout will be wasted. This site plan is inconsistent with that location because it does not provide enough space for the building and a safe entering ramp. This plan violates the City's best practices for site access and the 2007 Decision, Condition 5.
- RI driveway off Kuebler provides adequate access to the site,
- West driveway off Boone Rd provides adequate access to the site,
- New access off of Boone Rd directly across from Cultus Ct is needed for Fuel truck access. This violates Conditions 5 & 8 of the 2007 CPC/ZC decision regarding best practices for site planning.

X 3) Shopping Center with 174,650 sf of retail uses requires 696 parking stalls. This site plan provides approx. 660 parking stalls. This fails to comply with SRC 806.005(a)(1)/806.015(a) Table 806-1, and fails to meet SRC 220.005(f)(3)(A).

X 4) Both vehicular and pedestrian circulation is inefficient, unorderly and infeasible mitigation measures required to make it safe for pedestrians. Furthermore, one additional driveway is required off of Boone Rd to provide access for the center and mitigate for the loss of access off 27th Ave SE. This violates 2007 Decision, Conditions 5 & 8.

5) This site plan can be coordinated with the commercial development to the west.

X 6) This site plan does not comply with a Class 3 Site Plan Review .

7) Costco Fuel Facility is located away from Residential Uses.

8) Receiving dock faces away from Residential Uses.

MG2

Costco Wholesale

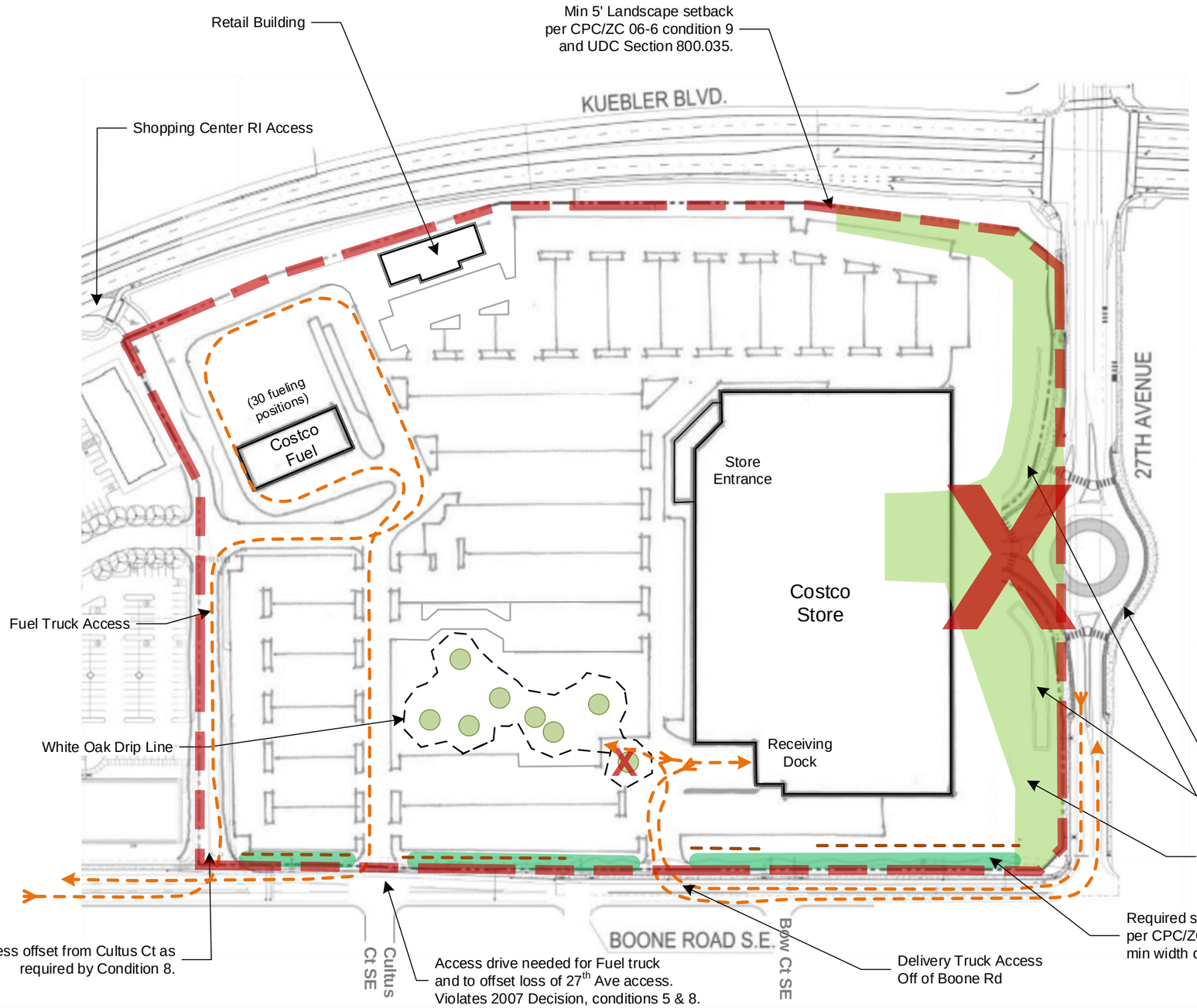
Salem, OR

SE Option 1

MG2 Project: 17-0413-01A

Project Manager: S Bullock

Date: June 11, 2020



Site Plan Analysis:

1) 1 White Oak Tree not retained, SRC 808.015.

2) Site Access:
- Roundabout on 27th Ave must be removed from this plan and the ROW acquired for this roundabout will be wasted. This site plan is inconsistent with that location because it does not provide enough space for the building or the entering ramp. This plan is inconsistent with the City's best practices for site access and violates 2007 Decision, Condition 5.
- RI driveway off Kuebler provides adequate access to the site,
- West driveway off Boone Rd provides adequate access to the site,
- New access off of Boone Rd, directly across from Cultus Ct and Bow Ct, are needed for delivery and fuel truck access. These violate Conditions 5 & 8 of the 2007 CPC/ZC decision.

3) Shopping Center with 174,650 sf of retail uses requires 696 parking stalls. This site plan provides approx. 680 parking stalls. This fails to comply with SRC 806.005(a)(1)/806.015(a) Table 806-1, and fails to meet SRC 220.005(f)(3)(A).

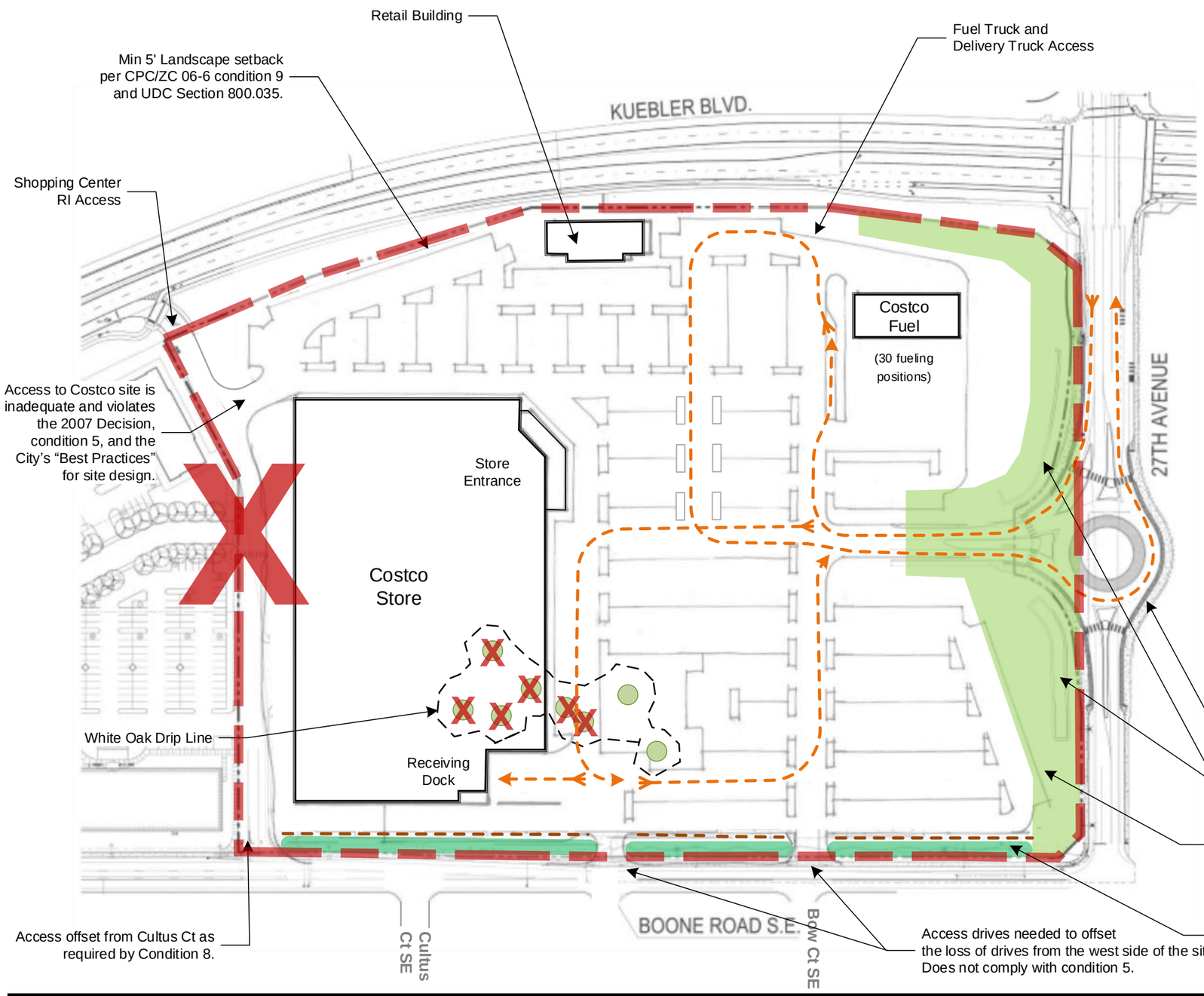
4) Both vehicular and pedestrian circulation is inefficient, unorderly and infeasible mitigation measures required to make it safe for pedestrians. Furthermore, two additional driveways are required off of Boone Rd to provide access for the center and mitigate for the loss of access off 27th Ave SE. This violates 2007 Decision, Conditions 5 & 8.

5) The proposed shopping center can be coordinated with the commercial development to the west.

6) This site plan does not comply with a Class 3 Site Plan Review .

7) Costco Fuel Facility is located away from Residential Uses.

8) Receiving dock is adjacent to Residential Uses.



Site Plan Analysis:

X 1) 6 White Oak Trees not retained (SRC 808.015)

X 2) Site Access:
- New roundabout on 27th Ave is the primary access to the site,
- Location of this roundabout is fixed as ROW was acquired on 8/14/18 per the Development Agreement approved 5/25/18. This location is consistent with the 2007 Decision, Condition 5, and the City's best practices for site access.
- RI driveway off Kuebler provides inadequate access to the site as it is located behind the building,
- Western driveway off Boone Rd provides inadequate access to the site as it is located behind the building,
- Two new accesses off of Boone Rd, directly across from Riley Ct and Bow Ct, are needed to mitigate for the loss of adequate access off Kuebler and Boone Rd. New accesses are inconsistent with Conditions 5 & 8 of the 2007 CPC/ZC decision.

X 3) Shopping Center with 174,650 sf of retail uses requires 696 parking stalls. This site plan provides approx. 685 parking stalls. This fails to comply with SRC 806.005(a)(1)/806.015(a) Table 806-1, and fails to meet SRC 220.005(f)(3)(A).

X 4) Vehicular access is inadequate and violates SRC 220.005(f)(3)(B), 800.065(a)(3 & 5) and 2007 Decision, Condition 5. Pedestrian circulation is inadequate between sites.

X 5) This shopping center layout can not be coordinated with the commercial development to the west.

X 6) This site plan does not comply with Class 3 Site Plan Review.

7) Costco Fueling Facility is located away from Residential Uses.

X 8) Receiving dock is adjacent to Residential Uses.

MG2

Costco Wholesale

Salem, OR

SW Option

MG2 Project: 17-0413-01A

Project Manager: S Bullock

Date: June 11, 2020

To:	Aaron Jacobs, Landscape Manager PacTrust 15350 SW Sequoia Parkway Suite 300 Portland OR. 97224
REFERENCE:	Kuebler Significant Tree – Oregon White Oak Viability
SITE ADDRESS:	2531 and 2521 Boone Rd. SE Salem OR, 97306
DATE:	March 10, 2020
PREPARED BY:	Rick Sartori, ISA Certified Arborist WE-9479A TCIA Certified Treecare Safety Professional (CTSP) Mauget Tree Injector (Forest Worker) Certified

INTRODUCTION

You contracted my services to identify and assess the 8-significant white oak trees at the above referenced site. You provided me a survey showing the location of the surveyed trees (See Page 3) along with plans that show proposed future site plans at the location. You have requested this Arborist Report to examine the LCR_3 health rating of the 8-significant oak trees as defined in Salem Revised Code 808.005 within the project site and provide justification for whether it is feasible to relocate the trees.

The relocation of the 8-significant white oak trees is possible per the following report.

SITE VISIT
I visited the site 3/10/2020, which is currently undeveloped. Much of the site is covered in invasive brambles. Groups of native trees are clustered on the south end side of the site, and this assessment focuses on the 8-significant white oak trees at the south end of Boone Rd.

There are 8 trees identified in this report as Significant, and all are Oregon white oak (Quercus garryana). Significant trees are defined by Salem municipal code as follows:

Sec. 808.005 – Significant trees.
SRC 808.005 - Significant tree means rare, threatened, or endangered trees of any size, as defined or designated under state or federal law and included in the tree and vegetation technical manual, and Oregon white oaks (Quercus garryana) with a dbh of 24 inches or greater.

TREE INSPECTION METHOD
I performed a Level 1 tree risk assessment.[1] This is the standard assessment for populations of trees near specified targets, conducted in order to identify obvious defects or specified conditions such as a pre-development inventory. A limited visual assessment typically focuses on identifying trees in poor declining health or with imminent and/or probable likelihood of failure. [2]

I recorded tree species and size (DBH). I measured the dripline on the cardinal sides of each tree. I rated the condition of each tree, assessing both health and structure.

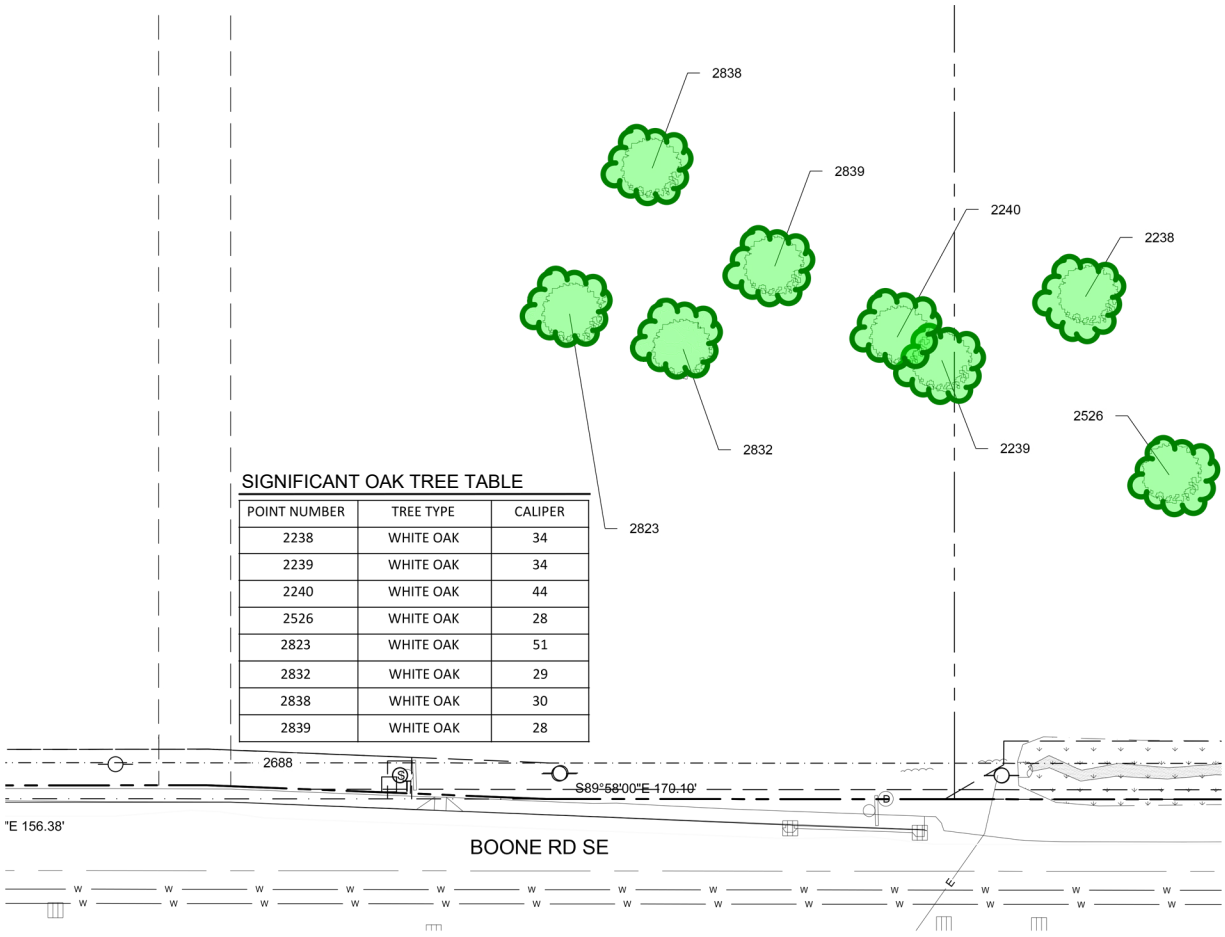
---

1 Companion publication to the ANSI A300 Part 9: Tree Shrub and Other woody Plant Management – Standard Practices, Tree Risk Assessment. 2011. ISA.
2 Companion publication to the ANSI A300 Part 5: Tree Shrub and Other woody Plant Maintenance – Standard Practices, Managing Trees During Construction. 2008. ISA.
3 Live crown ratio (**LCR**)—the ratio of the height of the live crown to the height of the entire **tree** [**LCR**=(crown height/**tree** height) × 100]..... Reduced—pruning to decrease **tree** height or spread by cutting to lateral branches

Definitions:
DBH: Minimum diameter measured at breast height
Drip Line: Means the imaginary line around a tree aligning with the outer edge of the tree's canopy

INVENTORY AND HEALTH

All Oaks received a health assessment and were assigned a LCR rating. The health rating ranges from good to fair. Tree #2239 has adjusted through phototropism due to the proximity to Tree #2240 growing within its drip zone. As a result, both Tree Tag# 2239 & 2240 exhibit less growth and structural branches on the sides facing each other. Trees 2526, 2238, 2239,2240, 2839, 2832 & 2823 have above characteristic form, in line with the species natural growth and habit. All the trees have received structural pruning and injectable nutrient treatments within the last year. Lower scaffold branches were removed as well as deadwood branches .05" and greater. The following information is provided for each of the 8 significant white oak inventoried trees:



SIGNIFICANT OAK TREE TABLE

POINT NUMBER	TREE TYPE	CALIPER
2238	WHITE OAK	34
2239	WHITE OAK	34
2240	WHITE OAK	44
2526	WHITE OAK	28
2823	WHITE OAK	51
2832	WHITE OAK	29
2838	WHITE OAK	30
2839	WHITE OAK	28

EXISTING TREE INFORMATION
SCALE: 1" = 80'

C101
SHEET
© DOWL 2018
PROJECT 14429-01
DATE 05/04/2018

KUEBLER GATEWAY
SHOPPING CENTER
SITE PLAN REVIEW SET
EXISTING STRUCTURES
SE BOONE RD. AND 27TH AVE.
SALEM, OREGON, 97306

PREPARED FOR
COSTCO WHOLESALE
COSTCO WHOLESALE CORPORATION
999 LAKE DRIVE
ISSAQUAH, WA 98029
TEL: (425) 313-8100

DOWL
WWW.DOWL.COM
720 SW Washington Street, #750
Portland, Oregon 97205
971-280-8641

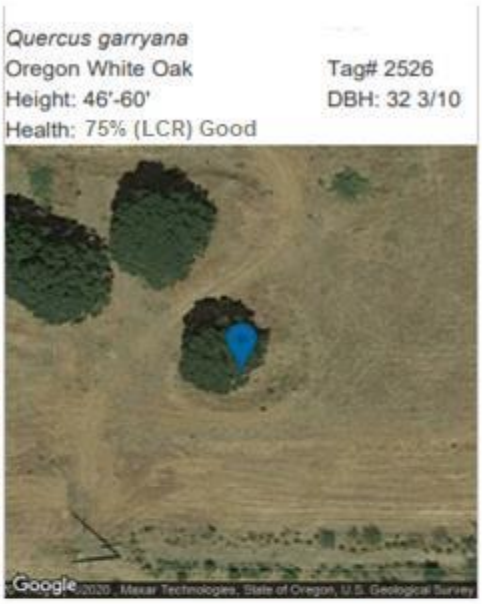
Inventory of Significant Oregon White Oak

Tag #	Tag Date	Last Inspection	Qty	Species	Height	DBH	Health
2526	03/09/2020	04/06/2020	1	Quercus garryana	46'-60'	32 3/10	75% (LCR) Good
2238	03/09/2020	04/06/2020	1	Quercus garryana	46'-60'	33 8/10	70% (LCR) Good
2239	03/09/2020	04/06/2020	1	Quercus garryana	46'-60'	32 1/10	55% (LCR) Fair-Good
2240	03/09/2020	04/06/2020	1	Quercus garryana	46'-60'	37 7/10	55% (LCR) Fair-Good
2839	03/09/2020	04/06/2020	1	Quercus garryana	46'-60'	30 2/10	70% (LCR) Good
2832	03/09/2020	04/06/2020	1	Quercus garryana	46'-60'	31 4/10	70% (LCR Good
2838	03/09/2020	04/06/2020	1	Quercus garryana	46'-60'	28"	35% (LCR) Poor
2823	03/09/2020	04/06/2020	1	Quercus garryana	46'-60'	29 4/10	50% (LCR) Fair

ASSESSMENT

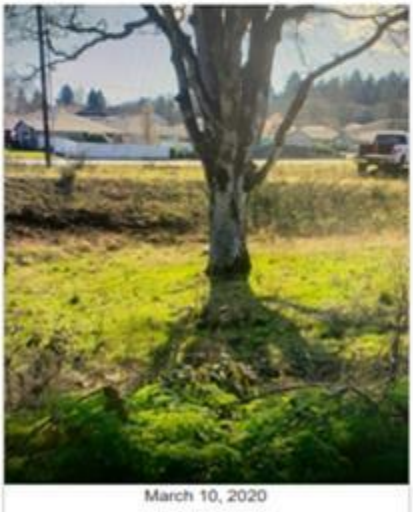
Tag #	Species	DBH (in)	Condition	Health Rating LCR%
2526	***Quercus garyana*** ***Oregon White Oak***	32”	**Condition:** Full balanced branch structure. (Crown width may equal total height) Located in an open stand which has allowed it to develop broad with a well-rounded crown. The root structure is made up of well-developed laterals and given the soil conditions, there is a high probability for a well-established tap root. No major defects or concerns with structural integrity ***Course of Action/Mitigation:*** The tree sits within the footprint of a proposed shopping center development. It is in suitable condition and structure for transplanting. This tree is in Good condition.	75%

March 10, 2020



March 10, 2020

March 10, 2020



March 10, 2020

ASSESSMENT

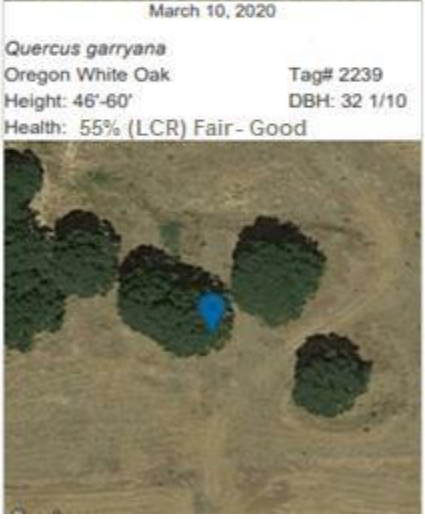
Tag #	Species	DBH (in)	Condition	Health Rating LCR%
2238	***Quercus garyana*** ***Oregon White Oak***	33”	**Condition:** Full balanced branch structure. (Crown width may equal total height) Located in an open stand which has allowed it to develop broad with a well-rounded crown. The structure is comprised of two main co-dominate leaders with roughly 18-24” of bark inclusion. There is some larger rocks/boulders in the dripline of this tree. The root structure is made up of well-developed laterals and given the soil conditions, there is a high probability for a well-established tap root. No major defects or concerns with structural integrity ***Course of Action/Mitigation:*** The tree sits within the footprint of a proposed shopping center development. It is in suitable condition and structure for transplanting. This tree is in Good condition.	70%

March 10, 2020

Quercus garryana
Oregon White Oak
Height: 46'-60'
Tag# 2238
DBH: 33 8/10
Health: 70% (LCR) Good

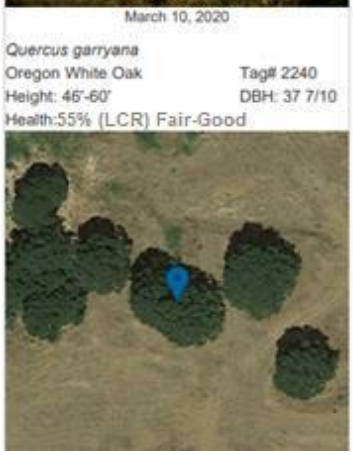
ASSESSMENT

Tag #	Species	DBH (in)	Condition	Health Rating LCR%
2239	***Quercus garyana*** ***Oregon White Oak***	32”	**Condition:** The west side of the canopy is shared with Tree #2240, which is reflecting the LCR %. Full balanced branch structure. (Crown width may equal total height) Located in an open stand which has allowed it to develop broad with a well-rounded crown. The root plate has appeared to settle over the years causing a 10% lean to the east. It has established reactionary anchor roots which can be found on the outside edge of the drip line. No major defects or concerns with structural integrity ***Course of Action/ Mitigation:*** The tree sits within the footprint of a proposed shopping center development. It is in suitable condition and structure for transplanting. This tree is in Fair-Good condition.	55%



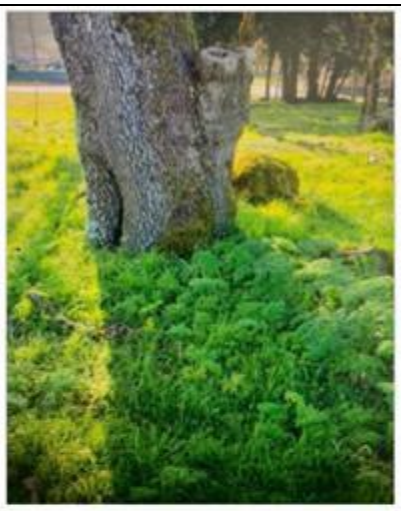
ASSESSMENT

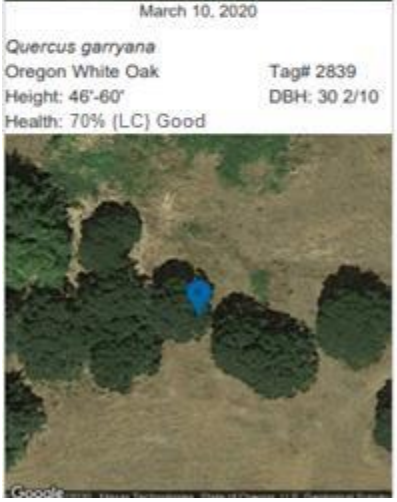
Tag #	Species	DBH (in)	Condition	Health Rating LCR%
2240	***Quercus garyana*** ***Oregon White Oak***	37”	**Condition:** The East side of the canopy is shared with Tree #2239, which is reflecting the LCR%. Branch structure is of a narrow form, but fills out wide at canopy height. The root structure has significant laterals well outside the dripline of the canopy. Development within proximity to this tree’s dripline will impact vital lateral roots and fibrous feeder roots. No major defects or concerns with structural integrity of this tree. ***Course of Action/Mitigation:*** The tree sits within the footprint of a proposed shopping center development. The tree is in a suitable condition and structure for transplanting. Prior to the relocation of this tree, discovery excavation around drip zone and selective root pruning to ensure that no more than 30% of fibrous rootzones are compromised is recommended. If these measures are followed, relocation is feasible. The estimation of additional roots to protect outside of the drip zone is approximately six feet. This tree is in Fair-Good condition.	55%



ASSESSMENT

Tag #	Species	DBH (in)	Condition	Health Rating LCR%
2839	***Quercus garyana*** ***Oregon White Oak***	30”	**Condition:** Full balanced branch structure. Located in an open stand which has allowed it to develop broad with a well-rounded crown. This tree does have a decay in one of the lower stems that may have failed due to storm/weather/act of god. This cavity pocket is approx. 16” before resistance was there. The root structure has well developed adventitious[1] roots. ***Course of Action/Mitigation:*** The tree sits within the footprint of a proposed shopping center development. It is in suitable condition and structure for transplanting. This tree is in Good condition.	70%





1 Adventitious roots are plant roots that form from any nonroot tissue and are produced both during normal development and in response to stress conditions, such as flooding, nutrient deprivation, and wounding.

ASSESSMENT

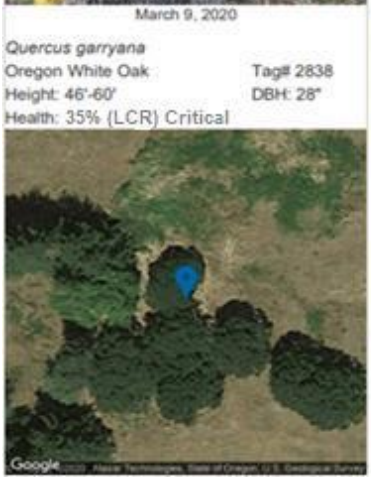
Tag #	Species	DBH (in)	Condition	Health Rating LCR%
2832	***Quercus garyana*** ***Oregon White Oak***	31”	**Condition:** Located in the outer perimeter of the stand. Phototropism has pushed the growth habit away from the stand due to the species intolerance to shade. There is some larger rock/boulders visible within the dripline of this tree. This tree does have a minor wound at the base along the buttress root that is callusing over. However, there is no fruiting bodies associated with this wound and neither is this side of the tree showing any dieback due to this wound. The tree canopy is shared with Trees #2831, 2830 & 2828, which is reflecting the LCR%. The root structure is made up of well-developed laterals and given the soil conditions, there is a high probability for a well-established tap root. ***Course of Action/Mitigation:*** The tree sits within the footprint of a proposed shopping center development. It is in suitable condition and structure for transplanting. This tree is in Good condition.	70%

March 10, 2020

Quercus garryana
Oregon White Oak
Height: 46'-60'
Tag# 2832
DBH: 31 4/10
Health: 70% (LCR) Good

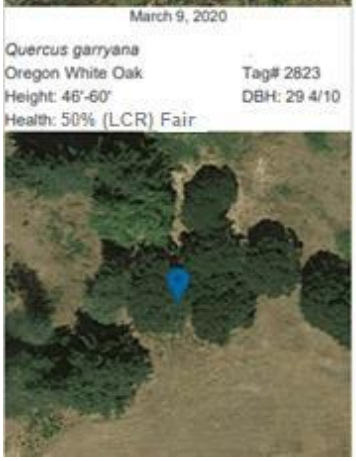
ASSESSMENT

Tag #	Species	DBH (in)	Condition	Health Rating LCR%
2838	***Quercus garyana*** ***Oregon White Oak***	28”	**Condition:** Located at the North outer edge of the stand which has allowed it to develop broad with a well-rounded crown. There are some larger rocks/boulders located in the dripline of this tree. The trunk has multiple calloused over burls, which impacts the LCR rating. The root structure has well developed adventitious roots. This tree shares the canopy with Tree #2827 and the Elm tree to the West. ***Course of Action/Mitigation:*** The tree sits within the footprint of a proposed shopping center development. This tree could not survive a change in grade of the surrounding substrate. It has self-corrected over the years in the natural environment, but is still weak. Maintaining this tree in a developed environmental condition is not sustainable and thus recommended for relocation as its best chance for survival. Overall, long-term survival of the tree remains low. This tree is in Poor condition.	35%



ASSESSMENT

Tag #	Species	DBH (in)	Condition	Health Rating LCR%
2823	***Quercus garyana*** ***Oregon White Oak***	29”	**Condition:** This tree is in fair condition. Overarching branch structure. Located in the outer perimeter of the stand. It shares its canopy with Tree #2830 and 2828, and two pine trees located to the West, which reflects the LCR%. The lowest limb at one point had failed due to weather or an act of god and has since formed some decay, but CODIT is starting its process. It is possible that there is some decay into the trunk. Phototropism has pushed the growth habit away from the stand due to the species intolerance to shade. The root structure is made up of well-developed large laterals and given the soil conditions, multiple large rocks/boulders spread throughout the dripline. ***Course of Action/Mitigation:*** The tree sits within the footprint of a proposed shopping center development. It is in suitable condition and structure for transplanting. Rocks and boulders inside the dripline shall be maintained in place during the process. This tree is in Fair condition.	50%



MITIGATION MEASURES ~ RELOCATION

Tag # 2526: The Oak tree is full balanced branch structure. (Crown width may equal total height) Located in an open stand which has allowed it to develop broad with a well-rounded crown. The root structure is made up of well-developed laterals and given the soil conditions, there is a high probability for a well-established tap root. No major defects or concerns with structural integrity. The process of transplanting the tree 1) Ideal dates are between November 15th to April 15th when the tree is dormant. However, if transplanting is preformed after these dates an anti-transparent will need to be applied and root ball will need to be irrigated before transplanting will occur. 2) Root ball width will be established and marked off. 3) The area from trunk to the edge of the established root ball shall not be walked-on unnecessarily, and heavy items/equipment kept away. Ball sizes should always be of a diameter and depth to encompass enough of the fibrous and feeding root system as necessary for the full recovery of the tree. Given the variety of acceptable cultural practices in the industry, the ball sizes set forth in each applicable section are based on those factors which are objectively observable and measurable: the height, width, or caliper measurement. Other cultural practices in the nursery, such as transplanting or root pruning practices or watering techniques, or soil types and local growing conditions, certainly affect the density of the roots, but are much more difficult to observe and measure within the context of the Standard. It is recognized that Oaks having a coarse or wide-spreading root system because of natural habit of growth, soil condition, infrequent transplanting practice, would require a root ball larger than what would be considered typical of other trees. American Standard for Nursery Stock (ANSI Z60.1-2014) 12 | AmericanHort.org 1.5.2 Plant in center of root ball. The center of the trunk(s) or stem(s) of the tree shall be in the center of the root ball. A tolerance of 10% of the diameter of the root ball is the maximum deviation allowable (See Figure 7). For example: For a tree with a 30-inch root ball, the center of the plant at ground level shall be within a three-inch circle 13 ½ inches from the outer edge of the ball.

Tag # 2238: Full balanced branch structure. (Crown width may equal total height) Located in an open stand which has allowed it to develop broad with a well-rounded crown. The structure is comprised of two main co-dominate leaders with roughly 18-24” of bark inclusion, there is some larger rocks/boulders in the dripline of this tree. The root structure is made up of well-developed laterals and given the soil conditions, there is a high probability for a well-established tap root. No major defects or concerns with structural integrity. The process of transplanting the tree 1) Ideal dates are between November 15th to April 15th when the tree is dormant. However, if transplanting is preformed after these dates an anti-transparent will need to be applied and root ball will need to be irrigated before transplanting will occur. 2) Root ball width will be established and marked off. 3) The area from trunk to the edge of the established root ball shall not be walked-on unnecessarily, and heavy items/equipment kept away. Ball sizes should always be of a diameter and depth to encompass enough of the fibrous and feeding root system as necessary for the full recovery of the tree. Given the variety of acceptable cultural practices in the industry, the ball sizes set forth in each applicable section are based on those factors which are objectively observable and measurable: the height, width, or caliper measurement. Other cultural practices in the nursery, such as transplanting or root pruning practices or watering techniques, or soil types and local growing conditions, certainly affect the density of the roots, but are much more difficult to observe and measure within the context of the Standard. It is recognized that Oaks having a coarse or wide-spreading root system because of natural habit of growth, soil condition, infrequent transplanting practice, would require a root ball larger than what would be considered typical of other trees. American Standard for Nursery Stock (ANSI Z60.1-2014) 12 | AmericanHort.org 1.5.2 Plant in center of root ball. The center of the trunk(s) or stem(s) of the tree shall be in the center of the root ball. A tolerance of 10% of the diameter of the root ball is the maximum deviation allowable (See Figure 7). For example: For a tree with a 30-inch root ball, the center of the tree at ground level shall be within a three-inch circle 13 ½ inches from the outer edge of the ball.

Tag #2239: The West side of the canopy is shared with Tree #2240, which is reflecting the LCR %. Full balanced branch structure. (Crown width may equal total height). Located in an open stand which has allowed it to develop broad with a well-rounded crown. The root plate has appeared to settle over the years causing a 10% lean to the East. It has established reactionary anchor roots which can be found on the outside edge of the drip line. Due to these roots, it will need to be transplanted with Tree #2240. No major defects or concerns with structural integrity. The process of transplanting the tree 1) Ideal dates are between November 15th to April 15th when the tree is dormant. However, if transplanting is preformed after these dates an anti-transparent will need to be applied and root ball will need to be irrigated before transplanting will occur. 2) Root ball width will be established and marked off. 3) The area from trunk to the edge of the established root ball shall not be walked-on unnecessarily, and heavy items/equipment kept away. Ball sizes should always be of a diameter and depth to encompass enough of the fibrous and feeding root system as necessary for the full recovery of the tree. Given the variety of acceptable cultural practices in the industry, the ball sizes set forth in each applicable section are based on those factors which are objectively observable and measurable: the height, width, or caliper measurement. Other cultural practices in the nursery, such as transplanting or root pruning practices or watering techniques, or soil types and local growing conditions, certainly affect the density of the roots, but are much more difficult to observe and measure within the context of the Standard. It is recognized that Oaks having a coarse or wide-spreading root system because of natural habit of growth, soil condition, infrequent transplanting practice, would require a root ball larger than what would be considered typical of other trees. American Standard for Nursery Stock (ANSI Z60.1-2014) 12 | AmericanHort.org 1.5.2 Plant in center of root ball. The center of the trunk(s) or stem(s) of the tree shall be in the center of the root ball. A tolerance of 10% of the diameter of the root ball is the maximum deviation allowable (See Figure 7). For example: For a tree with a 30-inch root ball, the center of the plant at ground level shall be within a three-inch circle 13 ½ inches from the outer edge of the ball.

Tag #2240: The East side of the canopy is shared with Tree #2239, which is reflecting the LCR%. Branch structure is of a narrow form but fills out wide at canopy height. The root structure has significant laterals well outside the dripline of the canopy, approximately 6 additional feet. Development within proximity to this tree's dripline will impact vital lateral roots and fibrous feeder roots. No major defects or concerns with structural integrity. It will need to be transplanted with Tree #2239. The process of transplanting the tree 1) Ideal dates are between November 15th to April 15th when the tree is dormant. However, if transplanting is preformed after these dates an anti-transparent will need to be applied and root ball will need to be irrigated before transplanting will occur. 2) Root ball width will be established and marked off. 3) The area from trunk to the edge of the established root ball shall not be walked-on unnecessarily, and heavy items/equipment kept away. Ball sizes should always be of a diameter and depth to encompass enough of the fibrous and feeding root system as necessary for the full recovery of the tree. Given the variety of acceptable cultural practices in the industry, the ball sizes set forth in each applicable section are based on those factors which are objectively observable and measurable: the height, width, or caliper measurement. Other cultural practices in the nursery, such as transplanting or root pruning practices or watering techniques, or soil types and local growing conditions, certainly affect the density of the roots, but are much more difficult to observe and measure within the context of the Standard. It is recognized that Oaks having a coarse or wide-spreading root system because of natural habit of growth, soil condition, infrequent transplanting practice, would require a root ball larger than what would be considered typical of other trees. American Standard for Nursery Stock (ANSI Z60.1-2014) 12 | AmericanHort.org 1.5.2 Plant in center of root ball. The center of the trunk(s) or stem(s) of the tree shall be in the center of the root ball. A tolerance of 10% of the diameter of the root ball is the maximum deviation allowable (See Figure 7). For example: For a tree with a 30-inch root ball, the center of the tree at ground level shall be within a three-inch circle 13 ½ inches from the outer edge of the ball.

Tag #2839: Full balanced branch structure. Located in an open stand which has allowed it to develop broad with a well-rounded crown. This tree does have a decay in one of the lower stems that may have failed due to storm/weather/act of god. This cavity pocket is approx. 16" before resistance was there. The root structure has well developed adventitious roots. The process of transplanting the tree 1) Ideal dates are between November 15th to April 15th when the tree is dormant. However, if transplanting is preformed after these dates an anti-transparent will need to be applied and root ball will need to be irrigated before transplanting will occur. 2) Root ball width will be established and marked off. 3) The area from trunk to the edge of the established root ball shall not be walked-on unnecessarily, and heavy items/equipment kept away. Ball sizes should always be of a diameter and depth to encompass enough of the fibrous and feeding root system as necessary for the full recovery of the tree. Given the variety of acceptable cultural practices in the industry, the ball sizes set forth in each applicable section are based on those factors which are objectively observable and measurable: the height, width, or caliper measurement. Other cultural practices in the nursery, such as transplanting or root pruning practices or watering techniques, or soil types and local growing conditions, certainly affect the density of the roots, but are much more difficult to observe and measure within the context of the Standard. It is recognized that Oaks having a coarse or wide-spreading root system because of natural habit of growth, soil condition, infrequent transplanting practice, would require a root ball larger than what would be considered typical of other trees. American Standard for Nursery Stock (ANSI Z60.1-2014) 12 | AmericanHort.org 1.5.2 Plant in center of root ball. The center of the trunk(s) or stem(s) of the tree shall be in the center of the root ball. A tolerance of 10% of the diameter of the root ball is the maximum deviation allowable (See Figure 7). For example: For a tree with a 30-inch root ball, the center of the plant at ground level shall be within a three-inch circle 13 ½ inches from the outer edge of the ball.

Tag #2832: Located in the outer perimeter of the stand. Phototropism has pushed the growth habit away from the stand due to the species intolerance to shade. There are some larger visible rock/boulders visible within the dripline of this tree. This tree does have a minor wound at the base along the buttress root that is callusing over. This wound is not showing visible signs of decay or dieback. The tree canopy is shared with by Tree #2831, 2830 & 2828, which is reflecting the LCR%. The root structure is made up of well-developed laterals and given the soil conditions, there is a high probability for a well-established tap root. The process of transplanting the tree 1) Ideal dates are between November 15th to April 15th when the tree is dormant. However, if transplanting is preformed after these dates an anti-transparent will need to be applied and root ball will need to be irrigated before transplanting will occur. 2) Root ball width will be established and marked off. 3) The area from trunk to the edge of the established root ball shall not be walked-on unnecessarily, and heavy items/equipment kept away. Ball sizes should always be of a diameter and depth to encompass enough of the fibrous and feeding root system as necessary for the full recovery of the tree. Given the variety of acceptable cultural practices in the industry, the ball sizes set forth in each applicable section are based on those factors which are objectively observable and measurable: the height, width, or caliper measurement. Other cultural practices in the nursery, such as transplanting or root pruning practices or watering techniques, or soil types and local growing conditions, certainly affect the density of the roots, but are much more difficult to observe and measure within the context of the Standard. It is recognized that Oaks having a coarse or wide-spreading root system because of natural habit of growth, soil condition, infrequent transplanting practice, would require a root ball larger than what would be considered typical of other trees. American Standard for Nursery Stock (ANSI Z60.1-2014) 12 | AmericanHort.org 1.5.2 Plant in center of root ball. The center of the trunk(s) or stem(s) of the tree shall be in the center of the root ball. A tolerance of 10% of the diameter of the root ball is the maximum deviation allowable (See Figure 7). For example: For a tree with a 30-inch root ball, the center of the plant at ground level shall be within a three-inch circle 13 ½ inches from the outer edge of the ball.

Tag #2838: Located at the North outer edge of the cluster. This tree has a nice developed crown that appears to be healthy at first glance. Upon further inspection, this tree has multiple old wounds and deeply calloused burls. It has lived this long through self-correction in its environment, but is still very weak. With development, transplanting this tree is the best chance for its survival. Given the soil conditions and multiple large rocks/boulders spread throughout the dripline, those rocks shall remain in place during transplanting. Because chances for survival are low, this tree may see a slightly different transplanting process than others described that will be largely dictated by field conditions upon exposure.

Tag #2823: Overarching branch structure. Located in the outer perimeter of the stand. It shares its canopy with Tree #2830, and 2828, and two pine trees located to the West, which reflects the LCR%. The lowest limb at one point had failed due to weather or an act of god and has since formed some decay, but CODIT is starting its process. It is possible that there is some decay in the trunk. Phototropism has pushed the growth habit away from the stand due to the species intolerance to shade. The root structure is made up of well-developed large laterals. Given the soil conditions and multiple large rocks/boulders spread throughout the dripline, those rocks shall remain in place during transplanting. The process of transplanting the tree 1) Ideal dates are between November 15th to April 15th when the tree is dormant. However, if transplanting is preformed after these dates an anti-transparent will need to be applied and root ball will need to be irrigated before transplanting will occur. 2) Root ball width will be established and marked off. 3) The area from trunk to the edge of the established root ball shall not be walked-on unnecessarily, and heavy items/equipment kept away. Ball sizes should always be of a diameter and depth to encompass enough of the fibrous and feeding root system as necessary for the full recovery of the plant. Given the variety of acceptable cultural practices in the industry, the ball sizes set forth in each applicable section are based on those factors which are objectively observable and measurable: the height, width, or caliper measurement. Other cultural practices in the nursery, such as transplanting or root pruning practices or watering techniques, or soil types and local growing conditions, certainly affect the density of the roots, but are much more difficult to observe and measure within the context of the Standard. It is recognized that Oaks having a coarse or wide-spreading root system because of natural habit of growth, soil condition, infrequent transplanting practice, would require a root ball larger than what would be considered typical of other trees. American Standard for Nursery Stock (ANSI Z60.1-2014) 12 | AmericanHort.org 1.5.2 Plant in center of root ball. The center of the trunk(s) or stem(s) of the tree shall be in the center of the root ball. A tolerance of 10% of the diameter of the root ball is the maximum deviation allowable (See Figure 7). For example: For a tree with a 30-inch root ball, the center of the plant at ground level shall be within a three-inch circle 13 ½ inches from the outer edge of the ball.

MITIGATION MEASURES ~ STANDARD PROCESS

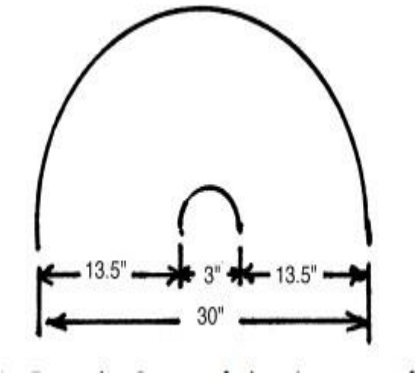
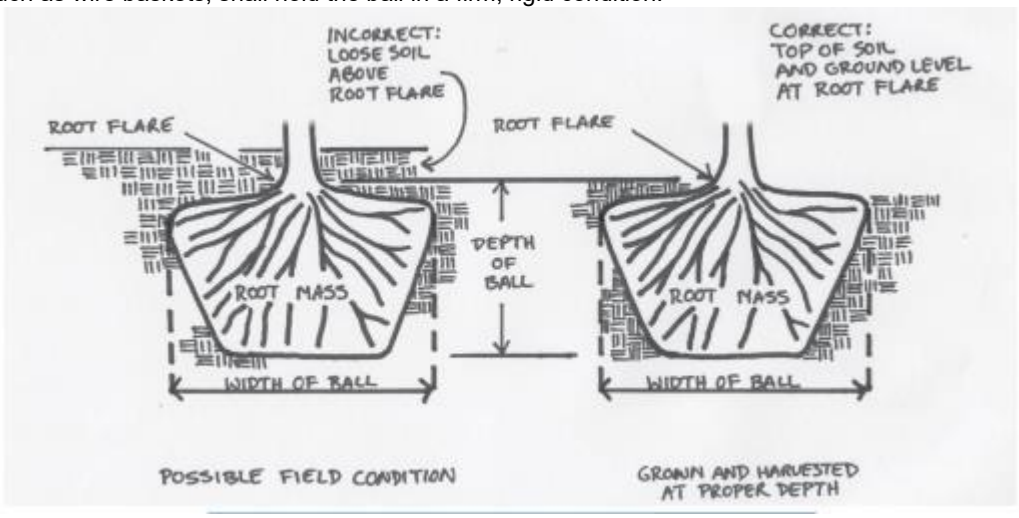


FIGURE 7 – Example: Center of plant in center of root ball

1.5.3 Root ball depths Measurement: Depth of the root ball is measured from the top of the ball, which in all cases shall begin at the root flare (see Figure 8). Soil above the root flare, from being deeply planted in the nursery as a young plant, as a result of maintenance practices in the nursery, or added during harvest, shall not be included in ball depth measurement, and should be removed. Under certain soil and regional conditions, plants have root systems of proportionately less depth and greater diameter. These require a more shallow but wider ball to properly encompass the roots. Conversely, in other soils and in certain regions roots develop greater depth and less spread, requiring an exceptionally deep ball, which may be smaller in diameter and greater in depth than the size recommended. For the Salem area, ball depths will carry the following ratios: Root balls with diameters less than 20 inches - depth not less than 65% of the diameter of the ball. Root balls with diameters of 20 inches and up - depth not less than 60% of the diameter of the ball. FIGURE 8 – Measurement of root ball depths American Standard for Nursery Stock (ANSI Z60.1-2014) AmericanHort.org | 13 1.5.4 Burlapping Burlap or other suitable material shall be biodegradable and shall completely cover the root ball. This wrapping shall be between the earth ball and the lacing or ball supporting device. 1.5.5 Ball-supporting devices If used, ball-supporting devices, such as wire baskets, shall hold the ball in a firm, rigid condition.



4) Excavation and forming of the root ball will be used with sharped spades handsaws (pruning saw) loppers, hand pruners. Excavators can be used to move dirt but not to cut roots. If a tree spade is used to move the tree the volume will need be large enough to contain enough roots. I would recommend using a roller method or a similar method to move the tree. 5) The root ball will need to be wrapped in treated burlap and drum laced with a biodegradable twin and rope. The tree can be shored up with planks or similar items in lieu of burlap to prevent dirt and roots to separate during the movement/transplant. 6) The trees will be brought to the staging area and placed into a hole that is premeasured to the correct depth and width (The hole should be 2'-3' wider than the root ball). The sides and bottom of the hole should not be glazed over, it should be roughed up with a spade to allow root growth and water movement. 7) The tree will need to be back filled native soil and in small quantities to prevent air pockets. Due to the amount of stabilizer roots removed the tree will need to be staked to prevent tipping/falling over. 7'or 10' t-post or a similar item are to be used to anchor the tree in the ground. The guidelines should be attached to the tree 1/3 up the canopy with steel cable 1/4" and at an angle to provide the maximum support. The cable should be wrapped with 3/8 garden house or similar product to prevent chaffing of bark.

Example of recommended method of transport:

Crane

MITIGATION MEASURES ~ MAINTENANCE OF RELOCATED TREES

Transplanting is a shock on mature oaks. The trees need to be well care for before and after the move to keep the trees healthy, happy and vigorous. During the transplant, the tree temporarily loses its ability to uptake water due to the cutting of roots, which breaks the vacuum and the tree will expel water through transpiration. Irrigation before and after the transplant is critical to help the tree survive the transplant. The ideal time to transplant the tree is after November 15th up to April 15th. If the transplant will occur after April 15th an anti transpirant will need to be applied to prevent over transpiration. When the trees are in the staging area, supplemental irrigation will need to be used, drip irrigation for example Netafim or John Deere spot sprayers as long as water is not sprayed on the trunk. The soil will need to be monitored weekly to see if the soil is damp, but not oversaturated, which could lead to root rot. An irrigation timer is recommended to monitor the amount of water being applied to the trees.

The staging area will need to have tree protection fencing surrounding the area allowing only certified personnel to oversee/access the care of the trees. If burlap is used it should not be exposed to the sun due to its wicking nature. Fertile mulch should be applied to the top of the root ball extending beyond the trees drip line and not to exceed 3" in depth.

Mulching: Spread a 2-3-inch layer of organic mulch such as shredded hardwood, wood chips, coarse compost, or licorice root in the area under the tree. Because of the possibility of disease or rodent damage, no mulch should touch the trunk or the root flare. Mulching helps conserve water, prevent weed growth, moderate soil temperatures, and act as a barrier especially during construction activities. The wider the area mulched, the less competition there is from surrounding turfgrass.

Fertilizer is usually not needed until the year after transplanting has occurred. It is estimated that 30% of growth after a transplant is in roots alone, the tree will try to reestablish the roots that were removed during the transplant. To provide nutrients to stimulate this process, it is recommended to apply low doses of natural nutrients. A low doses of organic root fertilizer is recommended to help regrow fibrous roots to allow uptake of more water and nutrients (preferably a soil drench of a fertilizer tea). I would also recommend a Mycorrhizal Fungi treatment to help produce a new tap and secondary root and a treatment of Pageant Intrinsic fungicide to combat any fungal issues that arise due to stress since Oaks are prone to fungal issues. After the first year, the tree will need a source of a broad spectrum of nutrients. To determine which nutrients are needed, have a soil test performed. Using those test results, fertilize using slow-release, non-burning organics, a high-nitrogen fertilizer containing slow release nitrogen (such as 10-6-4 50% organic), or water-soluble plant food to supply those nutrients. Apply just beyond the drip line of the tree following the label directions for rate.

Water thoroughly. A tree is considered a transplant for at least 2 years and for as long as 10 years, no matter how old it is when planted. (One rule-of-thumb is that transplant recovery takes the diameter-of-the-tree-plus-one in years. For example, a three-inch caliper tree should take 4 years to recover from transplanting). Even a tree such as the *Quercus garyana* is drought tolerant or wet site tolerant when established will not have that tolerance for the first two to four years that it takes to redevelop a strong root system. The trees should be watered deeply once a week in warm weather, more frequently in hot, windy weather. Generally, it is not necessary to water trees daily after the first week. This discourages development of a healthy root system. Trees planted in quick-draining loamy sand or sandy loam soils will need water more often than those in heavier silt loam or clay soils or in soils high in organic matter. Continue watering until the leaves drop in autumn. I would recommend installing irrigation bags and rings can be very useful in maintaining moisture. Water is poured into the bag or ring and allowed to seep gradually into the soil around the base of the tree. This can reduce the amount of time necessary to water thoroughly and also the possibility of overwatering. Also, it is not necessary to constantly drag hoses from one place to another. It is difficult to give much guidance other than general information when suggesting how much to water newly planted materials. Variables include the size of the plant and planting pit, the texture of the native soil, the amount of organic matter, the amount of natural rainfall, the type of soil or potting mix in the root ball or container, average daily temperatures, winds, exposure (west and south are more drying than north or east), and size of leaf canopy. The goals are to keep the soil moist, but not soggy, and never to let the soil dry completely while the plants are becoming established. (A watering rule-of-thumb is a five-gallon bucket of water per each inch of trunk diameter twice a week if there is no rain.) Be sure that the original soil ball and the backfill soil are both moistened completely. Care must be taken not to drown the tree. The best time of day to water is morning. On occasion a tree may wilt slightly in the heat of a scorching summer afternoon. If the tree recovers after sunset, its roots probably could not fill the high-water demand created by high temperatures, but there was enough water in the soil for it to become turgid again in the evening. Watering in late afternoon may supply more water than the tree can use.

Because of the possibility of overwatering and overfertilizing, it is not recommended to plant annual flowers at the base of a newly planted tree. Also, be sure lawn irrigation systems do not water the tree or shrubs along with the lawn.

The staking material will need to be monitored monthly to adjust tension of the cables if there is any settling of the soil after the transplant.

CERTIFICATE OF PERFORMANCE

I, Rick Sartori, General Manager and Certified Arborist for Monarch Tree Services certify that:

- I have personally inspected the trees and the property referred to in this report and have stated my findings accurately. The extent of the evaluation is stated in the attached report.
- The analysis, opinions, and conclusions stated herein are my own and are based on current scientific procedures and facts and do not rule out an unexpected failure due to major weather related events.
- My analysis, opinions, and conclusions were developed, and this report has been prepared according to commonly accepted arboriculture practices and standards set forth by the International Society of Arboriculture.
- No one provided significant professional assistance to me.

I further certify that I am a member in good standing of the International Society of Arboriculture, TCIA & the Pacific Northwest Chapter of Certified Arborist. I have been involved in the field of Horticulture and Arboriculture in a full-time capacity for more than 19 years.

KITTELSON & ASSOCIATES
851 SW 6th AVENUE, SUITE 600
PORTLAND, OR 97204
P 503.228.5230 F 503.273.8169

MEMORANDUM

Date:	June 6, 2020	Project #: 22051
To:	Tony Martin, City of Salem	
Cc:	Shari Reed & Matt Oyen, Pacific Realty Associates, L.P. (PacTrust) Peter Kahn, AVP, Costco Wholesale Corporation	
From:	Andy Daleiden, PE, Claire Dougherty, and Anthony Yi, PE, Kittelson & Associates, Inc.	
Project:	Kuebler Gateway Shopping Center	
Subject:	Response to Greenlight Engineering comments	

This memorandum responds to the December 10, 2018 Greenlight Engineering comments related to the Kittelson & Associates, Inc. (KAI) May 31, 2018 Traffic Study for the Kuebler Gateway Shopping Center. This memorandum summarizes the Greenlight Engineering comments in *italics* and provides our response in standard text. This response is organized based on issues highlighted in the Greenlight memorandum as many of the comments are found throughout the Greenlight document. We have addressed many of these issues in previous memoranda. However, because significant time has elapsed, we believed it to be helpful to respond here. We apologize for any duplication.

Furthermore, the May 31, 2018 Traffic Study and supplemental documents prepared by KAI have been reviewed and approved by traffic professionals at the City of Salem. Also, ODOT has informed both the City and applicant that the materials and analyses KAI provided in response to its comments is adequate to resolve ODOT's concerns.

NATURE OF THE TRAFFIC ANALYSIS KAI PERFORMED FOR SITE REVIEW

The land use request at issue is Site Review for a shopping center (and a Class II Driveway Approach Permit), the trips for which were thoroughly and exhaustively evaluated in the traffic analyses KAI performed for the 2007 PA/ZC, for the entire 28.4-acre property. The 2007 Decision's TIA was designed to comply with TPR requirements for plan amendments which generally look to whether the street system in the surrounding area is adequate to serve the permitted uses on the property. As such, the TIA for the 2007 Decision evaluated traffic impacts on the larger surrounding area street system, than relevant for Site Review. That TIA also evaluated a significantly larger shopping center than is proposed here. The TIA for the 2007 Decision evaluated traffic impacts to the larger surrounding area street system, associated with a shopping center composed of 290,000 sq. ft. of retail shopping space and 24,000 square feet of medical office space, over the totality of the 28.4 acres of the property (for a total of 314,000 square feet overall that was studied). Ultimately, in 2007, the City Council approved a total shopping center (with medical offices) in the amount of

299,000 sq. ft. over the entire 28.4 acres and a maximum retail GLA of 240,000 GLA for the 18.4 acres, if it was developed alone.

This Site Review is for a total of 24.36 acres and significantly less retail GLA than was studied for the 2007 plan amendment decision. This Site Review is for approximately 24.36-acres of the property, for a **total retail GLA of 189,550 sq. ft. sq. ft**. When the GLA for this Site Review is added to the existing medical buildings on the entire 28.4-acre property, which are composed of 38,512 sq. ft., the total overall development is 228,062 sq. ft., which is fully 85,938 sq. ft. less GLA than we reviewed for the 2007 Decision.

The 2007 Decision imposes significant conditions of approval to mitigate for a shopping center composed of 314,000 GLA on the surrounding street system. The applicant has already fulfilled many of those conditions of approval.

The purpose of the KAI traffic analysis for this Site Review was by its nature different. The purpose of Site Review is explained in the City Code:

> "*** to ensure that such development meets all applicable standards of the UDC, including but not limited to, standards related to access, pedestrian connectivity, setbacks, parking areas, external refuse areas, open areas, landscaping and transportation and utility infrastructure."

Site Review does not look to the adequacy of the broader surrounding street system, like the much broader and demanding TPR analytical requirements applied in the 2007 Decision. Rather, the city's Site Review traffic standards (SRC 220.005(f)(3)(B) and (C)), require that the City approve Site Review where:

> "The transportation system provides for the safe, orderly and efficient circulation of traffic into and out of the proposed development, and negative impacts to the transportation system are mitigated adequately; "
>
> and
>
> "Parking areas and driveways are designed to facilitate safe and efficient movement of vehicles, bicycles and pedestrians."

Accordingly, the purpose of the KAI traffic analysis for this Site Review was to verify that the traffic generated by the proposed 189,550 sq. ft. retail shopping center development did not exceed volumes fully mitigated by the 2007 Decision, and in the context of current volumes and traffic, to demonstrate compliance with SRC 220.005(f)(3)(B) and (C), which looks only to the adequacy of site access and of streets immediately adjacent to the subject property. A full TIA was not required because the development does not generate more than 1000 trips that have not already been fully accounted for. The trips associated with the shopping center reflected in the site review application

have been addressed and mitigated by the 2007 Decision. Either for this reason or that specified in SRC 803.015(d), the City Administrative Rules "Roadways Standards", do not apply, because the Roadway Standards in 6.33 apply only when "SRC Chapter 803 identifies the threshold for requiring a TIA."

We note that such does not mean that the proposal does not conform to the applicable specific standards for street improvements established in SRC 803. It means only that a broad TIA analysis is not required in the circumstances presented in this application where the broader street system has been exhaustively studied and conditions exacted to mitigate for the impacts of a much larger shopping center.

Here, the only issue is whether the KAI analysis provides adequate evidence to demonstrate compliance with SRC 220.005(f)(3)(B) and (C) and the applicable provisions in SRC 803; not whether it meets the technical requirements for broader TIA's.

REQUESTS FOR INFORMATION / ITE ASSUMPTIONS

Greenlight requests KAI provide it with the underlying data that supports the Costco specific trip generation and traffic behavior assumptions that were applied to the KAI traffic analysis. It is voluminous but is, nevertheless, appended to this report. Greenlight also requests that KAI study traffic generated at the site under the ITE manual category of Discount Store, which KAI agrees describes a Costco store. Greenlight is also correct that the ITE "Discount Store" category includes those "Discount Stores" with fueling positions. To hopefully avoid further controversy on the subject, KAI explains here as it has explained before and as is reflected in the Staff Decision, that the ITE assumptions for a Discount Store assume *much less traffic is generated than Costco's site-specific data shows*. Either under the Costco specific data or ITE, the shopping center meets SRC 220.005(f)(3)(B) and (C). We explain this in detail below.

GREENLIGHT ENGINEERING COMMENTS AND RESPONSES

Intersection Operations

Greenlight Comment #1 (page 2): *Two Intersection are Projected to Operate at the City of Salem and ODOT Mobility Standards*

Greenlight Comment #2 (page 2): *According to the TIA, the Kuebler Boulevard/Battle Creek Road intersection currently operates at a v/c ratio of 0.85 and is approaching Salem's v/c ratio standard of 0.90 in the weekday PM peak hour. With the approval of the development, the intersection would operate at a v/c ratio of 0.90 (May 31, 2018 TIA Figure 11).*

Greenlight Comment #3 (page 2): *Any errors, omissions or increase in traffic may result in each intersection exceeding the required City of Salem and ODOT mobility standard. Based upon the*

following, it is likely that the outcomes of the TIA will change when the TIA is compliant with City Code and ODOT requirements. As the applicant has not provided a TIA that is compliant with City Code, the application should be denied.

Response: Greenlight comments are mistaken. The May 31, 2018 Traffic Study does not contain "omissions and errors". The May 31, 2018 Traffic Study KAI performed is adequate to support a finding of compliance with SRC 220.005(f)(3)(B) and (C), which are the applicable standards. All assumptions can be verified with reference to the traffic study itself, its supplements and appendices as well as the appendices attached to this supplement. Furthermore, the May 31, 2018 Traffic Study and supplemental documents have been reviewed and approved by traffic professionals at the City of Salem. Also, ODOT has informed both the City and applicant that the materials and analyses KAI provided in response to its comments is adequate to resolve ODOT's concerns. As documented in the May 31, 2018 Traffic Study, all study intersections, including the Kuebler Boulevard/Battle Creek Road and I-5 Southbound/Kuebler Boulevard intersections are forecast to meet City operating standards under build-out conditions. Finally, and importantly, the 2007 Decision establishes that the entire affected transportation system functions adequately if not better with the proposed shopping center and all of its required transportation system improvements. The KAI supplements performed to verify key assumptions for the 2007 Decision confirm this is the case.

Greenlight Comment #22 (page 14): *The TIA analyzes the intersection of I-5 SB/Kuebler Boulevard and Kuebler Boulevard/27th Avenue incorrectly. Exhibits 1 and 2 of the August 9, 2018 TIA illustrate channelized southbound dual right turn lanes turning into three westbound through lanes on Kuebler Boulevard that extend all the way to the Kuebler Boulevard/27th Avenue intersection. In reality, the dual southbound lanes are not channelized behind an island nor are there three westbound lanes on Kuebler Boulevard. It should be noted that ODOT has not received the Synchro and SimTraffic files from the applicant, as they noted in their August 27, 2018 letter, they cannot "confirm if the I-5 signalized ramp terminals have been appropriately analyzed." The Synchro output sheets that have been provided don't provide enough detail to verify issues like these. The applicant should be required to provide the Synchro and SimTraffic files especially for the intersections that are projected to operate exactly at the agency mobility standards with the approval of the proposed development, or the I-5 SB/Kuebler Boulevard and Kuebler Boulevard/Battle Creek Road intersections.*

Response: The requested traffic analysis files are provided in Appendix D, E, and F of the May 31, 2018 Traffic Study. The intersections of I-5 Southbound/Kuebler Boulevard and Kuebler Boulevard/27th Avenue were analyzed correctly. The dual southbound right turn lanes at the I-5 Southbound/Kuebler Boulevard intersection were modeled as channelized lanes in order to implement the right turn on red (RTOR) movement in SimTraffic. In reviewing initial SimTraffic model runs without any right turn channelization, vehicles were not simulating making a RTOR movement. Therefore, to more closely align with existing intersection operations, the right turn lanes were modified within the model to be channelized, to allow the RTOR movement, matching real world operations.

Furthermore, Exhibit 1 of the August 9, 2018 supplemental memorandum was used to illustrate estimated queue lengths along Kuebler Boulevard between 27th Avenue and I-5 Southbound Ramp. As shown in that Exhibit 1, no queues are shown in the third lane as it is supposed to represent the westbound exclusive right-turn lane at the Kuebler Boulevard/27th Avenue intersection and was modelled this way to more closely align with existing operations. The intersections of I-5 Southbound/Kuebler Boulevard and Kuebler Boulevard/27th Avenue were analyzed correctly and reviewed and approved by City staff as previously stated.

Lastly, the eastbound and westbound channelized right turn lanes at the I-5 Southbound/Kuebler Boulevard intersection do not yield to any conflicting vehicle movements, therefore modeling as a free movement is reasonable.

Greenlight Comment #23 (page 16): *The TIA assumes that 42% of southbound right turns at the I-5 SB/Kuebler Boulevard intersection are made on red signal indication (May 31, 2018 TIA, pg 4). This assumption is not based on any submitted evidence and varies from the default right turn on red assumptions according to industry standard. Per the TIA, the information is based upon observations collected during the weekday PM peak hour, yet this assumption carries over to the Saturday peak hour, again without any evidence to support the use of this factor.*

Response: These objections are mistaken. The right-turn-on-red (RTOR) adjustment used in the traffic analysis is based on the traffic count data and video observations taken in December 2017 at the I-5 Southbound Ramp/Kuebler Boulevard intersection. Details are provided in the May 31, 2018 Traffic Study on page 4 and the traffic count data is provided in Appendix A of the May 31, 2018 Traffic Study.

Trip Generation

Greenlight Comment #3 (page 2): *The trip generation for the Costco and gas station are not based on the ITE Trip Generation Manual. City of Salem Administrative Rules Section 109-006-6.33(h) requires that "[t]rip generation for the proposed development shall be estimated using the most current version of the Institute of Transportation Engineers (ITE) Trip Generation Manual. For land uses not listed in the ITE Trip Generation Manual, studies for similar development in similar regions may be used upon approval by the City Traffic Engineer." Additionally, Salem Revised Code ("SRC") Section 8.03.015 requires that "[t]rips shall be calculated using the adopted Institute of Transportation Engineer's Trip Generation Manual."*

Greenlight Comment #4 (page 3): *The Trip Generation Manual provides trip generation data for all of the uses presented in the TIA which include "Discount Club" (ITE Code #857), "Gasoline/Service Station" (ITE Code #944) and "Shopping Center" (ITE Code #820), but the TIA instead relies upon a trip generation estimate that is not supported by any evidence in the record. Each iteration of the TIA relies upon a contention that data exists to support the use of alternative trip generation figures and a provides a rough summary of those figures, but provides none of the background evidence to*

support its use. The TIA presents the conclusions supposedly derived from this data, but provides no supporting evidence of how the trip generation was derived. This ensures that such that the trip generation presented cannot be reviewed. By lacking the transparency to evaluate the purported data upon which the TIA is founded, the applicant has created an issue of substantial evidence whereby the applicant clearly does not comply with the requirements of the SRC and Administrative Rules, which don't allow for the submission of the data in the first place. abundance of information from other Costco locations but provides none of that data that supports the use of an alternative trip generation estimate or pass-by rate (May 31, 2018 TIA, pg 19; August 9, 2018 TIA, pg 2). In their June 28, 2018 letter, ODOT recognized that insufficient data regarding the trip generation of the site had been presented and commented that "[t]his study has not provided the data referenced to produce custom trip generation for the 'Costco with Gas Station (30 positions)' This information should be provided for review." In their June 6, 2018 letter, City staff requested trip generation data by stating "[s]ince the trip generation is estimated from Costco data, please provide some background how it was derived." Rather than provide any data, the applicant continued to provide no data, instead summarizing their results and claiming its reliability without evidence and claiming how it has been reviewed and approved by many unnamed jurisdictions. If it indeed has been reviewed and approved by so many jurisdictions, it would seem easy to repackage and provide some evidence to the City of Salem, ODOT and the public for review. It has been requested several times, but still remains missing from the written record of the application. Additionally, if it has indeed been collected for so many years and been independently reviewed by so many reviewers, why is it not presented in the ITE Trip Generation Manual?

The applicant continues to fail to provide substantial evidence in their August 9, 2018 memorandum. The August 9, 2018 TIA states that the daily trip generation and pass-by trip generation rates are based upon Costcos with gas stations across the United States. Similarly, that TIA states that the weekday PM peak hour and Saturday peak hour trip generation rates are based upon data taken from the existing Salem Costco. In that same TIA, it is stated that "[i]t is important to note that trip generation for the Costco sites is not linearly tied to square-footage size of the Costco building." If not tied to the size of buildings, what is it based upon? If an alternative trip generation is entertained (although not permitted by City Code), Chapter 9 of the 3rd Edition of the ITE Trip Generation Handbook provides guidelines on how custom trip generation studies should be conducted. The TIA provides no reference to the Trip Generation Handbook in their limited description of their methodology for their alternative trip generation, so it is unclear how these trip generation studies were conducted and if it follows the national standard ITE Trip Generation Handbook. However, in one very clear way, the trip generation provided in the TIA is clearly not compliant with the industry standard Trip Generation Handbook. The 3rd edition of the Trip Generation Handbook states that in developing a local trip generation rate "[t]he analyst should collect trip generation data at a minimum of three local sites. Collecting data at five or more sites is preferable. Where there are only one or two potential data collection sites in a comparable setting, the analyst should use that data, coupled with other local or national data, to derive the estimate. The analyst is cautioned that this recommendation should not be used as an excuse for collecting and using data from only one or two

sites when more sites are reasonably available." As noted previously, the August 9, 2018 TIA states that the weekday PM and Saturday trip generation estimate is "based upon data taken from the existing Salem Costco." Based on this statement, it appears that the trip generation of this site is based upon solely the existing Salem Costco. Par for the course, there is no way to confirm the trip generation of the existing Salem Costco as no traffic counts are presented for that site nor are any trip generation rates or equations reported in the TIA. How the trip generation of the site was derived remains a mystery. Finally, in the applicant's November 29, 2018 memorandum, additional summary information indicating that the 168,550 square foot Costco daily trips are based upon a trip rate of 75.86 vehicles per 1,000 square feet per day, contradicting their previous statement that the Costco trip generation is not linearly tied to the size of the building. This equates to 12,138 daily trips, which is also illustrated in the earlier TIA memorandums. The trip rate doesn't appear to take into account the influence of the 30 fueling position gas station as the trip rate is based upon the square footage of the Costco building only and not the fueling positions which are typically measured based on a per fueling position metric. However, in previous TIAs, the 12,138 daily trips were purported to include both the Costco and 30 fueling position gas station. It is important to note that in none of the TIAs is any weekday PM or Saturday trip generation rate reported nor any equation or any description about how the trip generation was calculated or could be calculated. It remains a mystery that only the applicant would be able to answer. As no data is provided to prove the adequacy of this trip generation summary, it is not possible for any reviewer to confirm the use of the trip generation estimate presented nor could a reviewer derive trip generation figures for a slightly smaller or slightly larger development as the trip generation provides no numerical evidence or correlations between the size of the structures and/or the number of fueling positions. Salem Administrative Rules 109-006-6.33(h) requires that "[p]ass-by trips must be quantified and may be approved based upon sufficient supporting data." Presumably, the ITE Trip Generation Handbook, if used, would have provided sufficient supporting data. However, the TIA doesn't rely upon the national standard Trip Generation Handbook, but instead relies upon "data" that is not provided. The TIA utilizes a daily pass-by trip rate of 34%, an AM/PM pass-by trip rate of 35% and a Saturday pass-by trip rate of 30%. However, the TIA provides no data to support the use of these pass-by trip rates. Thus far, "the sufficient supporting data" required by City Code is non-existent and seems to rely solely upon the word of the applicant. Again, the applicant provides no evidence to support their trip generation conclusions. The TIA lacks transparency in its key trip generation assumptions which form the basis of the conclusions of the remainder of the TIA. For that reason alone, the TIA should have been rejected. There is not substantial evidence to support the use the alternative trip generation or pass-by figures reported in the TIA. Even more, the use of alternative trip generation and pass-by figures are not supported by the clear and objective code requirements. As the ITE Trip Generation Manual provides trip rates for the proposed uses and the Trip Generation Handbook allows for the combination of the Discount Club, Gasoline/Service Station and Shopping Center uses in their methodology, City Code does not allow for the use of alternative trip generation methodology. For this reason alone, the TIA should be rejected and the application denied.

Response: The trip generation determination in the site review traffic study provides adequate evidence to establish compliance with SRC 220.005(f)(3)(B) and (C). The City Roadway Standards regarding trip generation do not apply because those relate exclusively to the contents of a TIA required by SRC 803 and, as explained above, per SRC 803.015(d), no purpose is served in preparing such a TIA where the standard examines conditions limited to the abutting street system and internal circulation.

Regardless, while not required to do so, the traffic counts collected in fact do meet the TIA Roadway Standards Section 6.33 (h) because site generated traffic analyses are based on data and guidance from the most current version of the ITE Trip Generation Manual. The City of Salem Traffic Engineer has reviewed and accepted the trip generation estimates associated with the proposed development, which includes the following:

- **Retail pads** – The trip generation estimate is based on the land use code 820 (shopping center) from the Institute of Transportation Engineers (ITE) Trip Generation Manual. This information is described on page 19 of the May 31, 2018 Traffic Study.

- **Costco and fuel station** – The trip generation estimate is based on trip generation data collected from existing Costco stores and fuel stations. This description is provided on pages 2 and 3 of the August 9, 2018 Kittelson response to City and ODOT comments.

Per ITE's Trip Generation Manual 8th Edition on page 2 of the User's Guide and 9th Edition on pages 1 and 2 of the User's Guide and Handbook, it states that "when practical, the user is encouraged to supplement data in this document with local data that has been collected at similar sites." The May 31, 2018 Traffic Study and subsequent KAI response to City and ODOT comments was used because it demonstrates that the trip generation estimate for the proposed development is based on best practices as required by ITE, focusing on specific data for Costco stores. This approach was accepted by the City of Salem. Furthermore, ODOT has informed both the City and applicant that the materials and analyses KAI provided in response to its comments is adequate to resolve ODOT's concerns.

KAI has collected, analyzed, and refined transportation data for Costco related to trip generation, trip type (primary, pass-by, diverted, internal trips), parking demand, gasoline service rates, and vehicle queuing. The database contains large data sample sizes and includes very recent information as it is continually updated and refined as new data is collected. The transportation information within the database has been approved in numerous jurisdictions in the U.S., Canada, and Mexico and has been validated by jurisdiction staff in several cases through independent peer study during the development review process. The Costco transportation database is the best source of information to use in developing trip generation estimates for Costco developments since it provides use-specific data that most accurately represents the anticipated traffic characteristics of the unique development type.

The May 31, 2018 Traffic Study and previous response comments prepared by KAI cites trip generation studies that were conducted at Costco Wholesale sites located across the western region of the United States. The trip studies were completed using industry standard engineering practices consistent with guidance within the Institute of Transportation Engineers (ITE) standard reference, Trip Generation Handbook, 9th Edition Volume 1 and Trip Generation Handbook, 3rd Edition. Additionally, KAI provides a comparison of the Costco trip generation data with national trip generation data for Discount Club land use from the ITE Trip Generation Manual.

Trip Generation Studies based upon Costco specific data

17 traffic surveys were conducted at Costco stores with fuel centers in Oregon (Salem, Albany, Medford, Eugene), California, Washington, Montana, Florida, Utah, Virginia, New York, and Colorado. The Costco's buildings surveyed range in size between 122,000 square feet and 162,000 square feet, with an average size of 140,199 square feet and had Costco fuel centers. As a result, the Costco trip generation rates account for Costco fuel center trips within the overall rate and the proposed Salem Costco falls within the data range of surveyed sites. Table 1 summarizes the trip generation associated with the proposed Salem Costco with fuel station used in the May 31, 2018 Traffic Study.

Table 1. Proposed Salem Costco with Fuel Station Trip Generation Estimate

Land Use	ITE Land Use Code	Size (Square Feet)	Daily	Weekday PM Peak Hour			Saturday Midday Peak Hour		
				Total	In	Out	Total	In	Out
Costco Warehouse with Gas Station (30 positions)	NA	160,000	12,138	1,198	623	575	1,459	715	744
Internal Trips (10%)			*(1,214)*	*(120)*	*(62)*	(58)	*(146)*	*(72)*	*(74)*
Pass—by Trips (34% Daily, 35% AM/PM, 30% Sat)			*(3,714)*	*(377)*	*(196)*	*(181)*	*(394)*	*(193)*	*(201)*
Total Net New Trips			**7,210**	**701**	**365**	**336**	**919**	**450**	**469**

Data supporting the trip generation presented in Table 1 is summarized in further detail below in a graphical format similar to the data presented in both the 9th and 10th Editions of the ITE Trip Generation Manual. **It is important to note that the ITE Trip Generation Manual does not identify study site locations, business names, nor the year of data collection. Therefore, using Costco's data is more conservative and representative of actual trip generation associated with a Costco store with fueling station.**

Specific Costco data from the existing Salem Costco was used to estimate the weekday PM peak hour trip generation and Saturday midday peak hour trip generation, which is recommended when practical by the ITE Trip Generation Manual.

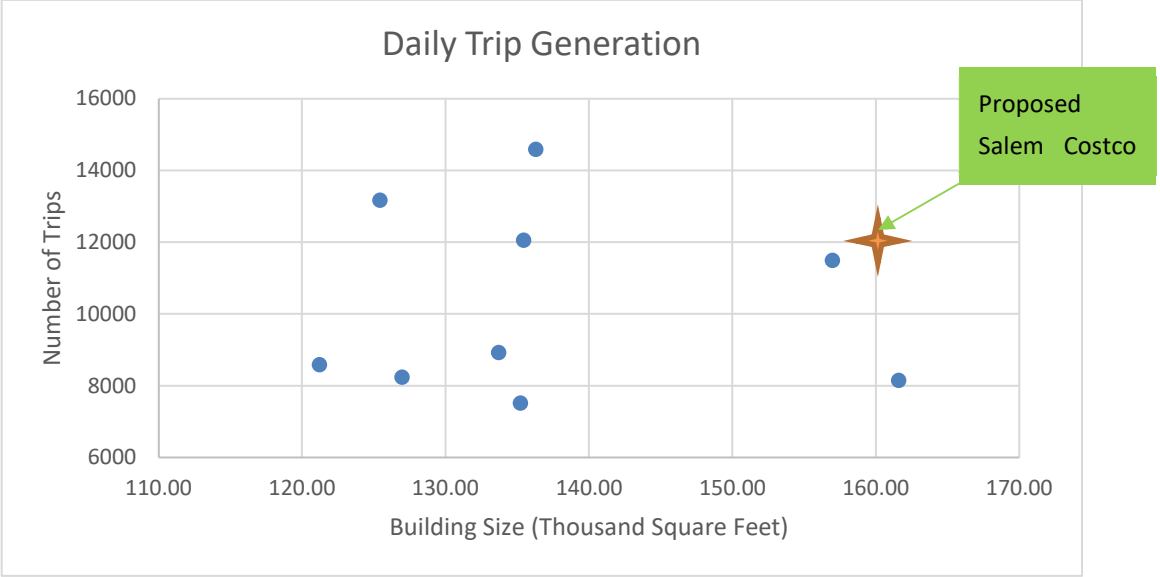
- The **weekday PM peak hour trip generation rate** (7.49 trips per 1,000 square-feet of Costco and fuel positions) is based on data collected at the existing Salem Costco and fuel station. Attachment A includes the raw traffic count data.

- The **Saturday midday peak hour trip generation rate** (9.12 trips per 1,000 square-feet of Costco and fuel positions) is based on data collected at the existing Salem Costco and fuel station. Attachment A includes the raw traffic count data.

Appendix "A" provides the traffic count data from the existing Salem Costco located at Hawthorne Avenue and the broader Costco data set upon which KAI's assumptions are based.

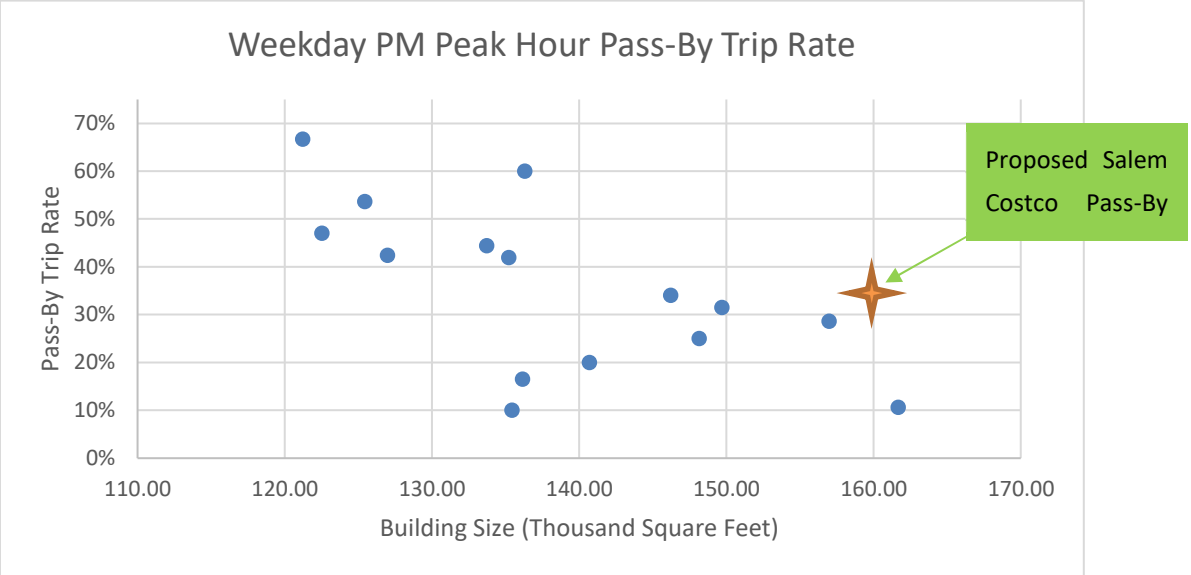
The **daily trip generation rate** (75.86 trips per 1,000 square-feet of Costco and fuel positions) is based on an average trip generation rate at nine Costco stores with fuel stations as follows: Santa Clara, CA; Sandy, UT; Staten Island, NY; Vallejo, CA; West Henrico, VA; Aurora, CO; Altamonte Springs, FL; Simi Valley, CA; Spokane, WA. Figure 1 illustrates the daily trip generation from these sites.

Figure 1. Costco with Fuel Positions - Daily Trip Generation



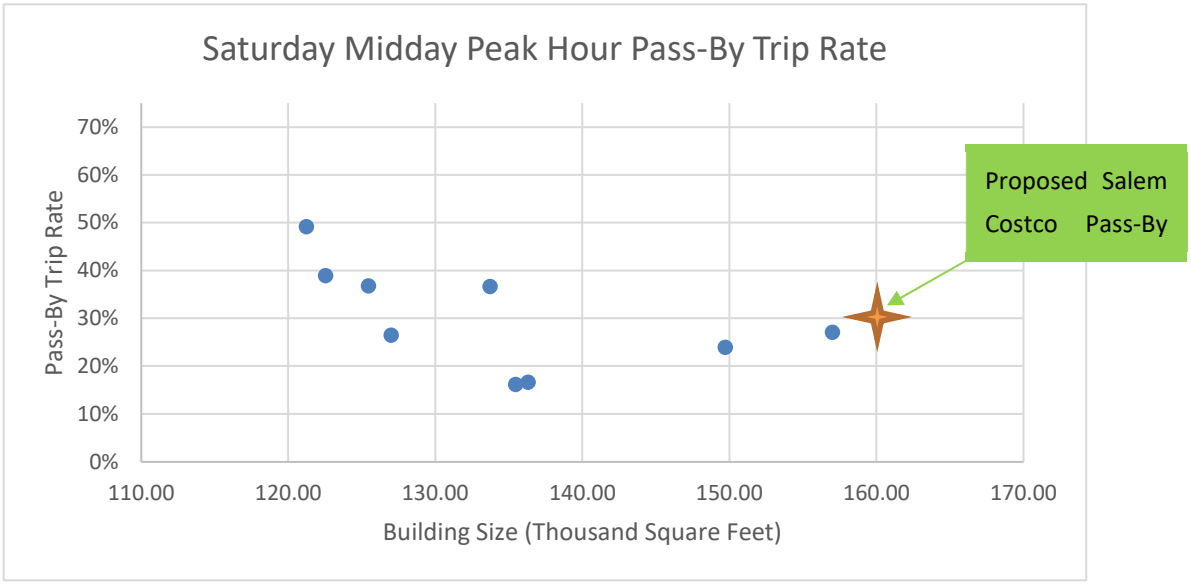
The **weekday PM peak hour pass-by trip rate** (35%) is based on an average rate from fifteen Costco store with fuel positions as follows: Helena, MT; Missoula, MT; Albany, OR; Morena, CA; Laguna Niguel, CA; Santa Clara, CA; Medford, OR; Eugene, OR; Staten Island, NY; Vallejo, CA; West Henrico, VA; Aurora, CO; Altamonte Springs, FL; Simi Valley, CA; and Spokane, WA. Figure 2 illustrates the pass-by trip rates from these sites.

Figure 2. Costco with Fuel Positions – Weekday PM Peak Hour Pass-By Trip Rate



The **Saturday midday peak hour pass-by trip rate** (30%) is based on an average rate from nine Costco stores with fuel positions as follows: Missoula, MT; Laguna Niguel, CA; Santa Clara, CA; Staten Island, NY; Vallejo, CA; West Henrico, VA; Aurora, CO; Simi Valley, CA; and Spokane, WA. Figure 3 illustrates the pass-by trip rates from these sites.

Figure 3. Costco with Fuel Positions – Saturday Midday Peak Hour Pass-By Trip Rate



<u>Costco Trip Generation Data Comparison to ITE Discount Supermarket with Fueling Positions</u>

Trip data for member-based retail establishments is available through the Trip Generation Manual published by ITE. Both the 9th Edition (published in 2012) and the 10th Edition (published in 2017) include Land Use 857, Discount Club (daily, weekday PM peak hour, and Saturday peak hour data by building size is identical in both the 9th and 10th editions). Discount Club is defined in the Trip Generation Manual as follows "A discount club is a discount store or warehouse where shoppers pay a membership fee in order to take advantage of discounted prices on a wide variety of items such as food, clothing, tires and appliances; many items are sold in large quantities or bulk. Some sites may include on-site fueling pumps." The Trip Generation Manual Discount Club definition conveys a land use comparable to a Costco Wholesale. Some of those ITE examples used for traffic assumptions for this category include stores with fuel positions. So, it is an accurate comparator so far as it goes.

Table 2 compares the trip rates for the ITE Discount Club and the Costco Trip Generation Rates while Table 3 compares the pass-by trip rate data for the two uses.

Table 2. Trip Rate Comparison

Land Use	Weekday Daily Trip Rate (trips / 1,000 square-feet)	Weekday PM Peak Hour Trip Rate (trips / 1,000 square-feet)	Saturday Midday Peak Hour Trip Rate (trips / 1,000 square-feet)
Costco with Fuel positions	75.86	7.49	9.12
ITE Discount Club with fueling positions	41.8	4.18	6.37
Difference	**34.06**	**3.31**	**2.75**

*Costco trip rate minus Discount Club trip rate

Table 3. Pass-By Trip Rate Comparison

Land Use	Weekday PM Peak Hour	Saturday Midday Peak Hour
Costco with Fuel Positions	35%	30%
ITE Discount Club with fueling positions	37%[1]	30%
Difference*	**-2%**	**0%**

*Costco trip rate minus Discount Club trip rate

[1] A pass-by trip is a trip that are already exists on the adjacent roadways to the site. Pass-by trips are accounted for as new trips at the site driveways, but not at external intersections since the trips already travel through the external intersection today. Therefore, a higher pass-by trip rate would contribute a lower number of new trips to the external intersections resulting in a less-conservative analysis of the site impacts. As shown in Tables 2

and 3, use of the Costco data results in a higher trip rate per square foot and a lower pass-by percentage compared to use of Discount Club data from the ITE Trip Generation Manual. Based on this summary, the Costco data provides a more conservative approach to estimating trip generation for the proposed project.

KAI identified the Costco-specific data in lieu of ITE Trip Generation Manual to provide both Costco and the applicable review agencies (City of Salem and Oregon Department of Transportation) with data that is representative of potential site development traffic impacts and higher than the ITE Trip Generation Manual.

Trip Generation Summary

The proposed Salem Costco and fueling positions is comparable to the Costco facilities previously surveyed, including the Costco with fueling positions in Salem, Oregon. The surveyed Costco buildings represent a broad spectrum of sites located in a variety of locations including sites adjacent to arterials similar to the proposed site location on Kuebler Boulevard. Specific Costco data from the existing Salem Costco was also used to estimate the weekday PM peak hour and Saturday midday peak hour trip generation, which is recommended when practical by the ITE Trip Generation Manual 8th Edition on page 2 of the User's Guide and 9th Edition on pages 1 and 2 of the User's Guide and Handbook, which states that "when practical, the user is encouraged to supplement data in this document with local data that been collected at similar sites." It is our professional judgment that the trip generation rates from the Costco survey are representative of the expected trip generation for the proposed new Salem Costco, consistent with ITE recommended practice, and provide a conservative analysis of estimated trip generation in the TIS based on the following:

- Specific use trip generation data was collected at Costco stores with fueling positions throughout the U.S.
- Local trip generation data collected at the existing Salem Costco with fueling positions for the weekday PM and Saturday midday peak hours.
- Large amount of trip generation data collected at Costco stores with fueling positions that exceeds the number of locations represented by the ITE Trip Generation Manual Discount Club land use trip rates for some time periods.
- Higher trip rate per square foot and a lower pass-by percentage for Costco with fueling positions compared to the use of Discount Club data from the ITE Trip Generation Manual.

To demonstrate the conservative approach used in the traffic analysis, KAI prepared Table 4, which provides a trip generation comparison of the proposed Costco with fueling positions (30 positions) to the Discount Club and Discount Club with fueling positions(30 positions) from the ITE Trip Generation Manual, 10th Edition.

Table 4. Trip Generation Comparison (Costco vs. Discount Club)

Land Use	ITE Land Use Code	Daily	Weekday PM Peak Hour	Saturday Midday Peak Hour
Costco vs. Discount Club				
Costco with 30 fueling positions	Not Applicable	12,138	1,198	1,459
Discount Club	857	6,688	669	1,019
Difference (Costco minus Discount Club)		**5,450**	**529**	**440**
Costco vs. Discount Club with Fuel Station				
Costco with 30 fueling positions	Not Applicable	12,138	1,198	1,459
Discount Club with Fueling positions (30 positions)	857 & 944	11,848	1,090	1,402
Difference (Costco minus Discount Club with Fuel Station)		**290**	**108**	**57**

As shown in Table 4, the trip generation estimate for the proposed Costco with fueling positions is greater than the ITE Trip Generation data for Discount Club and Discount Club with fueling positions. Therefore, the May 31, 2018 Traffic Study presents a conservative analysis in comparison to analysis performed using the ITE Trip Generation data. However, if ITE Trip Generation data is used, then all studied intersections would function better than the KAI analyses assumed in the May 31, 2018 Traffic Study.

No matter what data set is used, the evidence demonstrates that the proposed site plan meets SRC 220.005(f)(3)(B) and (C).

Study Area

Greenlight Comment #5 (page 5): *Salem Administrative Rules 109-006-6.33(c) requires that the "TIA study area shall extend to the following: (1). All proposed access points (2). Any intersection where the proposed development can be expected to contribute 50 or more trips during the analysis peak hour on a collector, arterial, or parkway, or 20 or more trips on a local street or alley (3). Any intersection where the additional traffic volume created by the proposed development is greater than ten percent of the current traffic volumes on any leg..." The TIA illustrates that 40% of site generated traffic travels to/from intersections to the west (August 9, 2018 TIA, Figure 8, Appendix A enclosed herein). The Kuebler Boulevard/Stroh Lane intersection will see an increase of 418 trips in weekday PM peak hour and 529 trips in the Saturday peak hour yet was not included in the study area. It is likely that the Commercial Street/Kuebler Boulevard intersection will experience an increase of over 400 trips in the weekday PM peak hour and over 500 trips in the Saturday peak hour. This omission is not even close to meeting City Code, with the proposed development's traffic exceeding the threshold by up to ten times greater than the allowed amount. The Commercial Street corridor and Kuebler Boulevard vehicles per hour due to the proposed development. However, inexplicably, the TIA doesn't address the intersections that are required for analysis. The City of Salem threshold for study area is an increase in trips of 50 in a peak hour along each of these roadways. There are likely many intersections along Kuebler Boulevard and Commercial Street that were omitted from the TIA*

and are required to be analyzed per the clear and objective city standard. Because the TIA includes an inappropriate study area, the application fails to comply with SRC 220.005(f)(3) as it does not comply the UDC. The November 29, 2018 TIA addresses this criticism by contending that since the almost 13-year-old 2006 TIA didn't address the appropriate study area, then the 2018 study area shouldn't either. Standards change. It's possible that those intersections should have been included in that original TIA as well. However, that does not matter as the site plan review requirements are clear. The November 20, 2018 TIA states "[f]or all intersections evaluated in the 2006 TIA, none are expected to receive a contribution of 50 or more trips during the analysis peak hour over those anticipated and studied in the 2006 TIA and mitigated in the 2007 Council Decision. Moreover, there is no intersection studied in the 2006 TIA where the proposed shopping center here will create more than 10% of the current traffic volumes on any leg beyond that which was studied in the 2006 TIA and mitigated in the 2007 Council Decision. The analysis area selected for this site review is appropriate and is reasonably calculated..." Unfortunately, the applicant provides no City Code reference that makes this comment relevant. City Code is clear in it's study area requirement for the site plan review. Their comments on the study area are irrelevant to the clear and objective City Code standard. It is clear that the application does not meet this standard. Additionally, Figure 8 of the May 31, 2018 TIA illustrates more than 50 weekday PM and Saturday peak hour trips distributed along Kuebler Boulevard east of I-5. At the very least, the city requires the Kuebler Boulevard/36th Avenue to be analyzed. The TIA illustrates more than 50 weekday PM and Saturday peak hour trips being distributed to/from the west along Boone Road. At the very least, city requirements require that the Reed/Woodscape intersection to be analyzed. Similarly, the TIA illustrates more than 50 weekday PM and Saturday peak hour trips being distributed to the south along Battle Creek Road. There are likely several intersections along Battle Creek Road that meet the threshold for inclusion in the TIA study area. The TIA distributes more than 50 weekday PM and Saturday peak hour trips through the Boone Road/Riley Court and Boone Road/Cultus Avenue intersections, but does not analyze those intersections. In addition to the previously described requirements, City Code calls for the analysis of "[a]ny intersection where the additional traffic volume created by the proposed development is greater than ten percent of the current traffic volumes on any leg." Aside from the study intersections identified in the TIA, the TIA provides no analysis to determine the need to analyze additional study intersections based on the criteria just described. This would require the collection of existing traffic counts at potential study intersections and comparing the trip distribution to determine the impact of the development upon these intersection legs. This was not done or discussed in the TIA. Figure 8 of the TIA appears to assume that not a single vehicle will arrive to the development via Cultus Avenue at Boone Road. For a good portion of the neighborhood to the south of Boone Road, it would be more expedient to arrive at the development via Cultus Avenue than another route. The TIA should address the impacts to this street and the other local streets in the area. Cultus Avenue should be evaluated for the provision described above. However, the TIA has not provided any traffic counts along this roadway nor does it evaluate this City Code provision in any way. The TIA distributes 5% of the site traffic to Battle Creek Road north of the site, 5% to Boone Road west of the site, and 5% to Battle Creek Road south of the site, and to I-5 south. Inexplicably, none of these 5% trip distributions result in the same number of trips. It appears that a mathematical error

has been made. In order to be compliant with City Code, the TIA should be updated and required to analyze all intersections along parkways, arterials and collectors that will experience an increase in 50 trips during a peak hour. Similarly, the TIA should be required to be updated to analyze all intersections along all local streets and alleys that will experience an increase in 20 trips during a peak hour. Lastly, the TIA should be required to be updated to identify and analyze all intersections where the additional traffic volume created by the proposed development is greater than ten percent of the current traffic volumes on any leg. Until that time, City Code requirements are not met and the application should be denied.

Response: The October 23, 2018, Staff Decision correctly concludes that the May 31, 2018 Traffic Study area is adequate. Recall, that the analysis area selected is required to demonstrate compliance with SRC 220.005(f)(3)(B) and (C). As such, the traffic study here, which was designed to confirm the assumptions and results of the traffic study performed for the 2007 Decision were still valid and establish compliance with SRC 220.005(f)(3)(B) and (C) began with a study area coordinated with City Public Works staff as part of the traffic study scoping process. The 2006 TIA supporting the 2007 Council Decision established the appropriate analysis area for a plan amendment and zone change and completely mitigated for all project transportation impacts of a much larger shopping center in that analysis area. The KAI analysis for this Site Review is not designed to establish a plan amendment and zone change's compliance with the TPR and other standards as were at issue in the Council's 2007 Decision, which is the final predicate decision for this Site Review. The analysis area selected for this **Class 3 site review** was approved by traffic professionals at the City of Salem as recorded in the Decision, is appropriate and is reasonably calculated to both confirm the continuing validity of the 2006 study as well as to determine whether there are any additional transportation impacts in the affected area requiring additional mitigation due to the particular anchor tenant proposed.

Lastly, no mathematical error has been made for the 5% trip distributions to/from Battle Creek, Boone Road and I-5 south. The minor difference in trips is associated with pass-by trips accounted for on Battle Creek and Kuebler, which is also illustrated by the "negative" trips shown on Figure 8 of the May 3, 2018 Traffic Study. The vehicle trips illustrated in Figure 8 account for both net new and pass-by trips (pass-by trips are defined on page 12 of this memorandum).

Growth Rate, In-Process Developments, Trip Distribution, Horizon Year

Greenlight Comment #6 (page 7): *Salem Administrative Rules 109-006-6.33(g) requires that background rates shall be based upon the Mid-Willamette Valley Council of Governments Transportation Model." The TIA relies on 1% growth rate citing this "is a similar approach to other traffic studies completed in the area" (May 31, 2018 TIA, pg 12). The TIA cites no references for these other traffic studies nor any reference to utilizing the MWVCOG background traffic growth rate as required. We obtained limited MWVCOG transportation modeling data and have provided it in Appendix B. Based upon this information and a preliminary analysis, growth on Kuebler Boulevard between I-5 SB/Kuebler Boulevard and Kuebler Boulevard/27th Avenue is anticipated to be*

approximately 1.8% per year from 2010 to 2035 with weekday PM peak hour link volumes of 2860 and 4495 vehicles per hour ("vph"), respectively. Again, the TIA fails to follow the UDC and should be updated. Until then, the application should be denied.

Greenlight Comment #7 (page 8): *The Salem Administrative Rules 109-006-6.33(g) requires that "...trip distribution shall be based upon the Mid-Willamette Valley Council of Governments Transportation Model. If model data is not available...trip distribution shall be determined by the City Traffic Engineer." The TIA states that the trip distribution "was based on historical Salem Costco sales data and examination of site access, parking layout and site circulation" (May 31, 2018 TIA, pg 20). There is a travel demand forecasting model in this area and trip distribution should have been based upon that model. An excerpt of the travel demand forecasting model is provided in Appendix B. Additional information should be sought from MWVCOG by the applicant. There is also no information provided about how the trip distribution figures were determined nor was the "historical Salem Costco sales data" presented. Therefore, the TIA's trip distribution assumptions have no way to be reviewed or supported by evidence.*

Greenlight Comment #8 (page 8): *Salem Administrative Rules Table 6-33 requires horizon year analysis periods of year of opening for development "allowed under existing zoning" and "year of opening each phase" for "multi-phased development." The TIA indicates that the year of opening for a portion of the proposed development is 2019. For such a large project, an opening year of 2019 is not realistic and the TIA should be updated to include a horizon year of at least 2020 unless the applicant can present a reasonable schedule illustrating how this development can be fully opened in 2019. The TIA was completed in May of 2018 and seven months later, no permits have been secured with several more months before construction permits could be issued. It is unlikely that this substantial delay was considered in the TIA.*

Additionally, this project is proposed to be constructed as a multi-phased development although no schedule has been provided in the TIA. The May 31, 2018 TIA states that "[t]he proposed Costco will include a warehouse and fuel station with four islands and the potential to add a fifth island in the future (30 fueling positions)." The fifth island will apparently be constructed at some later time. The TIA provides no trip generation estimate for that fifth island separate from the rest of the development, but according to Salem Administrative Rules 109-006-6.33(e), the TIA needs to identify a horizon year and analyze that year. Additionally, the site plan submitted by the applicant illustrates 21,000 square feet of retail use as a "future phase," seemingly indicating that it will not be constructed and opened as part of the 2019 development. In their November 29, 2018, KAI states that "[i]t is not a multi-phased development...and will include all major buildings such as Costco, the fuel station, and shops building." It is unclear how "future phase" doesn't equate to "multi-phased" development or what is meant by "shops building" (the site plan shows four additional structures while the staff report refers to five). Perhaps KAI is not clear on the development plan or the plan has changed. It is also interesting to note that KAI states that "major buildings such as Costco, the fuel station, and shops building" only, again leaving the door open that future development will occur at

a later date and what is defined as "major buildings." Again, there are no specifics about the time line of the future phase of construction. As a future phase, the TIA should be updated to include the build-out year of both the fifth fuel island as well as the 21,000 square feet of retail development unless there is clarity on the proposed plan along with a reasonable schedule. According to Table 3.3 of the ODOT Design Review Guidelines, a development with a trip generation of excess of 5,000 trips like the one proposed should be required to be required to provide an analysis at least 15 years into the future. This analysis has not been provided. It should be noted that the approval criteria between a zone change/comprehensive plan amendment and site plan review are quite different. A zone change/comprehensive plan amendment would not necessarily require mitigation in the face of intersection failure while a site plan review requires the adequacy of intersection operations.

Response: The May 31, 2018 Traffic Study is adequate to support a determination of compliance with SRC 220.005(f)(3)(B) and (C). No applicable standard requires more. This objection is based upon the City Roadway standards at 6.33 for TIAs and which do not apply as independent approval standards for this site review proposal. As coordinated with City Public Works staff, the 1% growth rate was deemed reasonable because it is for a 1-year build-out scenario, not a long-term traffic analysis. Further, we are advised that the coordinated growth rate by Marion County for the Salem-Keizer UGB is 1.12%, which confirms the appropriateness of using the 1% growth rate. The May 31, 2018 Traffic Study evaluates only whether in year of the shopping center's opening (then assumed to be 2019), the "negative impacts" from the shopping center have been adequately mitigated. Nothing requires that traffic analyses be updated for successive appeals which delay the date of opening of the shopping center. The purpose of the traffic study is to determine the proposal's compliance with UDC 220.005(3) on the date it was submitted. The proposal met all traffic standards on the date the traffic report and application were submitted to the city. Regardless, whether the date of opening was 2019 or has moved to 2021 due to appeals, the conclusion that UDC 220.005(3) is met does not change. In this regard, the site plan complied and still complies with the relevant applicable standards in UDC 220.005(3)(B) which requires:

> "The transportation system provides for the safe, orderly, and efficient circulation of traffic into and out of the proposed development, and negative impacts to the transportation system are mitigated adequately"

The increase in traffic associated with the delays in the date of opening to 2021 attributable from appeals, does not change any of the assumptions and conclusions in our May 2018 Traffic Study concerning compliance with that standard. The transportation system continues to provide safe, orderly and efficient circulation into and out of the subject property if the date of opening is projected to be 2021.

Regarding the trip distribution, the cited provision regards TIA contents where a TIA is required under SRC 803. This provision does not apply. Regardless, it is met. 6.33(g) requires that trip distribution be based upon the Mid-Willamette Valley Council of Government Transportation Model or if model data is not available, then trip distribution "shall be determined by the City Traffic Engineer." Model

data for Costco is not available in the Mid-Willamette Valley COG model. However, as a matter of best practices as well as the Roadway Standards, the City Traffic Engineer determined trip distribution be based upon Costco specific data. In turn, as required by the City Traffic Engineer, the site review traffic study used existing proprietary Salem Costco sales data from FY 2014 through FY 2016 for every zip code in Oregon, which is analyzed to determine the percent of sales value to each zip code. Estimated directional routing to each zip code was then determined, to approximate percentage of travel each direction to/from the proposed new Costco site. The trip distribution determined from the Costco sales data and as used in the May 31, 2018 Traffic Study is similar to previous TIAs in the area.

The horizon year analysis period meets the requirements set under Section 6.33 of the City Public Works Design Standards if they applied (which they do not) as the proposed shopping center development is allowed under existing zoning. It is not a multi-phased development and was coordinated with City staff as part of the traffic study scoping process. The opening of the proposed shopping center will include all major buildings such as Costco, the fueling positions, and a shop building. While some retail pads may or may not be leased prior to opening, it does not delay the date of opening for the shopping center. As noted above, there is no requirement to update the traffic study to chase successive dates of opening which can be delayed based upon appeals which the applicant cannot control. Regardless, even if the horizon year date of opening is adjusted to 2021, we conclude that extrapolating out the data, that the outcome remains essentially the same and the proposal meets the site review criteria.

Greenlight Comment #24 (page 16): *The May 2018 TIA considers the impact of several in-process developments including Boone Wood Estates, a 31-unit residential subdivision located south of the Boone Road/27th Avenue intersection. Additionally, the TIA consider a 122 unit assisted senior care facility southeast of Boone Road/27th Avenue. Lastly, the TIA considers the impact of 6,900 square feet of space at the 38,700 square foot Salem Clinic and medical office building located on the same site as the proposed development. The applicant will likely argue that the 1% growth rate and the in-process traffic included in the May 2018 is sufficient to overcome the shortcoming of not basing the TIA on the MWVCOG travel demand model as required by City Code. However, the applicant has not provided the trip distribution sheets associated with those in-process developments. As described earlier, a simplistic approach to reviewing the growth along Kuebler Boulevard yielded a growth of between approximately 1.8% and 3.75%. At the intersection of Kuebler Boulevard/Battle Creek Road, an increase in 1% of traffic equates to approximately 400 additional vehicles in the weekday PM peak hour. The in-process traffic considered above will not generate 400 weekday PM peak hour trips, so it's unlikely that the 1% growth rate and in-process traffic considered in the TIA is sufficient to address the requirements of City Code. Additionally, the TIA does not but should have considered the impacts of the Mill Creek Corporate Center (buildings 1B and 1C), which includes the Amazon distribution center. This development was approved and not operational prior to the December 2017 traffic counts. The Mill Creek TIA clearly illustrates site traffic utilizing several of the study intersections of*

the Costco TIA. The inclusion of this traffic may affect the operations of these intersections, yet has not been accounted for.

Response: TIA's were not required by the City Public Works staff to be provided for either the Boone Wood Estates or the referenced assisted senior care facility. Accordingly, it is not possible to provide trip generation sheets from those developments. Traffic associated with these two developments was estimated based upon their ITE categories and approved project development site plans. Page 12 of the May 31, 2018 Traffic Study provides details of these in-process developments and the approach KAI used to account for these in-process developments in the traffic study, an approach coordinated and approved by City Public Works staff. Figures 5 and 6 of the May 31, 2018 Traffic Study include the distribution of trips for all in-process developments, including those. The trip distribution of the 6,900 square feet space at the 38,700 square foot Salem Clinic and medical office building located on the same site as the proposed development was taken from the 2007 Decision's TIA. This information fully supports the KAI traffic analyses.

First, City Public Works staff correctly concluded that the May 31, 2018 Traffic Study scope is appropriate for site review and demonstrates compliance with SRC 220.005(f)(3)(B) and (C). The scope staff required for the Traffic Study for site review was more ambitious than necessary to establish compliance with city site review standards, because staff also wished confirmation that the assumptions and results of the traffic analysis for the 2007 Decision remained valid. As a technical matter, compliance with SRC 220.005(f)(3)(B) and (C) requires only an evaluation of the intersections of Kuebler/Battle Creek; Kuebler/27th, and Battle Creek/Boone – the intersections through which traffic will gain access to and from the shopping center subject to site review. Moreover, even if the Roadway Standards in 6.33 applied, by their express terms, the MWVCOG travel demand model does not apply because data for Costco is not available in the MWVCOG model. Therefore, the City Traffic Engineer determined trip distribution be based upon Costco specific data. In turn, as required by the City Traffic Engineer, the site review traffic study used existing proprietary Salem Costco sales data from FY 2014 through FY 2016 for every zip code in Oregon, which is analyzed to determine the percent of sales value to each zip code. Estimated directional routing to each zip code was then determined, to approximate percentage of travel each direction to/from the proposed new Costco site.

Second, there is no applicable city code provisions which includes a "cumulative impacts" analysis requirement and it is unclear what such an analysis would entail to inform the analysis under SRC 220.005(f)(3)(B) and (C) which applies to this Decision. The May 31, 2018 Traffic Study for the proposed site review demonstrate compliance with the SRC 220.005(f) requirements that "The transportation system provides for the safe, orderly, and efficient circulation of traffic into and out of the proposed development, and negative impacts to the transportation system are mitigated adequately" and "Parking areas and driveways are designed to facilitate safe and efficient movement of vehicles, bicycles, and pedestrians."

Third, the referenced Amazon facility would not be included in this or any project transportation analysis, because its transportation impacts have been fully anticipated and mitigated through the Mill Creek Industrial Area Master Plan (Plan), which was adopted in 2005, nearly two years before the City Council approved the subject property for a shopping center in December 2007. Any impacts associated with the Plan were considered and mitigated as the City deemed appropriate in its 2007 decision approving the property for a shopping center. The Amazon facility will have no independent unmitigated transportation impacts. In fact, the Amazon facility was not required to provide its own TIA for its site review because it generates fewer than 200 trips beyond those anticipated and mitigated in the Plan.

Finally, the 1% growth rate selected by the city and used in the report is reasonable and appropriate. It is consistent with the acknowledged growth rate established by Marion County for the Salem-Keizer UGB is 1.12. The fact that a traffic count taken on one day is lower – perhaps significantly lower – than traffic counts taken on another day proves nothing. By way of example, during the same general period argued by Greenlight, traffic counts taken at the Kuebler/I-5 southbound ramp terminal on December 7, 2017 were 3,702, but 7 months later on July 17, 2018 they were 3,648, an approximate 1.5% decrease. Best practices is to take traffic counts and then apply a reasonable growth rate. That is what KAI did here.

Traffic Counts

Greenlight Comment #9 (page 9): *Salem Administrative Rules 109-006-6.33(f) states that "traffic studies shall comply with the following: (1) Traffic counts shall be collected for both the AM (6:00 – 9:00 AM) and the PM (3:00-6:00 PM) peak." The TIA included traffic counts that were collected for only the weekday PM peak hour between 4 PM and 6 PM (May 31, 2018 TIA, Appendix A). When the TIA is redone to include this required information, traffic counts shall be based upon the hours of 3 PM- 6 PM. There are a number of schools in the area which may impact the subject area peak hour.*

Response*:* As explained elsewhere, the administrative rules, by their terms do not apply to the KAI Traffic Study. Where they apply, Salem Administrative Rules 109-006-6.33(f) state, "The City Traffic Engineer will determine which peak hours are required for traffic study." The study intersections and traffic count time periods were determined by the City Traffic Engineer and reviewed and approved by traffic professionals at the City of Salem. Furthermore, as stated on page 7 of the May 31, 2018 traffic study, existing traffic counts showed that the weekday p.m. peak hour occurs between 4:35 to 5:35 PM, well after the 4 PM count start time. If school schedules in the area were impacting the timing of the peak hour as strongly as the comment suggests, the observed peak hour would have been closer to a 4:00 start. However, the counts showed that the peak hour started at 4:35 and therefore 3:00 – 4:00 PM counts are not needed, as approved by the City.

Greenlight Comment #12 (page 11): *Salem Administrative Rules 109-006-6.33(c) requires the analysis of the weekday AM peak hour. It requires that the "TIA study area shall extend to the following:..all proposed access points...[a]ny intersection where the proposed development can be*

expected to contribute 50 or more trips during the analysis peak hour on a collector, arterial, or parkway, or 20 or more trips on a local street or alley." Costco gas stations are typically open in the weekday AM peak hour.

Since the TIA provides no information about how the trip generation of the Costco and gas station of any time period is derived, the industry standard ITE Trip Generation Manual was referenced as required by City Code. According to Trip Generation Manual, 30 fueling positions would generate 308 trips in the weekday AM peak hour. Costco gas stations appear to generate more traffic than typical gas stations based upon our informal observations. The 21,000 square feet of retail will likely be operating during the weekday AM peak hours as well. A 21,000 square foot shopping center generates 162 weekday AM peak hour trips according to the Trip Generation Manual. Based upon limited data of the Trip Generation Manual, a 160,000 discount club generates 78 weekday AM peak hour trips. All told, the Trip Generation Manual would estimate over 500 weekday AM peak hour trips. This quantity of trips would certainly require a number of intersections throughout the study area to be analyzed as required by Section 109-006-6.33(c).

Response: As explained elsewhere, the administrative rules, by their terms do not apply to this Traffic Study. The purpose of the Traffic Study for the site review proposal, was to provide evidence of compliance with the site review standards and confirm the continued validity of the traffic analysis supporting the 2007 Decision. The Roadway Standards do not apply as independent approval standards for site review. Moreover, where they apply, per the City of Salem Administrative Rules Section 6.33 (f) Peak Traffic Hours, "the City Traffic Engineer will determine which peak hours are required for traffic study." The study periods analyzed in the May 31, 2018 Traffic Study were coordinated with City staff and determined by the City Traffic Engineer as part of the traffic study scoping process. Furthermore, the weekday PM peak hour and Saturday midday peak hour represent the time periods when traffic levels are at their highest and therefore represent reasonable study time periods.

Regardless of whether the 500 weekday AM peak hour trips citied above by Greenlight is correct, it was determined by the City Traffic Engineer to focus the traffic analysis on the weekday PM peak hour and Saturday midday peak hour because by comparison the trip generation presented in the May 31, 2018 Traffic Study for the proposed Kuebler Gateway Shopping Center is much higher for those two time periods (1,276 weekday PM peak hour trips and 1,560 Saturday midday peak hour trips). The Greenlight comments related to trip generation are similar to previous comments that have been addressed starting on page 7 of this memorandum.

Greenlight Comment #13 (page 11): *In their June 28, 2018 letter, ODOT stated that "[t]he study utilized traffic counts from December 2017, during a period of the year when volumes are lowest, and did not apply any seasonal adjustment. ODOT's analysis procedures specify use of the 30th highest hour volume (30HV) of the year for analyses of ODOT facilities as the Oregon Highway Plan (OHP) mobility targets are specifically defined to be compared to the 30HV." Chapter 5 of ODOT's Analysis Procedures Manual2 states that "[t]raffic counts alone should not be used for design or operational*

analysis of projects. This chapter will outline procedures for developing 30th highest hour volumes (30HV)..." The July 2018 traffic count at the I-5 SB/Kuebler Boulevard intersection was not seasonally adjusted. Additionally, the I-5 NB/Kuebler Boulevard intersection analysis continues to rely on the December 2017 traffic count that was not seasonally adjusted. The TIA is not compliant with the APM and therefore, compliance with the mobility standard of the Oregon Highway Plan cannot be determined.

Response*:* This issue of a "seasonal adjustment" was addressed on page 6 of the August 9, 2018 Response to City and ODOT Review Comments memorandum. Based on previous coordination with City Public Works staff as part of the initial scoping of the May 2018 TIA, it was determined that traffic levels throughout the study area during the month of December represents acceptable traffic levels for use in a traffic analysis (i.e. 30th highest hour volume of the year). Per coordination with City and ODOT staff, it was agreed that a reasonable approach to verifying the December traffic count would be to collect a sample traffic count at the Kuebler/I-5 southbound ramp terminal during the peak travel months (June – August), as defined by ODOT. Table 4 below summarizes the traffic counts taken at the Kuebler/I-5 southbound ramp terminal intersection during the months of December and July. As shown in Table 5, the December traffic count is higher than the July 2018 traffic count, so the traffic volumes included in the May 2018 TIA represent conservative, acceptable traffic levels.

Table 5. Traffic Volume Comparison

Intersection	Traffic Volume (Total Entering Traffic)	
	December 2017	July 2018
Kuebler / I-5 Southbound Ramp Terminal	3,702	3,648

Furthermore, ODOT has informed both the City and applicant that the materials and analyses KAI provided in response to its comments is adequate to resolve ODOT's concerns.

Greenlight Comment #25 (page 17): *Traffic counts were collected at the Kuebler Boulevard/27th and Kuebler Boulevard/Battle Creek intersections in May 2018 (Appendix D), prior to the original submission of the traffic impact study that paint a different traffic count picture than presented in the May 31, 2018 TIA, which is based upon traffic counts collected in December 2017. All of the traffic counts were collected by the same vendor, Quality Counts. At the intersection of Kuebler Boulevard/27th Avenue, the May 2018 traffic counts illustrate an entering volume of 3521, while the December 2017 traffic counts illustrate an entering volume of 3384 vehicles per hour. This is a difference in traffic count over that six month period that is approximately 4% higher than what was presented in the TIA. At the intersection of Kuebler Boulevard/Battle Creek Road, the May 2018 traffic counts illustrate an entering volume of 4145 vehicles per hour while the December 2017 traffic counts presented in the May 31, 2018 TIA present traffic counts with an entering volume of 3995 vehicles per hour. The increase in traffic count over that six month period is approximately 3.7%. It should again be noted that the TIA illustrates the Kuebler Boulevard/Battle Creek Road intersection is*

expected to operate at the City of Salem mobility standard of 0.90. With a traffic volume 3.7% greater than the TIA illustrates, the intersection will likely operate with a v/c ratio greater than 0.90, thereby requiring mitigation.

Response*:* As explained above, the use of the 1% growth rate selected by the city is reasonable and appropriate. It is consistent with the acknowledged growth rate established by Marion County for the Salem-Keizer UGB is 1.12. The fact that a traffic count taken on one day is lower – perhaps significantly lower – than traffic counts taken on another day proves nothing and certainly does not require that the increase or decrease from such period supplement an acknowledged growth rate. By way of example, during the same general period argued by Greenlight, traffic counts taken at the Kuebler/I-5 southbound ramp terminal on December 7, 2017 were 3,702, but 7 months later on July 17, 2018 they were 3,648, an approximate 1.5% decrease. Best practices is to take traffic counts and then apply a reasonable growth rate. That is what KAI did here.

Kuebler Boulevard – Access

Greenlight Comment #10 (page 9): *SRC 804.001 states that the "purpose of this chapter is to establish development standards for safe and efficient access to public streets." SRC Salem Revised Code Section 220.005(f)(3) states that for the approval of a Class 3 Site Plan Review "shall be granted if: ...C) Parking areas and driveways are designed to facilitate safe and efficient movement of vehicles, bicycles and pedestrians." Kuebler Boulevard is classified as a Parkway (May 31, 2018 TIA, pg 6, Table 2). Section 804.040 of the SRC states that "[d]riveway approaches onto a parkway shall be no less than one mile from the nearest driveway approach or street intersection, measured from centerline to centerline." The existing Kuebler Road access (which currently serves no development and carries no traffic) is just 660 feet east of the Kuebler Boulevard/Battle Creek Road intersection and approximately 1290 feet west of the Kuebler Boulevard/27th Avenue intersection. This criterion cannot be met. City Code further states that "[t]he standards set forth in this section cannot be varied or adjusted." A Kuebler Boulevard access cannot meet the standard and should be removed. The TIA and site plan need to be updated to reflect no access to Kuebler Boulevard. The only argument the applicant provides in keeping this access is that since the access was required as a condition of approval of the 2006 zone change application, then it needs to be provided. However, the inclusion of the driveway is in clear violation of the UDC. SRC 804.001 establishes the "standards for safe and efficient access to public streets." As the access does not comply with this section, then the access does not meet the standards for a safe and efficient access to a public street. In fact, its presence is in clear violation of the UDC. If the access remains, then the application must be denied because the UDC cannot be met. If the access is removed, then that portion of the UDC can be met, but the TIA must be updated to reflect the removal of the driveway access.*

Response: The existing right-in only access driveway from Kuebler Boulevard was a Condition of Approval from CPC/ZC06-06 and was constructed as part of a City capital improvements project.

Fuel Station Queuing

Greenlight Comment #11 (page 10): *The November 29, 2018 TIA provides an analysis of queuing associated with the gas station. Previous versions of the TIA provided no analysis. This new TIA states that the "Costco fuel station may open with 24 fueling positions." Previous versions of the TIA refer to 30 fueling positions, so again, the various versions of the TIA conflict with each other and vary between 24 fueling positions and 30 fueling positions. If 30 fueling positions are eventually proposed, then this development is a multi-phased development and the horizon year should be based upon the opening of the 30 fueling positions rather than the 24 fueling positions. If that's the case, the queuing analysis should be updated to include 30 fueling positions. It is interesting that the queuing analysis is not based upon 30 fueling positions. The traffic engineer doesn't seem to know what is proposed exactly and leaves the reader unclear as to what is proposed and when.*

However, Table 1 of the November 29, 2018 TIA provides queuing estimates but provides no explanation of the methodology used to determine these queue estimates. There are no analysis printouts that establish how the data presented in Table 1 was determined. Again, the TIA provides no transparency and no ability to check the work presented in the TIA. If the proposal were to be adjusted to 30 fueling positions (as it should be if not multi-phased development), only the applicant can provide that estimate given it is based on no evidence.

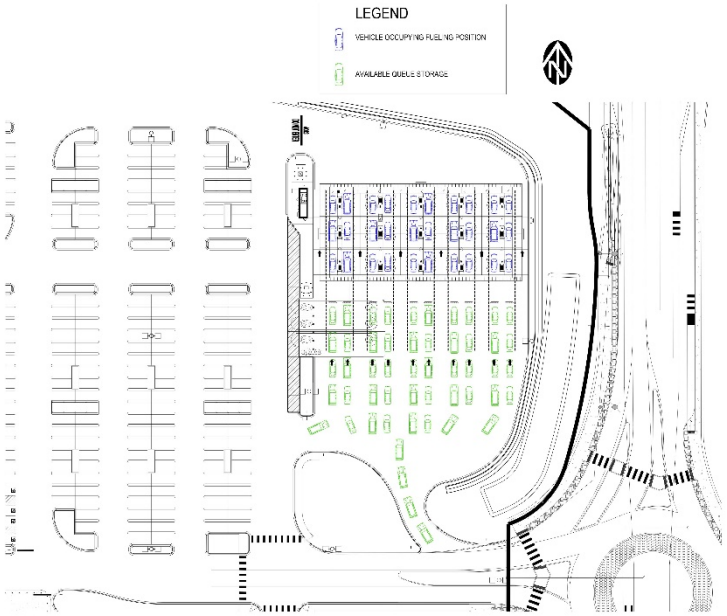
Within a few years of construction, the Tigard, Oregon Costco has had to make modifications to the on-site queue storage due to heavy demand of that gas station. The TIA prepared for that project was prepared by this same consultant presumably based upon this same data set that has not been provided for review. That design and the data has proven insufficient in that case if it the data was utilized. Given the proximity of the gas station to 27th Avenue, it is possible that the gas station queue could extend into primary entrance from 27th Avenue and into the roundabout. The TIA should provide

Response: As stated previously, KAI collected, analyzed, and refined transportation data for Costco related to trip generation, trip type (primary, pass-by, diverted, internal trips), parking demand, gasoline service rates, car wash service rates and vehicle queuing. That information has been summarized in detail in other submittals. The base data is attached to this memorandum.

Available Queue Storage at Costco Fuel Station

We assume that the proposed Costco fueling will open with 30 fueling positions, which provides capacity for a total of 82 vehicles at any given time. The 82-vehicle capacity consists of 30 vehicles parked at the fueling positions and 52 vehicles queued waiting for a fueling position to open. Exhibit 1 illustrates the available queue storage.

Exhibit 1. Available Queue Storage at the Salem Costco Fuel Station



Estimated Queues at Costco Fuel Station

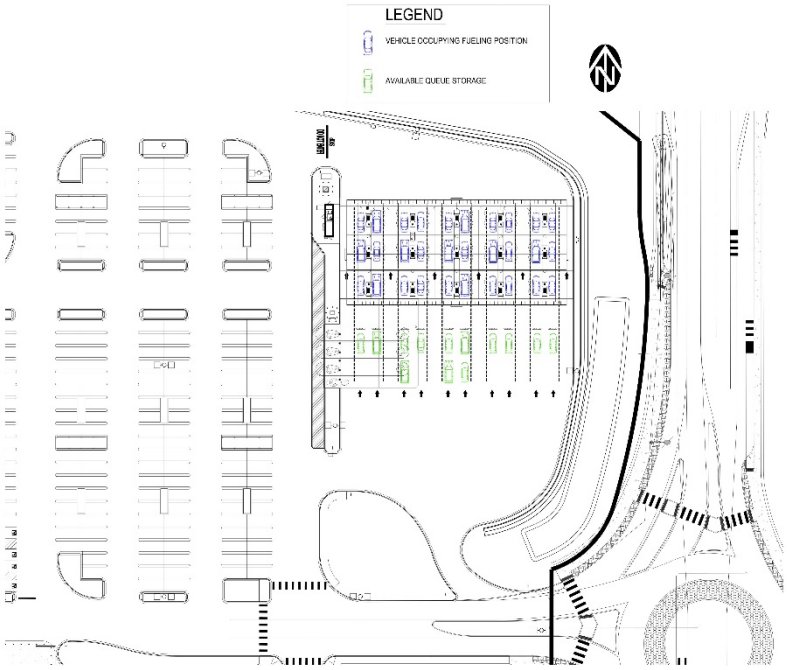
Table 6 summarizes the estimated peak hour vehicle queues based on trip generation data from the existing Salem Costco site and Costco Fueling-specific queue data. The queue represents the number of vehicles waiting in line for a fueling position to open.

Table 6. Estimated Vehicle Queues at the Proposed Salem Costco Fuel Station (based on 30 fueling positions)

Time Period	Average Queue	Max Queue	95th Percentile Queue
Weekday PM Peak	1 vehicle	8 vehicles	6 vehicles
Saturday Midday Peak	2 vehicles	13 vehicles	10 vehicles
Range	1 to 2 vehicles	8-13 vehicles	6-10 vehicles

As shown in Exhibit 1, assuming 30 fueling positions the proposed Costco fueling has queue storage for approximately 52 vehicles. The estimated maximum peak hour queue ranges between 8 and 13 vehicles during the two peak time periods, which can easily be accommodated within the proposed fuel station area. Exhibit 2 illustrates the estimated maximum queue during a Saturday peak at the fuel station.

Exhibit 2. Estimated Saturday Mid-day Peak Maximum Queue at the Salem Costco Fuel Station



Based on this analysis, the estimated maximum queue does not extend into the primary entrance from 27th Avenue. Therefore, the location of the proposed fuel station and design with 30 fueling positions is adequate to serve the expected demand without blocking the operations of the primary entrance from 27th Avenue or impairing internal circulation in any way.

Costco Wholesale is committed to providing queue storage that exceeds the estimated average and maximum queues at the fuel station for several key reasons: to maintain successful business operations; to provide a high level of customer service for their members; and to ensure that congestion and circulation on their site do not negatively impact operations or safety on the surrounding transportation system (e.g. spill back to 27th Street for this site). The figures and table show queue estimates that are based on average conditions at Costco during the weekday PM peak hour and Saturday midday peak hour. As we know with traffic, traffic patterns at a Costco fuel station fluctuate based on the time-of-day, holidays and non-holidays, and seasonal conditions. Also, vehicle types vary at the fuel station and include trucks, trailers, recreational vehicles, and other vehicle types that exceed the average 25-foot vehicle length assumed in the queue storage analysis. With this in mind, the vehicle queue at the fuel station is expected to be longer under certain holiday and seasonal conditions than what is shown under average conditions. This need for longer queue length and circulation can be accommodated within the additional queue storage area provided at the proposed fuel station. For the above reasons, the proposed fuel station is designed with queue storage of 52 spaces.

Costco's operations and sites for fuel stations have evolved over the years going from fuel stations with 12 fueling positions to 30 fueling positions. These sites have involved: 1) adding a fuel station on a constrained site (Tigard, OR), 2) expanding a fuel station from 12 to 16 fueling positions (Salem, OR; Wilsonville, OR), 16 to 22 fueling positions (Richmond, CA), and 16 to 24 fueling positions (Portland, OR; Wilsonville, OR), and 3) building a new Costco with fuel station that includes 24 fueling positions (Medford, OR) to 30-fueling positions (N Spokane, WA). With fuel station additions and expansions, the sites are often constrained due to balancing on-site circulation, parking needs for the warehouse, and queue storage for the fuel station. For new sites and fuel station expansions, Costco includes either 24 fueling positions, 30 fueling positions, and 32 fueling positions, with the precise number being tied to site specific conditions. At new sites, as is the case with the proposed Costco and fuel station on Kuebler Boulevard, the site and fuel station are designed to provide optimal circulation and queue storage at opening, so that average queues and atypical queues are accommodated on-site throughout the year and into the future.

Saturated Flow Rate

Greenlight Comment 14 (page 12): *The TIA relies on an ideal saturation flow rate of 1,900 vehicles per hour of green per lane for all intersections, for all movements and for all time periods. It appears that the May 31, 2018 TIA failed to consider Section 109-006-633(b)(1) of the SRC which requires that "ideal saturation flow rates greater than 1,800 vehicles per hour should not be used unless a separate flow rate analysis has been completed." In order to address this error, a very limited saturation flow rate analysis was completed as part of the August 9, 2018 TIA for the following intersections, time periods and movements:*

- *Weekday PM peak hour at Kuebler Boulevard/Battle Creek Road, westbound through movement & eastbound through movement*
- *I-5 Southbound/Kuebler Boulevard southbound right turn movement*

In turn, the TIA continued to utilize a saturation flow rate of 1,900 vehicles per hour of green per lane for all movements at all intersections for all time periods even though a saturation flow rate study does not support that use except at the movements specified above for the weekday PM peak hour only. There is no data to support the use of that saturation flow rate except for the intersection movements observed during the time period observed. There is no basis for the use of this ideal saturated flow rate at the other locations and time periods. At all other locations and time periods where a saturation flow study was not conducted, the default saturation flow rate of 1800 vehicles per hour of green per lane should be used. In all, the saturation flow study evaluated two intersections and a total of three intersection approaches in the weekday PM peak hour only. In whole, the TIA analyzes the impacts at nine intersections and 31 different approaches in two different time periods. While 1,900 vehicles per hour per lane is appropriate at the observed approaches, there is no evidence that supports the use of the ideal saturation flow rate of 1900 vehicles per hour of green per lane at the remaining 28 intersection approaches during the weekday PM peak hour period nor at any of the 31 approaches during the Saturday peak hour. Considering the impacts of both the weekday PM and Saturday peak hours, the saturation flow rate of a total of 59 approaches was not observed, but were assumed to operate with a saturation flow rate of 1900 vehicles per hour of green

per lane at each of these locations and time periods. The observations collected are not indicative of the saturation flow rates at any of the other intersection movements during any other time period. If the applicant intends to rely upon the 1900 vehicles per hour of green per lane ideal saturation flow rate, they should provide saturation flow rate analyses that support the use of those parameters that appear to have been used in error.

Response: The cited standard applies to TIAs required by SRC 803, which is not the case here. Regardless, the saturation flow rate used in the May 31, 2018 Traffic Study is accurate. Public Works Standards 6.33(b) authorizes a saturation flow rate other than 1800 where "*a separate flow rate analysis has been completed."* A saturation flow rate study (i.e. flow rate analysis) is the measurement of the maximum rate of flow of traffic in a specific lane group on an approach to a signalized intersection. KAI conducted such a separate flow rate analysis and the result of that analysis makes clear that the use of a 1900 vehicle per hour saturation flow rate is appropriate

The saturation flow rate study was performed per guidelines of the 2010 Highway Capacity Manual (Chapter 31) and the ODOT Analysis Procedures Manuel (APM) (page 3-38), and meets the requirements of one major intersection on a main study area roadway and a minimum of 15 signal cycles. Per the HCM and ODOT APM, a vehicle queue of at least 8 vehicles is needed to measure saturation flow rates. The specific locations used in this study meet this condition and were discussed and confirmed with City staff including the City Engineer, as an acceptable representation of saturation flow rates within the study.

Table 7 (below) provides a comparison of the saturation flow rates collected in the field to the rates used in the May 31, 2018 Traffic Study.

Table 7. Saturation Flow Rate

Movement	Saturation Flow Study	TIA Saturation Flow [1]	Difference [2]
Battle Creek at Kuebler			
Westbound Through	3,540	3,539	+1
Eastbound Through	3,519	3,505	+14
I-5 Southbound Ramp at Kuebler			
Southbound Right	3,255	2,787	+468

[1] Traffic study saturation flow is based on a baseline ideal flow of 1,900 vehicle per hour per lane (vphpl).

[2] Difference = Saturation Flow Study – TIA Saturation Flow

As show in Table 7, because the saturation flow rates collected in the field are greater than the rates used in the May 31, 2018 Traffic Study, using a 1,900 vphpl baseline flow rate meets the City of Salem Public Works Standards per Division 6, Section 6.33. Furthermore, the ODOT Analysis Procedures Manuel (page 3-37) supports the use of a saturation flow rate of 1900 inside the Salem MPO.

Off-Site Improvements

Greenlight Comment #15 (page 13): *Kuebler Boulevard is classified as a "parkway." Approximately 1,200 feet of the site's Kuebler Boulevard frontage was constructed without compliance with the City of Salem's Transportation System Plan3, which requires a seven foot wide landscape planter strip between the curb and sidewalk. A small portion of the frontage along Kuebler Boulevard will be constructed with a planter strip, between Battle Creek Road and the Kuebler Boulevard driveway that is prohibited by City Code. The remainder of the Kuebler Boulevard frontage is not illustrated to include a landscape strip. Additionally, a 16 foot wide center landscaped median is required, but not illustrated along any portion of the Kuebler Boulevard site frontage. As no access is permitted to Kuebler Boulevard, there is no reason not to construct this landscaped median at this time.*

Response: The scope of the completed project that constructed the referenced 1,200 linear feet of site frontage was part of a far larger project that included the widening of Kuebler Boulevard from Commercial Street to the I-5 Interchange. PacTrust contributed $3,000,000 toward the construction of these improvements per the 2007 Decision as mitigation in full for the impacts of a 314,000 GLA shopping center along Kuebler Boulevard. The specific scope of the project was determined by the City and the City, in fact, did design and construct those improvements. As such, the final City decisions regarding the specific street design the City applied are not relevant now. Due to site constraints along the Kuebler Boulevard right-of-way including boulder piles, steep slopes, and excessive grade changes, the City made adjustments to the design and construction of the frontage road improvements, as is its right. There is nothing to suggest that those improvements result in the proposed much smaller shopping center not meeting the city's site review criteria. KAI has reviewed all the relevant data, including for the streets immediately abutting the proposed development and its internal circulation, and concluded and concludes that the proposal meets the city's site review standards. If the city erred in the manner in which it designed or constructed the improvements it made to Kuebler Boulevard, and we do not think that it did, such does not affect the proposal's compliance with site review criteria.

Greenlight Comment #16 (page 13): *27th Avenue, Boone Road and Battle Creek Road are all classified as "collectors." A large portion of the site's 27th Avenue frontage that will be constructed is not illustrated to include a planter strip, also not in compliance with the City TSP. None of the site's Boone Road frontage is illustrated to be constructed with a landscape strip. None of the site's Battle Creek Road frontage is illustrated to be constructed with a landscape strip.*

Response: As shown on the PacTrust public infrastructure drawings, there are existing curbline walks along Battle Creek and at the NE leg of Boone Road at the intersection of Battle Creek Road and Boone Road, and new curb line sidewalks occur in three locations around the shopping center development. These existing and proposed curbline sidewalks are in accordance with the City of Salem Revised Code Chapter 803. SRC 803.035(l)(2)(B). The existing curbline sidewalks located along Battle Creek Road and Boone Road are in conformance with Salem Revised Code Section 803.065(a). There are three locations that new curbline sidewalks are shown on the proposed

improvements. The first location is along Boone Road adjacent to the mitigated drainage channel, and then transitions to a property line walk east of the channel. If a property line walk was installed the difference in topography of the drainage and the sidewalk, while providing the code required fill slope (2:1), would require fill within the mitigated drainage channel, therefore this section meets SRC 803.035(l)(2)(B). The second location of new curbline sidewalk is located just south of the southwest corner of Kuebler Boulevard and 27th Avenue. If a property line walk was installed the difference in topography of the City's Raingarden and the sidewalk, while providing the code required fill slope (2:1), would fill the Raingarden reducing the capacity and would not be in conformance with City of Salem Department of Public Works Administrative Rules Chapter 109 Division 004, therefore a property line sidewalk is allowed in accordance with SRC 803.035(l)(2)(B). The third location of a new proposed curbline walk is just south of the southeast corner of Kuebler Boulevard and 27th Avenue along the creek and a portion of 27th with significant elevation change. If a property line walk was installed the difference in topography of the Creek and the sidewalk, by providing the code required fill slope (2:1) would require fill within the Creek, therefore this curbline sidewalk is in conformance with SRC 803.035(l)(2)(B). All other proposed sidewalks along 27th Ave including the roundabout show property line sidewalks in accordance with City of Salem Department of Public Works Administrative Rules Chapter 109 Division 006 and Salem Revised Code Chapter 803.

Queuing Analysis

Greenlight Comment #17 (page 13): *According to the Synchro Studio 10 User Guide, "All analysis methods in Synchro have this limitation. If vehicles are spilling out of a turn pocket or through vehicles are blocking a turn pocket, the delay that would occur in the field is not included in the models' delay output." Much of the queuing analysis was prepared using Synchro, which is a macroscopic model. This methodology is appropriate for isolated intersections that are uncongested. In order to capture realistic queue lengths and spillover effects in an urban setting such the case in the study area, a microscopic simulation model such as SimTraffic should be utilized to report the queue lengths for closely spaced intersections such are many of the intersections in the study area.*

Response: The queueing analysis prepared for this project and presented in the May 31, 2018 traffic study and subsequent supplemental document (dated August 9, 2018) utilized both Synchro and SimTraffic for various signalized intersections. The Synchro queueing analysis performed at the Kuebler/Battle Creek intersection is consistent with City of Salem requirements for TIA's where required (which is not here) (Division 006 – Street Design Standards). The Kuebler/Battle Creek intersection is approximately 4,800 feet east of Commercial Street and approximately 1,950 feet west of 27th Avenue, and as summarized in Table 7 (95th Percentile Vehicle Queueing Analysis Results) of the May 31, 2018 Traffic Study, vehicles are not forecast to spill out of turn pockets or spillback into adjacent signalized intersections.

However, per ODOT's request (dated June 28, 2018), a 95th percentile queuing analysis was performed using SimTraffic 10. The analysis focused on the closer spaced subject intersections along Kuebler Boulevard which includes 27th Avenue, I-5 Northbound ramp terminal, and the I-5 Southbound ramp terminal. The spacing between these three signalized intersections are approximately 1,225 feet (between 27th and I-5 SB ramp) and 1,040 feet (between I-5 NB ramp and I-5 SB ramp). Results of the simulation-based queuing analysis indicate that the 95th percentile queue lengths are accommodated for all movements at the three intersections, which is consistent with the findings in the TIA. Additional details are provided on page 7 of the August 9, 2018 Response to City and ODOT Review Comments memorandum. Furthermore, ODOT has informed both the City and applicant that the materials and analyses KAI provided in response to its comments is adequate to resolve ODOT's concerns. Moreover, those materials demonstrate that they do resolve the concerns because ODOT has no additional traffic comments or requirements for the applicant.

Greenlight Comment #18 (page 13): *Although not reported in the queue tables of the TIA, the westbound and eastbound through queue exceed the theoretical capacity of the intersection per the Synchro outputs. The eastbound through movement queue is reported as 727 feet and the westbound through movement queue length is reported as 947 feet, far exceeding the depth of the turn lanes.*

Response: The available queue storage for the eastbound and westbound through movements along Kuebler Boulevard at Battle Creek are greater than 1,500 feet over two travel lanes in both directions and therefore the estimated 95th percentile queues cited above in the Greenlight comment can be accommodated by the available storage lanes at the Kuebler Boulevard/Battle Creek Road intersection.

Greenlight Comment #19 (page 13): *During the weekday PM peak hour, the westbound through movement queue length at the Kuebler Boulevard/27th Avenue intersection is anticipated to be 500 feet, blocking the westbound left turn lane (August 9, 2018 TIA, pg 9, Table G) with the approval of the development. As noted, the delay associated with this issue is not documented in Synchro.*

Response: While it is possible that through movement queues may extend past the striped entrance to the westbound left-turn lane during congested conditions, left-turning traffic will be able to access the left-turn lane via the center median striped area, resulting in little to no delay and therefore has no documented delay in Synchro. As previously stated in the May 31, 2018 traffic study and the August 9, 2018 Response to City and ODOT Review Comments memorandum, the queueing analysis performed for this project utilized both Synchro and SimTraffic for various signalized intersections and ODOT has informed both the City and applicant that the materials and analyses KAI provided in response to its comments is adequate to resolve ODOT's concerns. There is nothing about KAI's analysis that fails to meet any applicable standard or the inapplicable TIA requirements articulated in the Public Works Standards 6.33.

Greenlight Comment #20 (page 14): *During the weekday PM peak hour, the northbound right turn movement queue length at the Kuebler Boulevard/27th Avenue intersection is anticipated to be 325 feet, extending into the roundabout at 27th Avenue/Costco site access (August 9, 2018 TIA, pg 9, Table G) with the approval of the development.*

Greenlight Comment #21 (page 14): *The TIA establishes that during the weekday PM peak hour, the northbound right turn movement queue length at the Kuebler Boulevard/27th Avenue intersection will be 325 feet, which will extend into the 27th Avenue/Site Access roundabout intersection.*

Response: Queuing analyses were performed using Synchro and SimTraffic (simulation-based queueing analysis) and the 95th percentile queue lengths for the northbound right-turn movement are projected to be accommodated within the storage length. Details are provided on page 29 of the May 31, 2018 Traffic Study and page 9 of the August 9, 2018 Response to City and ODOT Review Comments memorandum.

SITE PLAN OPTIONS

As stated in the Request for Remand document (page 13 and 14) prepared by Kellington Law Group, several site plan options were developed and evaluated against City standard SRC 220.005(f)(3)(B) and (C):

> "(B) The transportation system provides for the safe, orderly, and efficient circulation of traffic into and out of the proposed development, and negative impacts to the transportation system are mitigated adequately[.]"
>
> "(C) Parking areas and driveways are designed to facilitate safe and efficient movement of vehicles, bicycles, and pedestrians[.]"

Exhibit A of the Request for Remand document provides the site plan options. While the proposed site plan meets this standard, all other plans fail to meet SRC 220.005(f)(3)(B) for the following reasons.

NW Option

- The NW site plan limits the circulation options within the parking lot for motorists entering the site from the roundabout and directs the majority of traffic to the main entrance of the Costco store, thus increasing the potential for conflicts between motor vehicles and pedestrians.
- As the roundabout serves as a primary access to the site, locating the fueling station in the southeast corner requires fuel patrons to yield to exiting motorist and pedestrians to make a westbound left turn to enter the fuel station area. This site plan configuration creates more conflict points near the main entrance to the Costco store and creates the potential for vehicles to queue and spillback into the roundabout.

- Cross circulation to/from land uses to the west of the overall site is inefficient as no east-west drive aisles are in alignment, thus requiring motorists to make two turning movements to access the adjacent parking fields.
- The circulation patten within the main parking field south of Costco has the potential to channelize a majority of motorists to the front side of the Costco building were pedestrian activity is at its highest because of the need to circulate around the area of trees to access one parking field from the other. This creates an unsafe condition.
- The drive aisle to the north and west of the Costco building is required for a couple of reasons. First, Kuebler Boulevard is not an appropriate fire access for the site due to grade changes between the site and Kuebler Boulevard, its distance from the building, and the heavy volume of traffic on Kuebler Boulevard. The project team has confirmed this with the Salem Fire Marshal and an on-site fire lane is required around the building. Second, in an attempt to minimize conflicts between pedestrians and delivery trucks at the store entrance, and to keep delivery trucks off of Boone Road, delivery trucks are to circulate around the building. To accommodate the size of the trucks and their turning radius, this driveway is at least 30-feet wide, not including the 5-feet stoop for all the emergency exit doors located along the face of the building.

NE Option / SE Option 1 / SE Option 2

- All three site plan options prohibit use of the roundabout on 27th Avenue as a primary access to the site due to the close proximity of the Costco building. This access to 27th Avenue is needed to meet SRC 220.005(f)(3)(B) and (C) as documented in the May 31, 2018 Traffic Study. The intersection control (roundabout) and location (approximately 450' south of Kuebler Boulevard) have been fully coordinated and approved by City staff to meet the requirements of SRC 220.005(f)(3)(B) and (C).

SW Option

- Cross circulation between the western and eastern land uses for motor vehicles, pedestrians, and bicyclists is inefficient and raises safety concerns as the location and orientation of the Costco building creates a barrier in the middle of the overall site.
- The SW site plan option only has one on-site drive-aisle connecting the western and eastern land uses; the only crossover location is an off-set configuration and is in close proximity to the Kuebler right-in access; thus increasing the number of conflicts and vehicle delays and the potential for vehicle queues spilling back from the right-in access onto Kuebler Boulevard.

CONCLUSION

As documented in the May 31, 2018 Traffic Study, supplemental memoranda, and this response to the December 10, 2018 Greenlight Engineering comments, the proposed Kuebler Gateway Shopping Center can be developed while maintaining acceptable operations on-site and on the adjacent transportation network and demonstrates compliance with SRC 220.005(f)(3)(B) and (C).

EXPIRES: 06/30/20

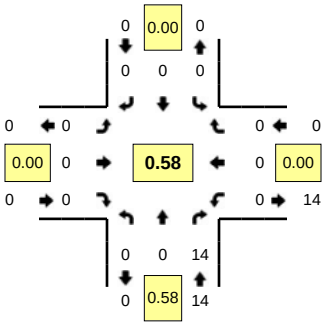
Appendix A: Costco – Traffic Counts and Pass-by Survey Data

Type of peak hour being reported: User-Defined

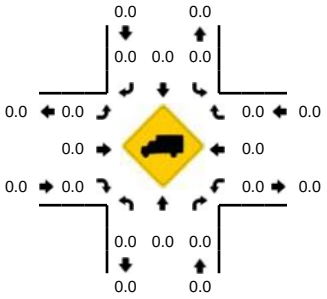
Method for determining peak hour: Total Entering Volume

LOCATION: Washington St -- Costco Dwy #1
CITY/STATE: Helena, MT

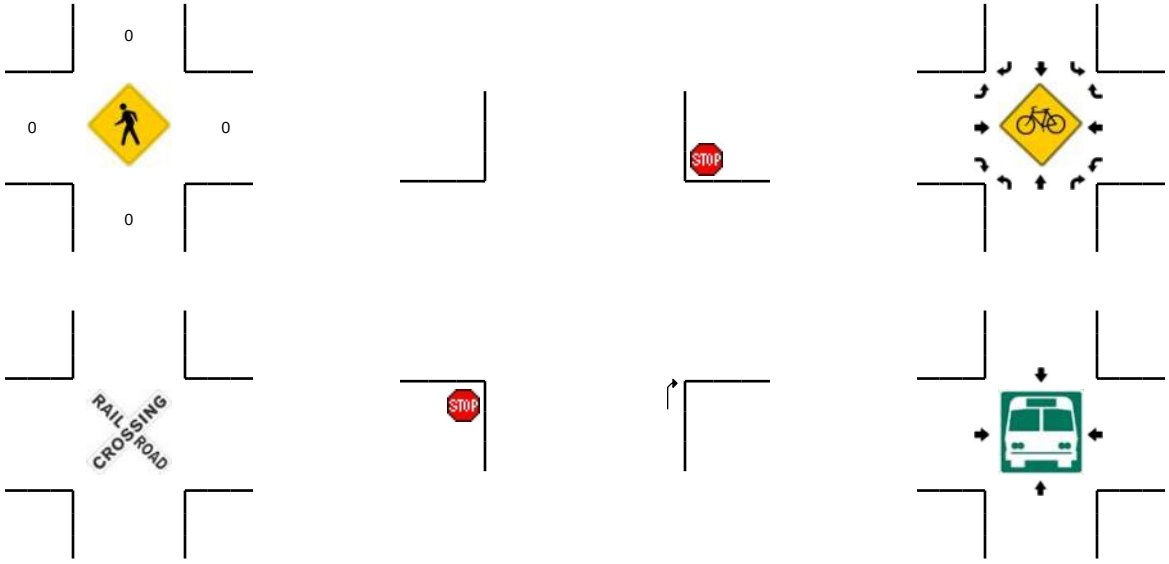
QC JOB #: 10359101
DATE: 5/29/2008



Peak-Hour: 4:55 PM -- 5:55 PM
Peak 15-Min: 4:15 PM -- 4:30 PM



Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES



5-Min Count Period Beginning At	Washington St (Northbound)			Washington St (Southbound)			Costco Dwy #1 (Eastbound)			Costco Dwy #1 (Westbound)			Total	Hourly Totals
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
4:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	
4:05 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	
4:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	
4:20 PM	0	0	3	0	0	0	0	0	0	0	0	0	3	
4:25 PM	0	0	2	0	0	0	0	0	0	0	0	0	2	
4:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	
4:35 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	
4:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	
4:50 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	
4:55 PM	0	0	2	0	0	0	0	0	0	0	0	0	2	14
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	13
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	12
5:10 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	13
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	12
5:20 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	10
5:25 PM	0	0	2	0	0	0	0	0	0	0	0	0	2	10
5:30 PM	0	0	2	0	0	0	0	0	0	0	0	0	2	11
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	10
5:40 PM	0	0	3	0	0	0	0	0	0	0	0	0	3	13
5:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	13
5:50 PM	0	0	2	0	0	0	0	0	0	0	0	0	2	14
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	12

Peak 15-Min Flowrates	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
All Vehicles	0	0	24	0	0	0	0	0	0	0	0	0	24
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians		0			0			0			0		0
Bicycles													
Railroad													
Stopped Buses													

Comments:

Report generated on 6/9/2008 1:29 PM

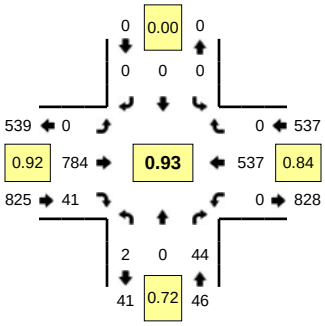
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: User-Defined

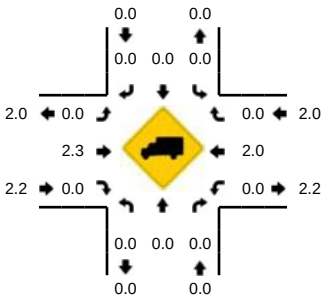
Method for determining peak hour: Total Entering Volume

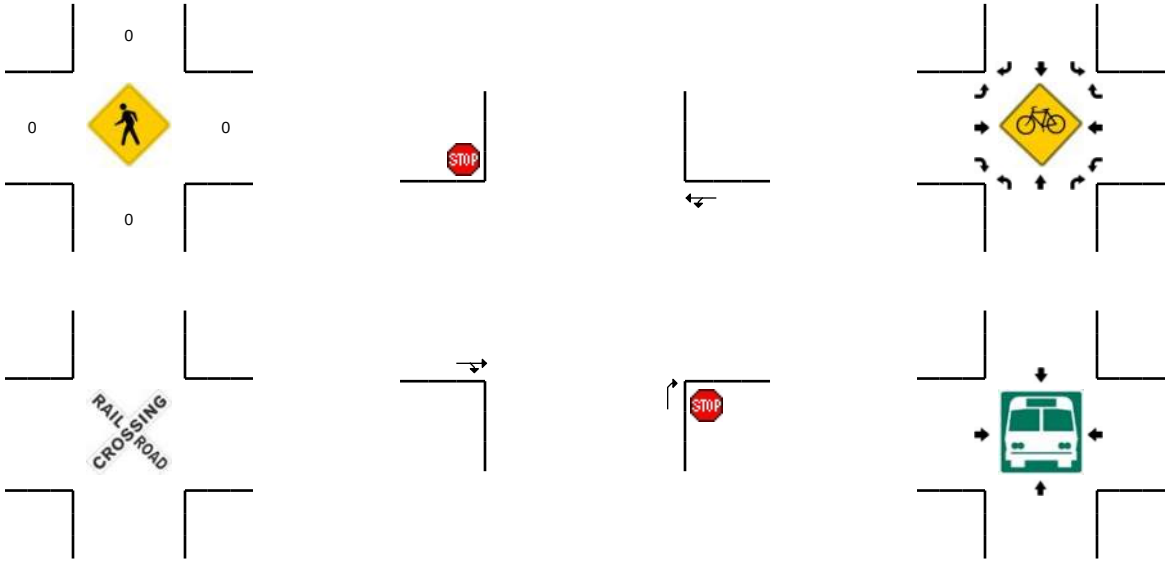
LOCATION: Costco Dwy #2 -- Custer Ave
CITY/STATE: Helena, MT

QC JOB #: 10359103
DATE: 5/29/2008



Peak-Hour: 4:55 PM -- 5:55 PM
Peak 15-Min: 5:40 PM -- 5:55 PM





5-Min Count Period Beginning At	Costco Dwy #2 (Northbound)				Costco Dwy #2 (Southbound)				Custer Ave (Eastbound)				Custer Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	4	0	0	0	0	0	0	58	1	0	0	30	0	0	93	
4:05 PM	0	0	2	0	0	0	0	0	0	46	1	0	0	34	0	0	83	
4:10 PM	0	0	5	0	0	0	0	0	0	63	3	0	0	30	0	0	101	
4:15 PM	0	0	2	0	0	0	0	0	0	66	4	0	0	40	0	0	112	
4:20 PM	0	0	2	0	0	0	0	0	0	68	3	0	0	31	0	0	104	
4:25 PM	0	0	4	0	0	0	0	0	0	49	4	0	0	41	0	0	98	
4:30 PM	0	0	4	0	0	0	0	0	0	56	4	0	0	30	0	0	94	
4:35 PM	0	0	7	0	0	0	0	0	0	53	4	0	0	41	0	0	105	
4:40 PM	0	0	6	0	0	0	0	0	0	63	2	0	0	40	0	0	111	
4:45 PM	0	0	2	0	0	0	0	0	0	59	2	0	0	43	0	0	106	
4:50 PM	0	0	4	0	0	0	0	0	0	50	0	0	0	58	0	0	112	
4:55 PM	1	0	4	0	0	0	0	0	0	60	4	0	0	37	0	0	106	1225
5:00 PM	0	0	2	0	0	0	0	0	0	47	3	0	0	43	0	0	95	1227
5:05 PM	1	0	5	0	0	0	0	0	0	63	6	0	0	37	0	0	112	1256
5:10 PM	0	0	8	0	0	0	0	0	0	71	2	0	0	45	0	0	126	1281
5:15 PM	0	0	2	0	0	0	0	0	0	65	3	0	0	35	0	0	105	1274
5:20 PM	0	0	5	0	0	0	0	0	0	68	3	0	0	42	0	0	118	1288
5:25 PM	0	0	2	0	0	0	0	0	0	67	4	0	0	48	0	0	121	1311
5:30 PM	0	0	1	0	0	0	0	0	0	68	3	0	0	57	0	0	129	1346
5:35 PM	0	0	2	0	0	0	0	0	0	64	1	0	0	50	0	0	117	1358
5:40 PM	0	0	4	0	0	0	0	0	0	67	4	0	0	53	0	0	128	1375
5:45 PM	0	0	6	0	0	0	0	0	0	69	6	0	0	43	0	0	124	1393
5:50 PM	0	0	3	0	0	0	0	0	0	75	2	0	0	47	0	0	127	1408
5:55 PM	0	0	4	0	0	0	0	0	0	62	3	0	0	36	0	0	105	1407

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	0	0	52	0	0	0	0	0	0	844	48	0	0	572	0	0	1516
Heavy Trucks	0	0	0		0	0	0		0	16	0		0	12	0		28
Pedestrians		0				0				0				0			0
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/9/2008 1:29 PM

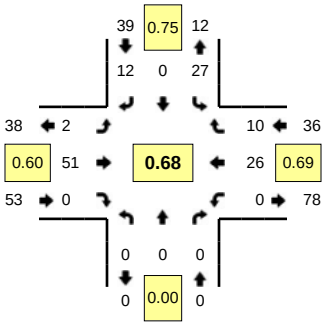
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: User-Defined

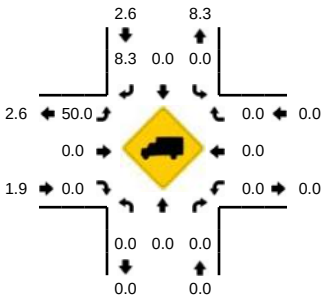
Method for determining peak hour: Total Entering Volume

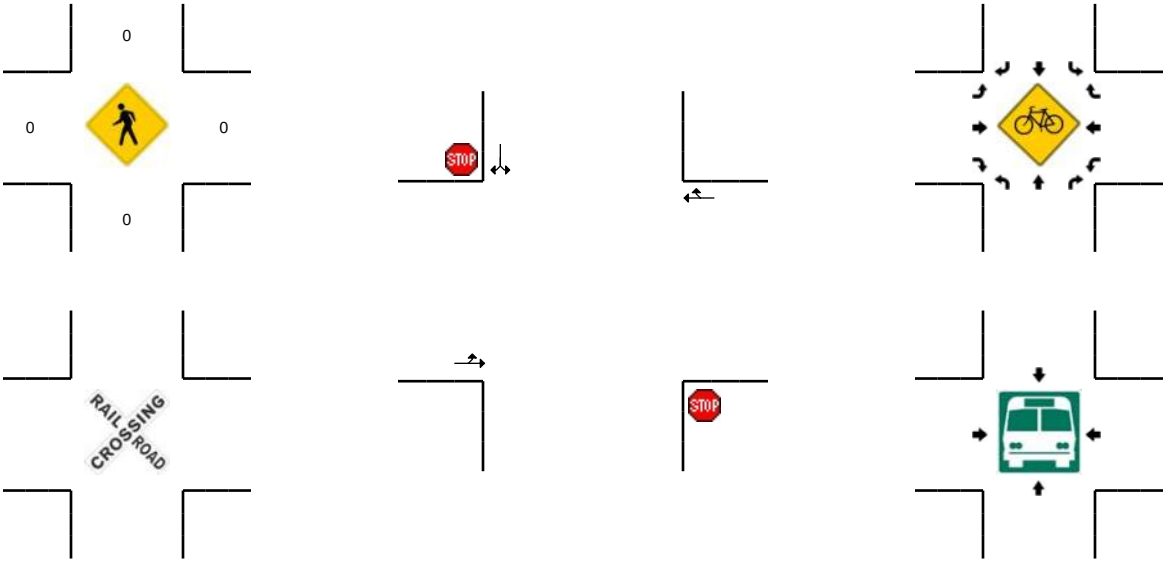
LOCATION: Costco Dwy #3 -- Cromwell-Dixon Ln
CITY/STATE: Helena, MT

QC JOB #: 10359105
DATE: 5/29/2008



Peak-Hour: 4:55 PM -- 5:55 PM
Peak 15-Min: 5:20 PM -- 5:35 PM





5-Min Count Period Beginning At	Costco Dwy #3 (Northbound)				Costco Dwy #3 (Southbound)				Cromwell-Dixon Ln (Eastbound)				Cromwell-Dixon Ln (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	1	0	2	0	0	1	0	0	0	1	0	0	5	
4:05 PM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	
4:10 PM	0	0	0	0	1	0	0	0	1	1	0	0	0	1	1	0	5	
4:15 PM	0	0	0	0	4	0	0	0	0	1	0	0	0	1	1	0	7	
4:20 PM	0	0	0	0	2	0	1	0	0	2	0	0	0	3	1	0	9	
4:25 PM	0	0	0	0	0	0	2	0	0	4	0	0	0	2	0	0	8	
4:30 PM	0	0	0	0	3	0	0	0	0	1	0	0	0	1	0	0	5	
4:35 PM	0	0	0	0	1	0	1	0	0	2	0	0	0	0	1	0	5	
4:40 PM	0	0	0	0	2	0	0	0	0	4	0	0	0	1	0	0	7	
4:45 PM	0	0	0	0	2	0	1	0	0	4	0	0	0	1	0	0	8	
4:50 PM	0	0	0	0	3	0	1	0	1	3	0	0	0	4	1	0	13	
4:55 PM	0	0	0	0	2	0	1	0	0	1	0	0	0	4	1	0	9	83
5:00 PM	0	0	0	0	1	0	3	0	0	2	0	0	0	1	2	0	9	87
5:05 PM	0	0	0	0	2	0	1	0	0	7	0	0	0	0	0	0	10	95
5:10 PM	0	0	0	0	2	0	0	0	0	3	0	0	0	2	1	0	8	98
5:15 PM	0	0	0	0	1	0	0	0	1	4	0	0	0	2	1	0	9	100
5:20 PM	0	0	0	0	3	0	1	0	0	6	0	0	0	4	1	0	15	106
5:25 PM	0	0	0	0	5	0	0	0	0	7	0	0	0	2	0	0	14	112
5:30 PM	0	0	0	0	3	0	1	0	0	9	0	0	0	5	0	0	18	125
5:35 PM	0	0	0	0	3	0	1	0	0	6	0	0	0	1	2	0	13	133
5:40 PM	0	0	0	0	1	0	1	0	0	2	0	0	0	4	1	0	9	135
5:45 PM	0	0	0	0	2	0	0	0	0	3	0	0	0	0	1	0	6	133
5:50 PM	0	0	0	0	2	0	3	0	1	1	0	0	0	1	0	0	8	128
5:55 PM	0	0	0	0	0	0	1	0	0	5	0	0	0	5	0	0	11	130

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	0	0	0	0	44	0	8	0	0	88	0	0	0	44	4	0	188
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/9/2008 1:29 PM

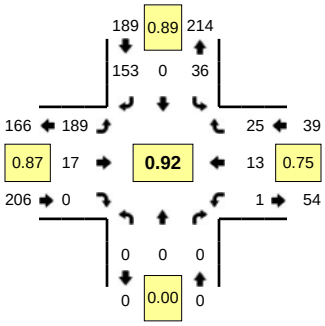
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: User-Defined

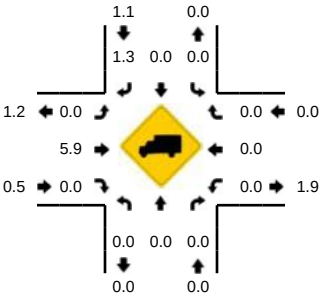
Method for determining peak hour: Total Entering Volume

LOCATION: Costco Dwy # 4 -- Cromwell-Dixon Ln
CITY/STATE: Helena, MT

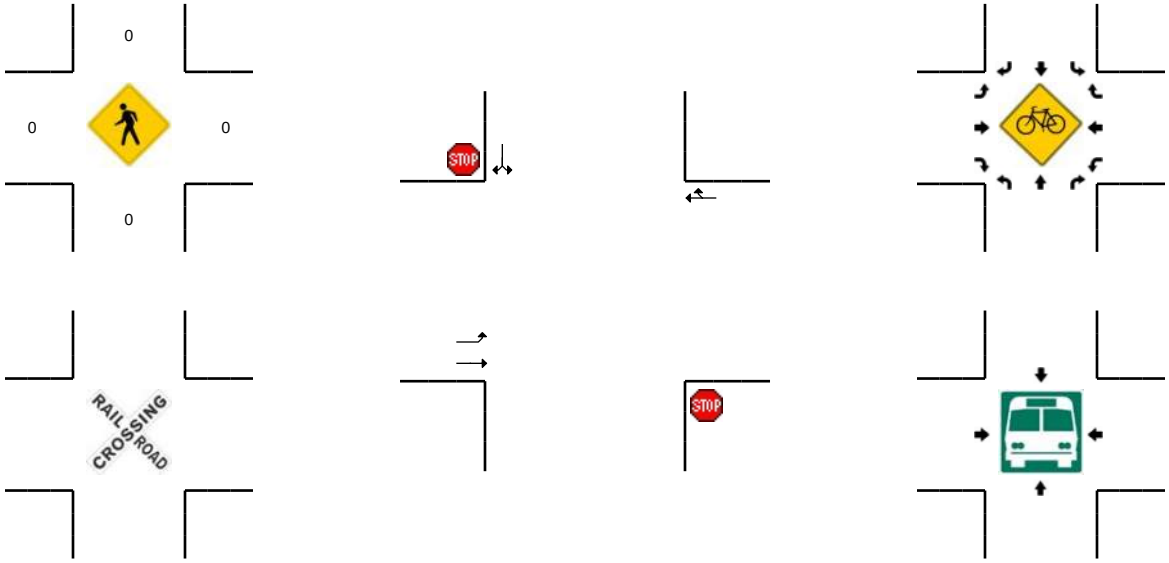
QC JOB #: 10359107
DATE: 5/29/2008



Peak-Hour: 4:55 PM -- 5:55 PM
Peak 15-Min: 5:25 PM -- 5:40 PM



Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES



5-Min Count Period Beginning At	Costco Dwy # 4 (Northbound)				Costco Dwy # 4 (Southbound)				Cromwell-Dixon Ln (Eastbound)				Cromwell-Dixon Ln (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	1	0	11	0	19	0	0	0	0	2	0	0	33	
4:05 PM	0	0	0	0	0	0	14	0	26	0	0	0	0	1	1	0	42	
4:10 PM	0	0	0	0	0	0	14	0	16	2	0	0	0	0	1	0	33	
4:15 PM	0	0	0	0	1	0	14	0	19	0	0	0	0	0	1	0	35	
4:20 PM	0	0	0	0	1	0	11	0	20	1	0	1	0	1	2	0	37	
4:25 PM	0	0	0	0	4	0	2	0	15	0	0	0	0	3	2	0	26	
4:30 PM	0	0	0	0	1	0	13	0	24	0	0	0	0	0	1	0	39	
4:35 PM	0	0	0	0	3	0	15	0	15	0	0	0	0	1	0	0	34	
4:40 PM	0	0	0	0	2	0	22	0	12	1	0	0	0	0	1	0	38	
4:45 PM	0	0	0	0	3	0	14	0	13	2	0	0	0	1	1	0	34	
4:50 PM	0	0	0	0	2	0	16	0	14	1	0	0	0	1	3	0	37	
4:55 PM	0	0	0	0	0	0	20	0	11	0	0	0	0	0	5	1	37	425
5:00 PM	0	0	0	0	2	0	13	0	17	0	0	0	0	1	2	0	35	427
5:05 PM	0	0	0	0	7	0	11	0	14	0	0	0	0	1	1	0	34	419
5:10 PM	0	0	0	0	2	0	9	0	15	1	0	0	0	0	2	0	29	415
5:15 PM	0	0	0	0	2	0	11	0	19	3	0	0	0	0	2	0	37	417
5:20 PM	0	0	0	0	3	0	10	0	10	3	0	0	0	1	3	0	30	410
5:25 PM	0	0	0	0	4	0	11	0	18	3	0	0	0	2	1	0	39	423
5:30 PM	0	0	0	0	5	0	12	0	13	4	0	0	0	2	3	0	39	423
5:35 PM	0	0	0	0	6	0	10	0	20	1	0	0	0	2	1	0	40	429
5:40 PM	0	0	0	0	1	0	12	0	11	0	0	0	0	1	4	0	29	420
5:45 PM	0	0	0	0	2	0	7	0	21	1	0	0	0	0	0	0	31	417
5:50 PM	0	0	0	0	2	0	27	0	20	1	0	0	0	3	1	0	54	434
5:55 PM	0	0	0	0	3	0	15	0	14	1	0	0	0	3	3	0	39	436

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	0	0	0	0	60	0	132	0	204	32	0	0	0	24	20	0	472
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/9/2008 1:29 PM

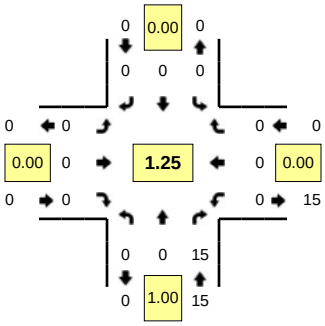
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: System Peak

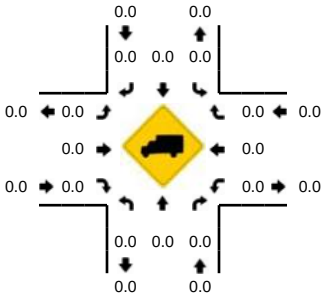
Method for determining peak hour: Total Entering Volume

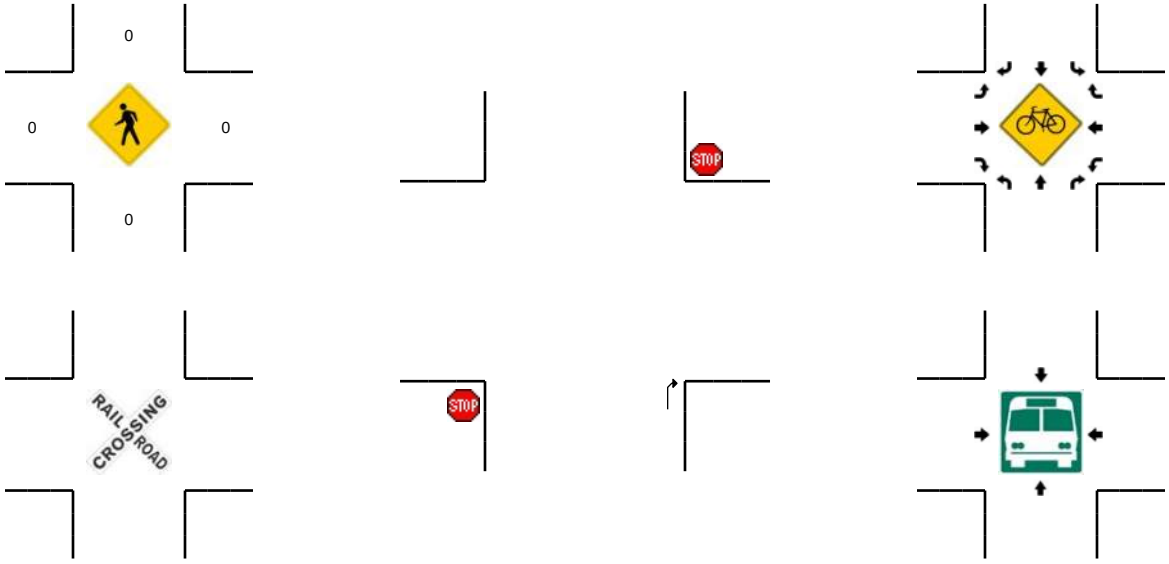
LOCATION: Washington St -- Costco Dwy #1
CITY/STATE: Helena, MT

QC JOB #: 10359102
DATE: 5/31/2008



Peak-Hour: 12:15 PM -- 1:15 PM
Peak 15-Min: 12:55 PM -- 1:10 PM





5-Min Count Period Beginning At	Washington St (Northbound)				Washington St (Southbound)				Costco Dwy #1 (Eastbound)				Costco Dwy #1 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:50 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
11:55 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	9
12:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	11
12:05 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	12
12:10 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	15
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
12:20 PM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	17
12:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
12:30 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	17
12:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
12:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15
12:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	16
12:50 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	17
12:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
1:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	15
1:05 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	16
1:10 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	15
1:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	16
1:20 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	13
1:25 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	15
1:30 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	15
1:35 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	16
1:40 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	18

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	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	12
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/9/2008 12:39 PM

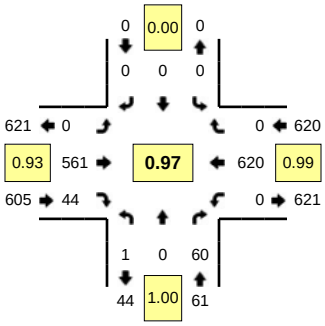
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: System Peak

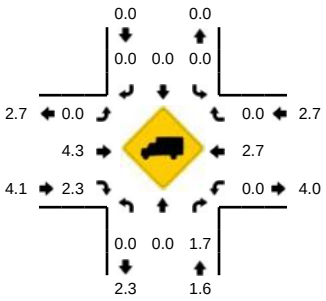
Method for determining peak hour: Total Entering Volume

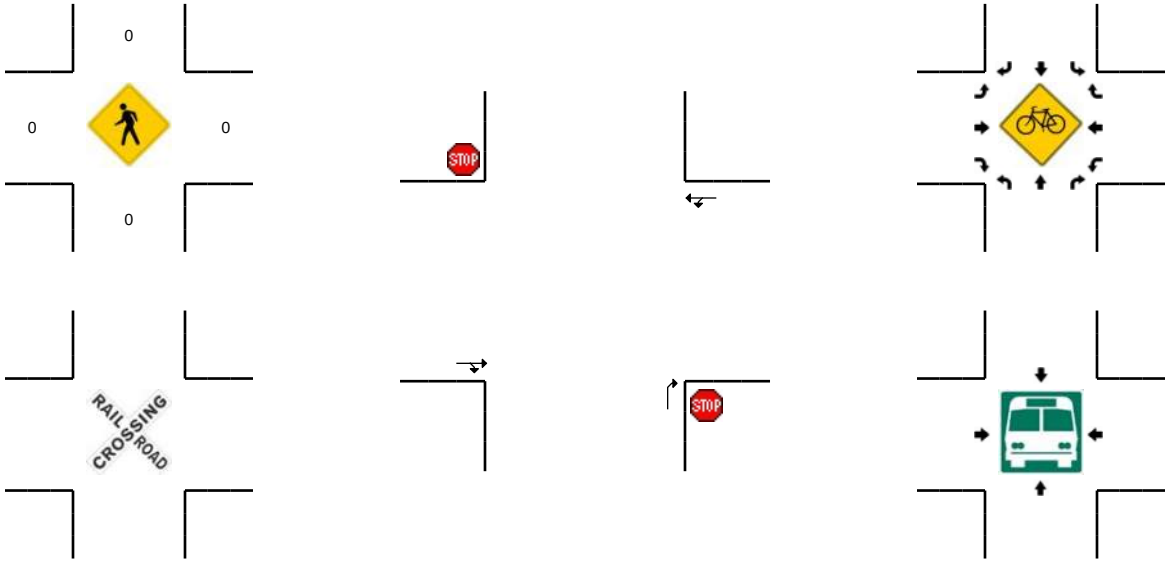
LOCATION: Costco Dwy #2 -- Custer Ave
CITY/STATE: Helena, MT

QC JOB #: 10359104
DATE: 5/31/2008



Peak-Hour: 12:15 PM -- 1:15 PM
Peak 15-Min: 12:55 PM -- 1:10 PM





5-Min Count Period Beginning At	Costco Dwy #2 (Northbound)				Costco Dwy #2 (Southbound)				Custer Ave (Eastbound)				Custer Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:45 AM	0	0	4	0	0	0	0	0	0	57	8	0	0	46	0	0	115	
11:50 AM	0	0	3	0	0	0	0	0	0	43	1	0	0	52	0	0	99	
11:55 AM	0	0	5	0	0	0	0	0	0	53	6	0	0	58	0	0	122	1178
12:00 PM	0	0	4	0	0	0	0	0	0	34	3	0	0	32	0	0	73	1171
12:05 PM	0	0	3	0	0	0	0	0	0	54	7	0	0	41	0	0	105	1177
12:10 PM	0	0	8	0	0	0	0	0	0	36	1	0	0	65	0	0	110	1222
12:15 PM	0	0	6	0	0	0	0	0	0	49	4	0	0	40	0	0	99	1242
12:20 PM	0	0	6	0	0	0	0	0	0	39	2	0	0	48	0	0	95	1249
12:25 PM	0	0	6	0	0	0	0	0	0	58	4	0	0	50	0	0	118	1258
12:30 PM	0	0	3	0	0	0	0	0	0	43	6	0	0	57	0	0	109	1258
12:35 PM	0	0	6	0	0	0	0	0	0	46	2	0	0	40	0	0	94	1235
12:40 PM	1	0	4	0	0	0	0	0	0	45	3	0	0	59	0	0	112	1251
12:45 PM	0	0	5	0	0	0	0	0	0	53	5	0	0	66	0	0	129	1265
12:50 PM	0	0	7	0	0	0	0	0	0	35	4	0	0	43	0	0	89	1255
12:55 PM	0	0	3	0	0	0	0	0	0	55	5	0	0	66	0	0	129	1262
1:00 PM	0	0	3	0	0	0	0	0	0	48	1	0	0	36	0	0	88	1277
1:05 PM	0	0	6	0	0	0	0	0	0	51	2	0	0	55	0	0	114	1286
1:10 PM	0	0	5	0	0	0	0	0	0	39	6	0	0	60	0	0	110	1286
1:15 PM	0	0	3	0	0	0	0	0	0	46	1	0	0	38	0	0	88	1275
1:20 PM	0	0	3	0	0	0	0	0	0	33	5	0	0	36	0	0	77	1257
1:25 PM	0	0	4	0	0	0	0	0	0	27	5	0	0	71	0	0	107	1246
1:30 PM	0	0	2	0	0	0	0	0	0	39	8	0	1	56	0	0	106	1243
1:35 PM	0	0	3	0	0	0	0	0	0	28	10	0	2	53	0	0	96	1245
1:40 PM	0	0	4	0	0	0	0	0	0	45	2	0	0	47	0	0	98	1231

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	0	0	48	0	0	0	0	0	0	616	32	0	0	628	0	0	1324
Heavy Trucks	0	0	0		0	0	0		0	24	0		0	16	0		40
Pedestrians		0				0				0				0			0
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/9/2008 12:39 PM

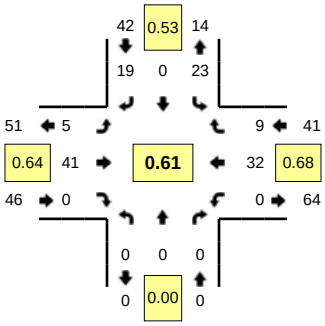
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: System Peak

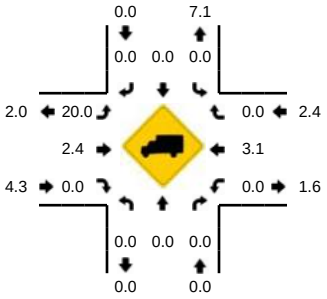
Method for determining peak hour: Total Entering Volume

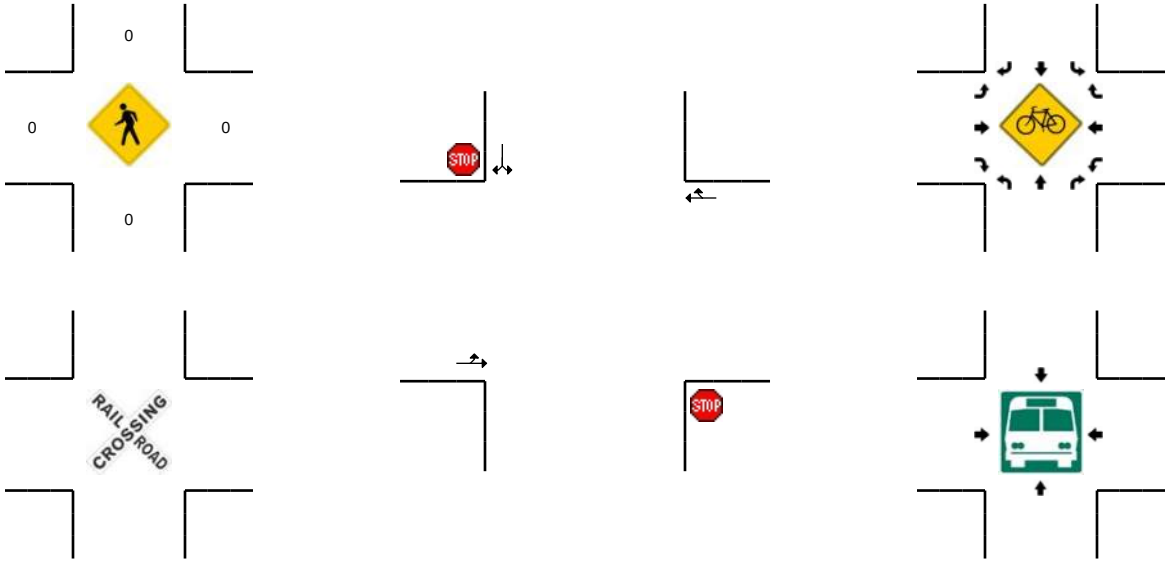
LOCATION: Costco Dwy #3 -- Cromwell-Dixon Ln
CITY/STATE: Helena, MT

QC JOB #: 10359106
DATE: 5/31/2008



Peak-Hour: 12:15 PM -- 1:15 PM
Peak 15-Min: 12:55 PM -- 1:10 PM





5-Min Count Period Beginning At	Costco Dwy #3 (Northbound)				Costco Dwy #3 (Southbound)				Cromwell-Dixon Ln (Eastbound)				Cromwell-Dixon Ln (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:45 AM	0	0	0	0	5	0	3	0	0	2	0	0	0	4	0	0	14	
11:50 AM	0	0	0	0	3	0	5	0	1	3	0	0	0	1	1	0	14	
11:55 AM	0	0	0	0	4	0	3	0	0	2	0	0	0	2	1	0	12	127
12:00 PM	0	0	0	0	3	0	3	0	0	2	0	0	0	1	1	0	10	132
12:05 PM	0	0	0	0	3	0	3	0	0	4	0	0	0	0	2	0	12	142
12:10 PM	0	0	0	0	1	0	3	0	0	3	0	0	0	1	1	0	9	145
12:15 PM	0	0	0	0	1	0	1	0	2	4	0	0	0	2	0	0	10	145
12:20 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3	134
12:25 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	1	1	0	5	121
12:30 PM	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	4	114
12:35 PM	0	0	0	0	2	0	2	0	0	3	0	0	0	1	2	0	10	113
12:40 PM	0	0	0	0	1	0	1	0	0	4	0	0	0	3	1	0	10	113
12:45 PM	0	0	0	0	1	0	1	0	1	4	0	0	0	2	0	0	9	108
12:50 PM	0	0	0	0	3	0	2	0	1	2	0	0	0	4	0	0	12	106
12:55 PM	0	0	0	0	3	0	1	0	0	6	0	0	0	1	0	0	11	105
1:00 PM	0	0	0	0	3	0	3	0	0	4	0	0	0	5	3	0	18	113
1:05 PM	0	0	0	0	6	0	4	0	1	7	0	0	0	4	2	0	24	125
1:10 PM	0	0	0	0	1	0	2	0	0	2	0	0	0	8	0	0	13	129
1:15 PM	0	0	0	0	2	0	3	0	1	4	0	0	0	2	0	0	12	131
1:20 PM	0	0	0	0	6	0	1	0	0	4	0	0	0	6	0	0	17	145
1:25 PM	0	0	0	0	3	0	0	0	0	3	0	0	0	3	0	0	9	149
1:30 PM	0	0	0	0	2	0	2	0	0	13	0	0	0	1	0	0	18	163
1:35 PM	0	0	0	0	1	0	1	0	0	4	0	0	0	2	0	0	8	161
1:40 PM	0	0	0	0	2	0	3	0	0	3	0	0	0	1	0	0	9	160

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	0	0	0	0	48	0	32	0	4	68	0	0	0	40	20	0	212
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	0	0		4
Pedestrians		0				0				0				0			0
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/9/2008 12:39 PM

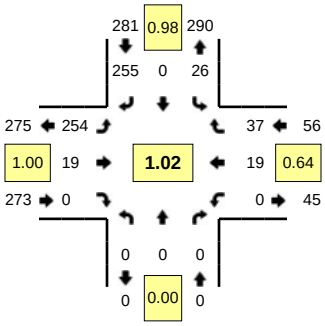
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: System Peak

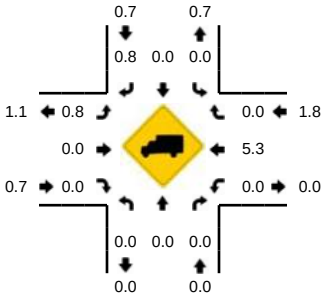
Method for determining peak hour: Total Entering Volume

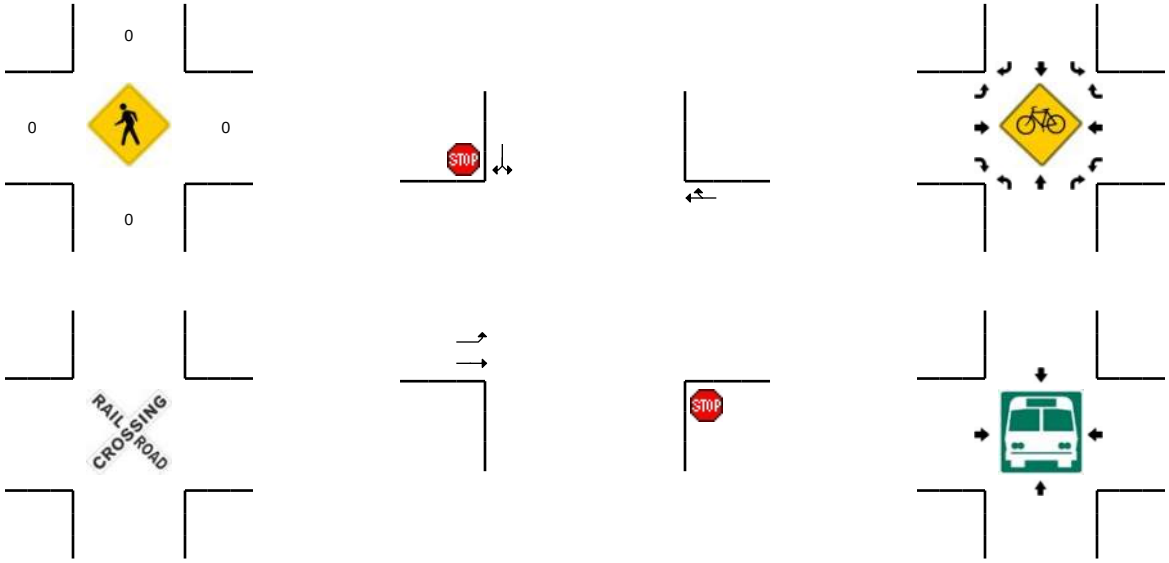
LOCATION: Costco Dwy # 4 -- Cromwell-Dixon Ln
CITY/STATE: Helena, MT

QC JOB #: 10359108
DATE: 5/31/2008



Peak-Hour: 12:15 PM -- 1:15 PM
Peak 15-Min: 12:55 PM -- 1:10 PM





5-Min Count Period Beginning At	Costco Dwy # 4 (Northbound)				Costco Dwy # 4 (Southbound)				Cromwell-Dixon Ln (Eastbound)				Cromwell-Dixon Ln (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:45 AM	0	0	0	0	1	0	20	0	25	2	0	0	0	4	1	0	53	
11:50 AM	0	0	0	0	1	0	21	0	24	1	0	1	0	3	1	0	52	
11:55 AM	0	0	0	0	1	0	18	0	25	1	0	0	0	2	2	0	49	571
12:00 PM	0	0	0	0	1	0	17	0	24	3	0	0	0	4	4	0	53	586
12:05 PM	0	0	0	0	3	0	25	0	21	0	0	0	0	2	0	0	51	590
12:10 PM	0	0	0	0	2	0	21	0	32	2	0	0	0	3	1	0	61	619
12:15 PM	0	0	0	0	2	0	21	0	26	0	0	0	0	1	1	0	51	617
12:20 PM	0	0	0	0	2	0	24	0	26	1	0	0	0	0	1	0	54	627
12:25 PM	0	0	0	0	1	0	27	0	28	0	0	0	0	0	0	0	56	633
12:30 PM	0	0	0	0	0	0	17	0	19	3	0	0	0	2	0	0	41	613
12:35 PM	0	0	0	0	0	0	15	0	24	4	0	0	0	2	3	0	48	609
12:40 PM	0	0	0	0	3	0	19	0	21	1	0	0	0	1	5	0	50	619
12:45 PM	0	0	0	0	4	0	23	0	9	2	0	0	0	1	3	0	42	608
12:50 PM	0	0	0	0	2	0	26	0	21	3	0	0	0	3	3	0	58	614
12:55 PM	0	0	0	0	3	0	23	0	24	1	0	0	0	1	0	0	52	617
1:00 PM	0	0	0	0	3	0	22	0	13	1	0	0	0	2	7	0	48	612
1:05 PM	0	0	0	0	5	0	16	0	14	2	0	0	0	2	10	0	49	610
1:10 PM	0	0	0	0	1	0	22	0	28	1	0	1	0	4	4	0	61	610
1:15 PM	0	0	0	0	2	0	14	0	15	3	0	0	0	5	2	0	41	600
1:20 PM	0	0	0	0	4	0	23	0	27	0	0	0	0	2	5	0	61	607
1:25 PM	0	0	0	0	3	0	17	0	19	0	0	0	0	1	2	0	42	593
1:30 PM	0	0	0	0	11	0	15	0	21	2	0	0	0	4	0	0	53	605
1:35 PM	0	0	0	0	1	0	18	0	27	3	0	0	0	1	2	0	52	609
1:40 PM	0	0	0	0	1	0	21	0	16	2	0	0	0	3	1	0	44	603

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	0	0	0	0	44	0	244	0	204	16	0	0	0	20	68	0	596
Heavy Trucks	0	0	0		0	0	4		0	0	0		0	0	0		4
Pedestrians		0				0				0				0			0
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/9/2008 12:39 PM

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

COSTCO WHOLESALE TRIP GENERATION DATA COLLECTION
HELENA, MONTANA

Location: Helena, MT **Name of Surveyor:** JUSTIN HIGGINS
Date of Survey: 5/29/08 **Time Period:** 4-6 PM

Approach patron and ask: "Do you mind if I ask you a few questions regarding your visit to Costco Wholesale today?"

Time of Day (Just note every ½ hour)	Q1. Where did you begin your trip immediately prior to stopping at this warehouse?	Q2. Will you be using the Costco gas station on this trip?	Q3. From Costco, will you go directly back to where you began your trip?	Q4. Where will your next stop be?	Q5. Would you have driven by this site on Custer Ave., Washington St., or Cromwell-Dixon Ln. even if you had not stopped here now?	Q6. If this warehouse was not here, what is the closest intersection you would have traveled through?	
	A. Home B. Work C. Other retail D. Other (specify)	A. Yes B. No	A. Yes (skip remaining questions) B. No (go to Q4)	A. Home B. Work C. Other retail D. Other (specify)	A. Yes (skip remaining questions) B. No (go to Q6)	(Point out on attached Map)	
4:00 PM	A	B	B	C.	A		Pass-by
	C	B	B	A	B	Montana / Custer	Diverted
	A	B	A				Primary
	C.	B	B	A	B	Prospect / Montana	Diverted
	B	B	B	A	B	Custer Ave / Benton	Diverted
	D. IHOP	B	B	C. Brothers House	A		Pass
	B	B	B	A	A		Pass
	B	A	B	A	A		Pass
	D. Chiropractor	A	B	A	B	I-15	Diverted
	D. Childs	B	B	A	A		Pass
	Home Depot	B	B	A	A		Pass
	C. Walmart	B	B	A	A		Pass
	B. Commercial	B	B	A	A		Pass
	A	B	B	D. Visit Son	B	Montana / Custer	Diverted
	B	B	B	A	A		Pass

Internal: 20

Primary: 16
Pass-by: 32
Diverted: 46
94 total

②

COSTCO WHOLESALE TRIP GENERATION DATA COLLECTION
HELENA, MONTANA

Location: Helena, MT Name of Surveyor: JUSTIN HIGGINS
Date of Survey: 5/29/08 Time Period: 4-6 PM

Approach patron and ask: "Do you mind if I ask you a few questions regarding your visit to Costco Wholesale today?"

Time of Day (Just note every ½ hour)	Q1. Where did you begin your trip immediately prior to stopping at this warehouse?	Q2. Will you be using the Costco gas station on this trip?	Q3. From Costco, will you go directly back to where you began your trip?	Q4. Where will your next stop be?	Q5. Would you have driven by this site on Custer Ave., Washington St., or Cromwell-Dixon Ln. even if you had not stopped here now?	Q6. If this warehouse was not here, what is the closest intersection you would have traveled through?	
	A. Home B. Work C. Other retail D. Other (specify)	A. Yes B. No	A. Yes (skip remaining questions) B. No (go to Q4)	A. Home B. Work C. Other retail D. Other (specify)	A. Yes (skip remaining questions) B. No (go to Q6)	(Point out on attached Map)	
	B	A	B	A	B	W. Lay Dr. / Canyon Ferry	Diverted
	C. Macys	B	B	C. Walmart	B	Cedar / Washington	Diverted
	D. Pick children	B	B	A	A		Pass
	A	B	B	D. Soccer Practice	A		Pass
	D. Daycare	B	B	A	A		Pass
	B	B	B	D. Visit Father	A		Pass
	D. Visiting Friends	B	B	A	A		Pass
	B.	B	B	D. Hardy	A		Pass
4:30	B	B	B	A	B	Hwy 12 East	Diverted
	B	A	A	A	A		Pass
	B	B	B	A	A	.	Pass
	D. Real Food Store	B	B	A	B	Hwy 12 EAST	Diverted
	A	B	A				Primary
	Park Ave Bakery	A	B	D. Park	B	Cedar / Washington	Diverted
	A	B	A				Primary

COSTCO WHOLESALE TRIP GENERATION DATA COLLECTION
HELENA, MONTANA

Location: Helena, MT
Name of Surveyor: JUSTIN HIGGINS
Date of Survey: 5/29/08
Time Period: 4-6 PM

Approach patron and ask: "Do you mind if I ask you a few questions regarding your visit to Costco Wholesale today?"

Time of Day (Just note every ½ hour)	Q1. Where did you begin your trip immediately prior to stopping at this warehouse?	Q2. Will you be using the Costco gas station on this trip?	Q3. From Costco, will you go directly back to where you began your trip?	Q4. Where will your next stop be?	Q5. Would you have driven by this site on Custer Ave., Washington St., or Cromwell-Dixon Ln. even if you had not stopped here now?	Q6. If this warehouse was not here, what is the closest intersection you would have traveled through?	
	A. Home B. Work C. Other retail D. Other (specify)	A. Yes B. No	A. Yes (skip remaining questions) B. No (go to Q4)	A. Home B. Work C. Other retail D. Other (specify)	A. Yes (skip remaining questions) B. No (go to Q6)	(Point out on attached Map)	
*	A, B Butte, MT	A	B	C. Home Depot	B	@ I-5, out of town not relevant	Diverted
	A	B	B	C. Walmart	B	Wiley and York	Diverted
	A	B	A				Primary
	A	B	A				Primary
	Capital Chiropractor	A	B	A	B	I-15 / Colonial	Diverted
	A	B	B	D. Soccer Practice	A		Pass
	Restaurant	B	B	C. Baths	B	Cedar / Washington	Diverted
	D. Appointment	B	B	C. Other Retail	A		Pass
	B	A	B	C. Home Depot	B	Hwy 12 East	Diverted
	Albertsons	A	B	A.	B	Cedar / Washington	Diverted
	B	B	B	A	A		Pass
	B	B	B	A	A		Pass
	A	A	A				Primary
	A	B	A				Primary
	D. Eye Doctor	B	B	A	B	Cedar / Washington	Diverted

COSTCO WHOLESALE TRIP GENERATION DATA COLLECTION
HELENA, MONTANA

Location: Helena, MT **Name of Surveyor:** Justin Higgins
Date of Survey: 5/29/08 **Time Period:** 4-6 PM

Approach patron and ask: "Do you mind if I ask you a few questions regarding your visit to Costco Wholesale today?"

Time of Day (Just note every ½ hour)	Q1. Where did you begin your trip immediately prior to stopping at this warehouse?	Q2. Will you be using the Costco gas station on this trip?	Q3. From Costco, will you go directly back to where you began your trip?	Q4. Where will your next stop be?	Q5. Would you have driven by this site on Custer Ave., Washington St., or Cromwell-Dixon Ln. even if you had not stopped here now?	Q6. If this warehouse was not here, what is the closest intersection you would have traveled through?	
	A. Home B. Work C. Other retail D. Other (specify)	A. Yes B. No	A. Yes (skip remaining questions) B. No (go to Q4)	A. Home B. Work C. Other retail D. Other (specify)	A. Yes (skip remaining questions) B. No (go to Q6)	(Point out on attached Map)	
	B. Conference	A.	B	A	A		Pass
	B.	A	B	A.	B	Bird's Eye Golf Course	Divert
	D. Drop off husband	B	B	A	A		Pass
5:00	B	B	B	A	B	Prospect S. to clancy	Divert
	A	B	A				Primary
Canyon Ferry	D. The Lake	A	B	D. The lake	A		Pass
	B.	B	B	A	B	Montana / 11th	Divert
	San Diego	B	B	A	B	Montana / Custer	Divert
	A Boulder, MT	B	A				Primary
	C. Petco	B	B	A.	B	Custer / Montana	Divert
	A	B	A				Primary
	B	B	B	A	B	I-15 & 11th	Divert
	C. Jungle Juice	A	B	A.	B	Hwy 12 East	Divert
	D. Friends House	B	B	C. Resta	B	Clancy South	Divert
	Chiles	B.	B	A	A		Pass

COSTCO WHOLESALE TRIP GENERATION DATA COLLECTION
HELENA, MONTANA

Location: Helena, MT **Name of Surveyor:** JUSTIN HIGGINS
Date of Survey: 5/29/08 **Time Period:** 4-6 PM

Approach patron and ask: "Do you mind if I ask you a few questions regarding your visit to Costco Wholesale today?"

Time of Day (Just note every ½ hour)	Q1. Where did you begin your trip immediately prior to stopping at this warehouse?	Q2. Will you be using the Costco gas station on this trip?	Q3. From Costco, will you go directly back to where you began your trip?	Q4. Where will your next stop be?	Q5. Would you have driven by this site on Custer Ave., Washington St., or Cromwell-Dixon Ln. even if you had not stopped here now?	Q6. If this warehouse was not here, what is the closest intersection you would have traveled through?	
	A. Home B. Work C. Other retail D. Other (specify)	A. Yes B. No	A. Yes (skip remaining questions) B. No (go to Q4)	A. Home B. Work C. Other retail D. Other (specify)	A. Yes (skip remaining questions) B. No (go to Q6)	(Point out on attached Map)	
	B	B	A				Primary
	B	B	B	A	B	Montana / Custer	Diverted
	B	A	B	A	B	I-15 NORTH	Diverted
	B	B	B	A	B	Montana / Custer	Diverted
	A	B	B	Baseball game	A		Pass
	B	B	A				Primary
	B	A	B	C. McDonalds	B	N Montana / Custer	Diverted
	A	A	B	C. Chiles	B	Capital Exit	Diverted
	B	B	B	A	B	Montana / Custer	Diverted
	B	B	B	A	B	Great Northern / Town Center	Diverted
	B	B	B	A	A		Pass
	A	B	A				Primary
5:30	D. Swimming Pool	B	B	C. TARGET	B	Montana / Custer	Diverted
	B	B	B	A	B	11th / Montana	Diverted
	Chiles	B	B	Airport	A		Pass

COSTCO WHOLESALE TRIP GENERATION DATA COLLECTION
HELENA, MONTANA

Location: Helena, MT **Name of Surveyor:** JUSTIN HIGGINS
Date of Survey: 5/29/08 **Time Period:** 4-6 PM

Approach patron and ask: "Do you mind if I ask you a few questions regarding your visit to Costco Wholesale today?"

Time of Day (Just note every ½ hour)	Q1. Where did you begin your trip immediately prior to stopping at this warehouse?	Q2. Will you be using the Costco gas station on this trip?	Q3. From Costco, will you go directly back to where you began your trip?	Q4. Where will your next stop be?	Q5. Would you have driven by this site on Custer Ave., Washington St., or Cromwell-Dixon Ln. even if you had not stopped here now?	Q6. If this warehouse was not here, what is the closest intersection you would have traveled through?	
	A. Home B. Work C. Other retail D. Other (specify)	A. Yes B. No	A. Yes (skip remaining questions) B. No (go to Q4)	A. Home B. Work C. Other retail D. Other (specify)	A. Yes (skip remaining questions) B. No (go to Q6)	(Point out on attached Map)	
	C. McDonalds	B	B	A	B	Montana / Custer	Diverted
	B	A	B	D Dinner	B	Montana / Custer	Diverted
	HAIR STYLIST	B	B	A	A		Pass
	A	B	A				Primary
	B	B	B	A	B	Cartor / Lindell	Diverted
	B	B	B	A	B	Cedar / Washington	Diverted
	A	B	B	C. Grocery	B	I-15 / Cedar	Diverted
	A	B	A				Primary
	B	A	B	A	B	Cedar / Washington	Diverted
	Vet Clinic	B	B	D. Mom's House	A		Pass
	Post Office	B	B	D. Soccer Practice	A		Pass
	A	B	B	D. TARGET	A		Pass
	B	B	B	D. DINNER	B	11th / Montana	Diverted
	A	B	B	Walmart	B	Montana / Custer	Diverted
	A	B	A				Primary

(7)

COSTCO WHOLESALE TRIP GENERATION DATA COLLECTION
HELENA, MONTANA

Location: Helena, MT **Name of Surveyor:** JUSTIN HIGGINS
Date of Survey: 5/29/08 **Time Period:** 4-6 PM

Approach patron and ask: "Do you mind if I ask you a few questions regarding your visit to Costco Wholesale today?"

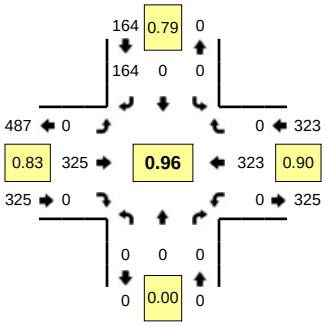
Time of Day (Just note every ½ hour)	Q1. Where did you begin your trip immediately prior to stopping at this warehouse?	Q2. Will you be using the Costco gas station on this trip?	Q3. From Costco, will you go directly back to where you began your trip?	Q4. Where will your next stop be?	Q5. Would you have driven by this site on Custer Ave., Washington St., or Cromwell-Dixon Ln. even if you had not stopped here now?	Q6. If this warehouse was not here, what is the closest intersection you would have traveled through?
	A. Home B. Work C. Other retail D. Other (specify)	A. Yes B. No	A. Yes (skip remaining questions) B. No (go to Q4)	A. Home B. Work C. Other retail D. Other (specify)	A. Yes (skip remaining questions) B. No (go to Q6)	(Point out on attached Map)
	A	B	B	C. Walmart	B	Hwy 12 EAST Diverted
	C. Walmart	A	B	A	B	Cedar / old Airport Rd. Diverted
	ATM	B	B	C. Walmart	B	Cedar / old Airport Rd. Diverted
	C. Applebees	A	B	C. Walmart	~~A~~ B	Montana / Custer Diverted

Type of peak hour being reported: User-Defined

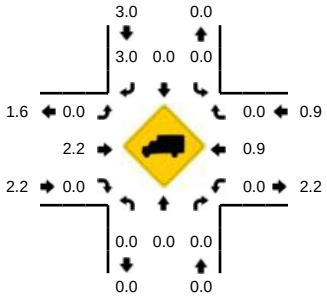
Method for determining peak hour: Total Entering Volume

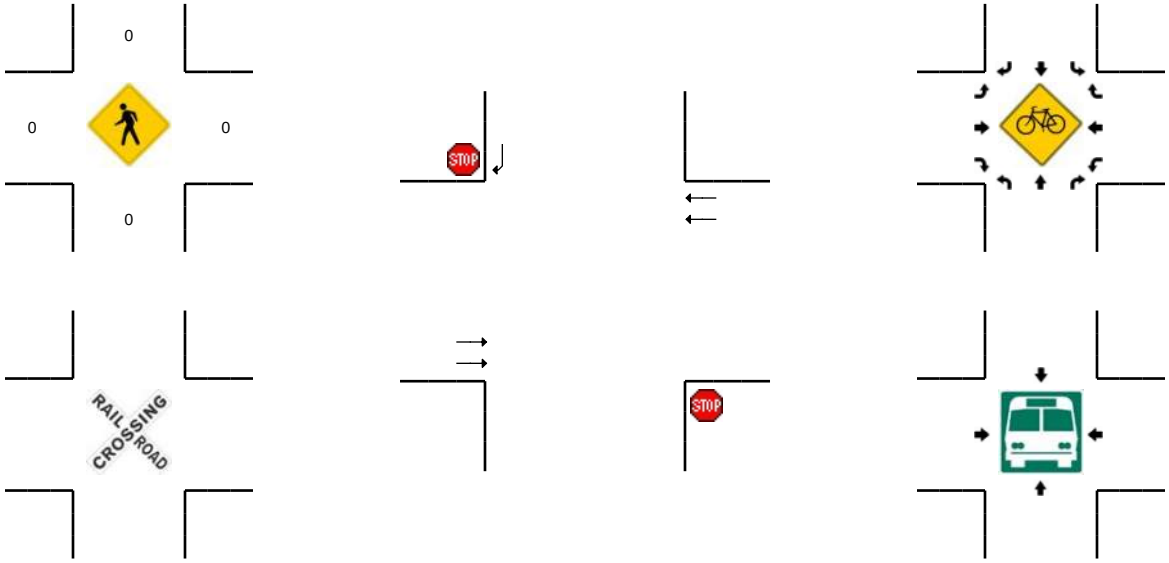
LOCATION: Costco Dwy #1 -- Northern Pacific St
CITY/STATE: Missoula, MT

QC JOB #: 10359019
DATE: 5/28/2008



Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:35 PM -- 4:50 PM





5-Min Count Period Beginning At	Costco Dwy #1 (Northbound)				Costco Dwy #1 (Southbound)				Northern Pacific St (Eastbound)				Northern Pacific St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	9	0	0	34	0	0	0	18	0	0	61	
4:05 PM	0	0	0	0	0	0	17	0	0	27	0	0	0	32	0	0	76	
4:10 PM	0	0	0	0	0	0	12	0	0	20	0	0	0	30	0	0	62	
4:15 PM	0	0	0	0	0	0	18	0	0	24	0	0	0	25	0	0	67	
4:20 PM	0	0	0	0	0	0	17	0	0	24	0	0	0	29	0	0	70	
4:25 PM	0	0	0	0	0	0	17	0	0	21	0	0	0	22	0	0	60	
4:30 PM	0	0	0	0	0	0	18	0	0	27	0	0	0	30	0	0	75	
4:35 PM	0	0	0	0	0	0	10	0	0	25	0	0	0	32	0	0	67	
4:40 PM	0	0	0	0	0	0	16	0	0	28	0	0	0	24	0	0	68	
4:45 PM	0	0	0	0	0	0	12	0	0	31	0	0	0	34	0	0	77	
4:50 PM	0	0	0	0	0	0	6	0	0	39	0	0	0	18	0	0	63	
4:55 PM	0	0	0	0	0	0	12	0	0	25	0	0	0	29	0	0	66	812
5:00 PM	0	0	0	0	0	0	16	0	0	23	0	0	0	30	0	0	69	820
5:05 PM	0	0	0	0	0	0	10	0	0	25	0	0	0	41	0	0	76	820
5:10 PM	0	0	0	0	0	0	8	0	0	24	0	0	0	38	0	0	70	828
5:15 PM	0	0	0	0	0	0	17	0	0	46	0	0	0	34	0	0	97	858
5:20 PM	0	0	0	0	0	0	9	0	0	23	0	0	0	21	0	0	53	841
5:25 PM	0	0	0	0	0	0	15	0	0	33	0	0	0	23	0	0	71	852
5:30 PM	0	0	0	0	0	0	3	0	0	33	0	0	0	26	0	0	62	839
5:35 PM	0	0	0	0	0	0	17	0	0	32	0	0	0	46	0	0	95	867
5:40 PM	0	0	0	0	0	0	15	0	0	28	0	0	0	25	0	0	68	867
5:45 PM	0	0	0	0	0	0	15	0	0	21	0	0	0	30	0	0	66	856
5:50 PM	0	0	0	0	0	0	21	0	0	19	0	0	0	38	0	0	78	871
5:55 PM	0	0	0	0	0	0	14	0	0	17	0	0	0	16	0	0	47	852

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	0	0	0	0	0	0	152	0	0	336	0	0	0	360	0	0	848
Heavy Trucks	0	0	0		0	0	4		0	0	0		0	4	0		8
Pedestrians		0				0				0				0			0
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/9/2008 2:07 PM

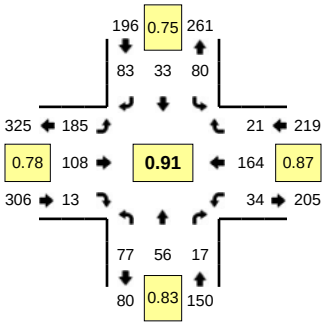
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: User-Defined

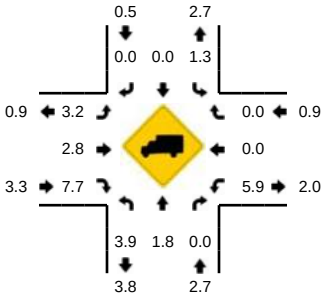
Method for determining peak hour: Total Entering Volume

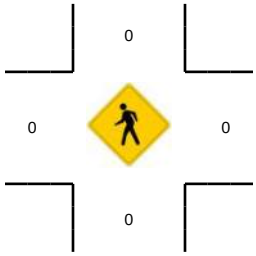
LOCATION: Costco Dwy #2 -- Northern Pacific St
CITY/STATE: Missoula, MT

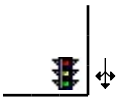
QC JOB #: 10359021
DATE: 5/28/2008

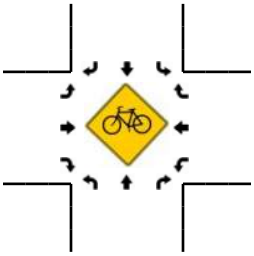


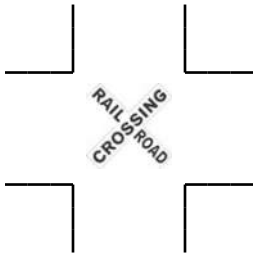
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:35 PM -- 4:50 PM

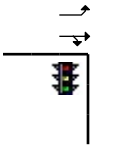


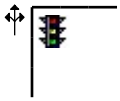


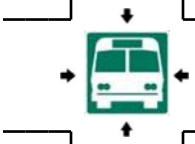












5-Min Count Period Beginning At	Costco Dwy #2 (Northbound)				Costco Dwy #2 (Southbound)				Northern Pacific St (Eastbound)				Northern Pacific St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	5	7	0	0	5	3	4	0	22	10	2	0	2	9	4	0	73	
4:05 PM	11	3	2	0	10	0	6	0	15	7	1	0	2	15	2	0	74	
4:10 PM	6	7	4	0	5	3	8	0	10	12	1	0	3	16	2	0	77	
4:15 PM	3	3	0	0	3	0	5	0	15	8	1	0	2	15	3	0	58	
4:20 PM	8	3	0	0	8	3	9	0	12	8	2	0	3	13	0	0	69	
4:25 PM	5	6	2	0	8	4	4	0	13	7	1	0	1	14	0	0	65	
4:30 PM	7	6	0	0	6	6	10	0	12	11	0	0	6	14	0	0	78	
4:35 PM	7	4	1	0	11	6	8	0	12	7	2	0	1	17	1	0	77	
4:40 PM	3	3	2	0	10	2	6	0	19	8	0	0	6	12	4	0	75	
4:45 PM	10	6	1	0	2	1	10	0	20	12	2	0	2	16	4	0	86	
4:50 PM	5	3	1	0	9	1	5	0	26	11	0	0	6	6	1	0	74	
4:55 PM	7	5	4	0	3	4	8	0	8	7	1	1	0	17	0	0	65	871
5:00 PM	4	9	1	0	1	1	6	0	9	9	1	0	1	18	1	0	61	859
5:05 PM	8	3	0	0	3	4	7	0	9	19	1	0	3	30	2	0	89	874
5:10 PM	8	3	1	0	5	1	9	0	13	10	3	0	2	22	2	0	79	876
5:15 PM	4	6	1	0	7	5	9	0	26	14	1	0	4	18	4	0	99	917
5:20 PM	5	6	0	0	6	3	4	0	15	10	2	0	3	12	3	0	69	917
5:25 PM	5	6	0	0	11	2	11	0	12	14	2	0	2	6	1	0	72	924
5:30 PM	3	3	1	0	7	4	6	0	20	21	1	0	0	18	3	0	87	933
5:35 PM	8	2	2	0	5	6	8	0	20	8	1	0	1	23	3	0	87	943
5:40 PM	7	6	3	0	6	1	5	0	18	9	2	0	5	9	3	0	74	942
5:45 PM	6	2	2	0	6	1	9	0	15	6	0	0	4	15	3	0	69	925
5:50 PM	2	8	1	0	7	2	13	0	12	6	1	0	2	21	1	0	76	927
5:55 PM	7	2	0	0	7	1	7	0	9	8	1	0	0	3	4	0	49	911

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	80	52	16	0	92	36	96	0	204	108	16	0	36	180	36	0	952
Heavy Trucks	4	0	0		4	0	0		0	0	0		4	0	0		12
Pedestrians		0				0				0				0			0
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/9/2008 2:07 PM

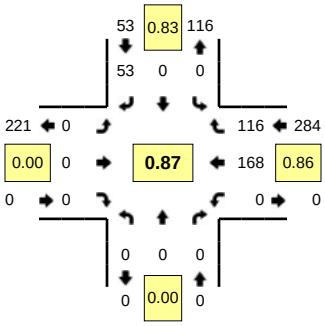
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: User-Defined

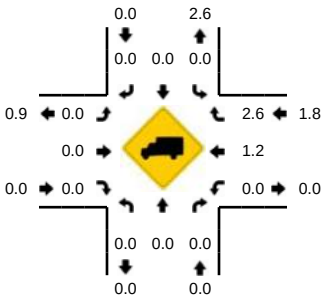
Method for determining peak hour: Total Entering Volume

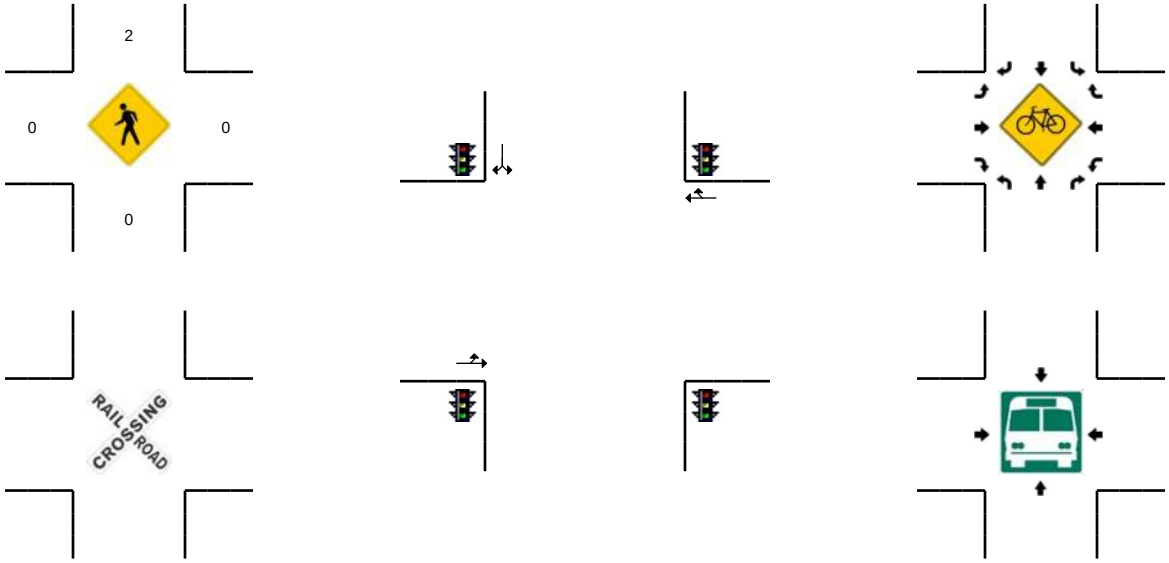
LOCATION: Costco Dwy #3 -- Northern Pacific St
CITY/STATE: Missoula, MT

QC JOB #: 10359023
DATE: 5/28/2008



Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:05 PM -- 4:20 PM





5-Min Count Period Beginning At	Costco Dwy #3 (Northbound)				Costco Dwy #3 (Southbound)				Northern Pacific St (Eastbound)				Northern Pacific St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	4	0	0	0	0	0	0	11	8	0	23	
4:05 PM	0	0	0	0	0	0	6	0	0	0	0	0	0	14	18	0	38	
4:10 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	20	9	0	31	
4:15 PM	0	0	0	0	0	0	6	0	0	0	0	0	0	12	10	0	28	
4:20 PM	0	0	0	0	0	0	4	0	0	0	0	0	0	12	11	0	27	
4:25 PM	0	0	0	0	0	0	4	0	0	0	0	0	0	11	10	0	25	
4:30 PM	0	0	0	0	0	0	7	0	0	0	0	0	0	12	11	0	30	
4:35 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	16	8	0	27	
4:40 PM	0	0	0	0	0	0	5	0	0	0	0	0	0	17	9	0	31	
4:45 PM	0	0	0	0	0	0	8	0	0	0	0	0	0	16	4	0	28	
4:50 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	16	10	0	29	
4:55 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	11	8	0	20	337
5:00 PM	0	0	0	0	0	0	4	0	0	0	0	0	0	17	7	0	28	342
5:05 PM	0	0	0	0	0	0	4	0	0	0	0	0	0	27	9	0	40	344
5:10 PM	0	0	0	0	0	0	6	0	0	0	0	0	0	21	6	0	33	346
5:15 PM	0	0	0	0	0	0	6	0	0	0	0	0	0	17	16	0	39	357
5:20 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	16	9	0	27	357
5:25 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	12	14	0	27	359
5:30 PM	0	0	0	0	0	0	5	0	0	0	0	0	0	18	9	0	32	361
5:35 PM	0	0	0	0	0	0	4	0	0	0	0	0	0	22	11	0	37	371
5:40 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	13	9	0	25	365
5:45 PM	0	0	0	0	0	0	8	0	0	0	0	0	0	14	7	0	29	366
5:50 PM	0	0	0	0	0	0	4	0	0	0	0	0	0	20	10	0	34	371
5:55 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	7	6	0	15	366

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	0	0	0	0	0	0	56	0	0	0	0	0	0	184	148	0	388
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	4	4		8
Pedestrians		0				0				0				0			0
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/9/2008 2:07 PM

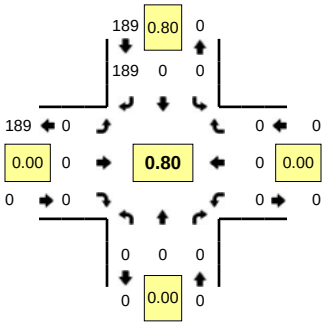
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: System Peak

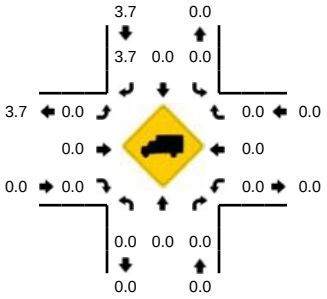
Method for determining peak hour: Total Entering Volume

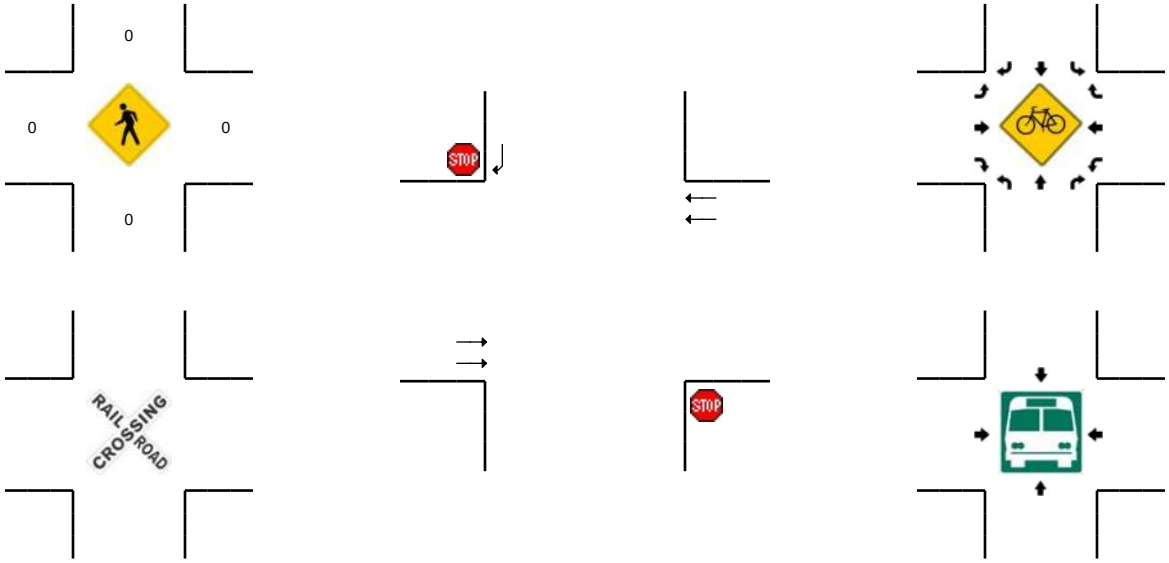
LOCATION: Costco Dwy #1 -- Northern Pacific St
CITY/STATE: Missoula, MT

QC JOB #: 10359020
DATE: 5/31/2008



Peak-Hour: 11:35 AM -- 12:35 PM
Peak 15-Min: 11:35 AM -- 11:50 AM





5-Min Count Period Beginning At	Costco Dwy #1 (Northbound)				Costco Dwy #1 (Southbound)				Northern Pacific St (Eastbound)				Northern Pacific St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:05 AM	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	10	
11:10 AM	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	7	
11:15 AM	0	0	0	0	0	0	18	0	0	0	0	0	0	0	0	0	18	
11:20 AM	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0	14	
11:25 AM	0	0	0	0	0	0	17	0	0	0	0	0	0	0	0	0	17	
11:30 AM	0	0	0	0	0	0	22	0	0	0	0	0	0	0	0	0	22	
11:35 AM	0	0	0	0	0	0	24	0	0	0	0	0	0	0	0	0	24	
11:40 AM	0	0	0	0	0	0	19	0	0	0	0	0	0	0	0	0	19	
11:45 AM	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	16	
11:50 AM	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	16	
11:55 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	174
12:00 PM	0	0	0	0	0	0	23	0	0	0	0	0	0	0	0	0	23	187
12:05 PM	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	8	185
12:10 PM	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0	14	192
12:15 PM	0	0	0	0	0	0	19	0	0	0	0	0	0	0	0	0	19	193
12:20 PM	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0	14	193
12:25 PM	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	12	188
12:30 PM	0	0	0	0	0	0	23	0	0	0	0	0	0	0	0	0	23	189
12:35 PM	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	16	181
12:40 PM	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	16	178
12:45 PM	0	0	0	0	0	0	15	0	0	0	0	0	0	0	0	0	15	177
12:50 PM	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	13	174
12:55 PM	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0	20	193
1:00 PM	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	10	180

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	0	0	0	0	0	0	236	0	0	0	0	0	0	0	0	0	236
Heavy Trucks	0	0	0		0	0	4		0	0	0		0	0	0		4
Pedestrians		0				0				0				0			0
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/9/2008 12:51 PM

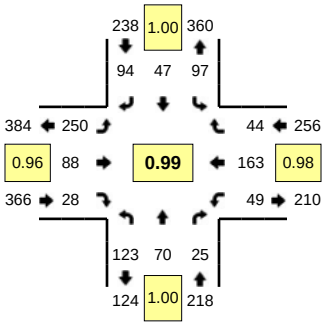
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: System Peak

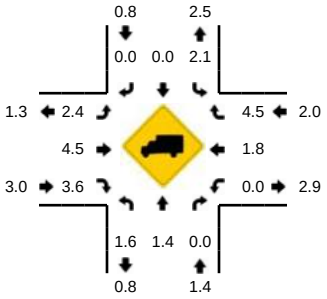
Method for determining peak hour: Total Entering Volume

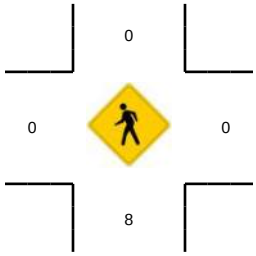
LOCATION: Costco Dwy #2 -- Northern Pacific St
CITY/STATE: Missoula, MT

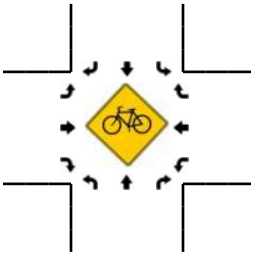
QC JOB #: 10359022
DATE: 5/31/2008

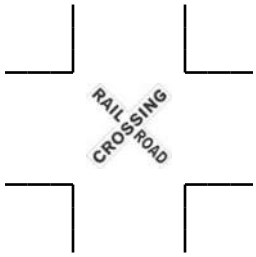


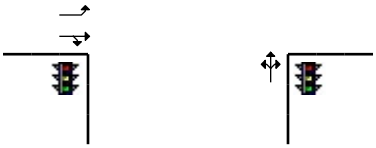
Peak-Hour: 11:35 AM -- 12:35 PM
Peak 15-Min: 11:35 AM -- 11:50 AM

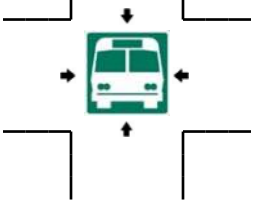












5-Min Count Period Beginning At	Costco Dwy #2 (Northbound)				Costco Dwy #2 (Southbound)				Northern Pacific St (Eastbound)				Northern Pacific St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:05 AM	10	5	2	0	6	2	6	0	19	7	0	0	2	6	5	0	70	
11:10 AM	8	8	3	0	6	3	6	0	20	10	2	1	5	12	2	0	86	
11:15 AM	6	3	2	0	6	4	8	0	22	11	1	0	3	10	2	0	78	
11:20 AM	11	10	3	0	9	9	10	0	16	9	4	1	4	15	5	0	106	
11:25 AM	10	4	2	0	5	2	4	0	27	12	1	0	5	8	4	0	84	
11:30 AM	9	5	5	0	4	1	5	0	7	8	0	0	5	8	3	0	60	
11:35 AM	6	5	2	0	8	5	9	0	24	7	2	1	6	17	4	0	96	
11:40 AM	9	6	4	0	3	6	9	0	23	7	4	0	3	16	4	0	94	
11:45 AM	10	10	2	0	6	5	8	0	16	8	3	0	4	7	4	0	83	
11:50 AM	6	10	1	0	7	8	8	0	12	12	1	0	4	18	5	0	92	
11:55 AM	16	3	3	0	7	4	6	0	17	10	1	1	7	7	0	0	82	1010
12:00 PM	13	4	1	0	14	3	10	0	14	13	4	0	4	19	4	0	103	1034
12:05 PM	13	5	3	0	7	0	6	0	18	2	4	1	3	12	5	0	79	1043
12:10 PM	14	7	1	0	10	2	7	0	26	3	1	0	0	16	4	0	91	1048
12:15 PM	8	4	3	0	7	4	7	0	23	8	1	0	5	6	2	0	78	1048
12:20 PM	6	7	0	0	11	4	7	0	17	9	3	1	6	13	7	0	91	1033
12:25 PM	10	5	2	0	11	1	10	0	36	5	3	0	4	16	3	0	106	1055
12:30 PM	12	4	3	0	6	5	7	0	20	4	1	0	3	16	2	0	83	1078
12:35 PM	6	5	0	0	4	4	4	0	26	8	1	0	4	10	4	0	76	1058
12:40 PM	14	5	3	0	3	3	6	0	19	3	7	0	1	11	2	0	77	1041
12:45 PM	5	7	1	0	5	6	9	0	16	9	3	0	9	5	3	0	78	1036
12:50 PM	4	9	1	0	8	5	10	0	18	5	2	0	1	9	2	0	74	1018
12:55 PM	8	2	2	0	5	4	12	0	15	7	4	0	2	10	3	0	74	1010
1:00 PM	11	4	3	0	11	4	9	0	17	6	2	0	3	7	0	0	77	984

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	100	84	32	0	68	64	104	0	252	88	36	4	52	160	48	0	1092
Heavy Trucks	4	0	0		0	0	0		4	8	4		0	8	0		28
Pedestrians		0				0				0				0			0
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/9/2008 12:51 PM

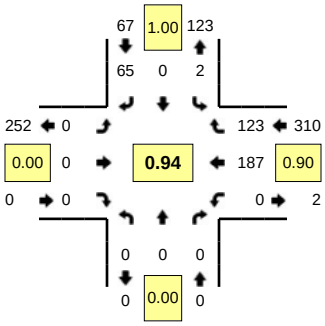
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: System Peak

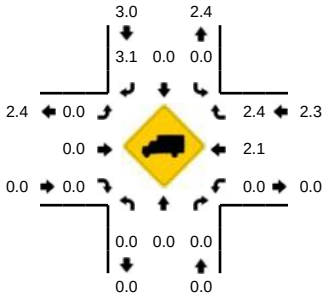
Method for determining peak hour: Total Entering Volume

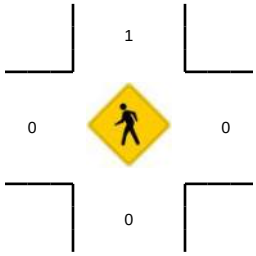
LOCATION: Costco Dwy # 3 -- Northern Pacific St
CITY/STATE: Missoula, MT

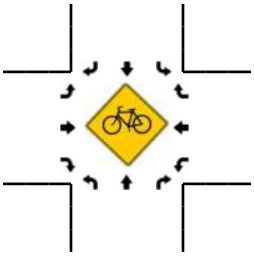
QC JOB #: 10359024
DATE: 5/31/2008

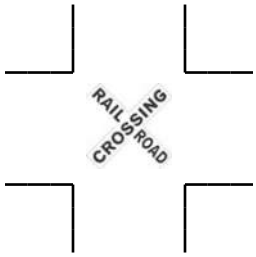


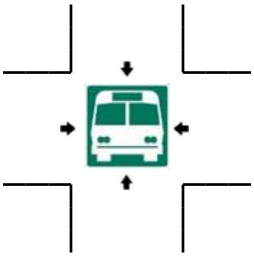
Peak-Hour: 11:35 AM -- 12:35 PM
Peak 15-Min: 11:35 AM -- 11:50 AM











5-Min Count Period Beginning At	Costco Dwy # 3 (Northbound)				Costco Dwy # 3 (Southbound)				Northern Pacific St (Eastbound)				Northern Pacific St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:05 AM	0	0	0	0	0	0	4	0	0	0	0	0	0	12	6	0	22	
11:10 AM	0	0	0	0	0	0	5	0	0	0	0	0	0	14	6	0	25	
11:15 AM	0	0	0	0	1	0	5	0	0	0	0	0	0	13	5	0	24	
11:20 AM	0	0	0	0	0	0	3	0	0	0	0	0	0	15	7	0	25	
11:25 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	15	6	0	23	
11:30 AM	0	0	0	0	0	0	3	0	0	0	0	0	0	14	6	0	23	
11:35 AM	0	0	0	0	0	0	5	0	0	0	0	0	0	21	10	0	36	
11:40 AM	0	0	0	0	0	0	5	0	0	0	0	0	0	18	12	0	35	
11:45 AM	0	0	0	0	0	0	4	0	0	0	0	0	0	11	14	0	29	
11:50 AM	0	0	0	0	0	0	6	0	0	0	0	0	0	20	8	0	34	
11:55 AM	0	0	0	0	0	0	6	0	0	0	0	0	0	10	9	0	25	322
12:00 PM	0	0	0	0	0	0	8	0	0	0	0	0	0	20	6	0	34	335
12:05 PM	0	0	0	0	0	0	4	0	0	0	0	0	0	12	12	0	28	341
12:10 PM	0	0	0	0	1	0	7	0	0	0	0	0	0	17	15	0	40	356
12:15 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	11	9	0	22	354
12:20 PM	0	0	0	0	0	0	5	0	0	0	0	0	0	18	11	0	34	363
12:25 PM	0	0	0	0	0	0	6	0	0	0	0	0	0	17	8	0	31	371
12:30 PM	0	0	0	0	1	0	7	0	0	0	0	0	0	12	9	0	29	377
12:35 PM	0	0	0	0	0	0	6	0	0	0	0	0	0	11	8	0	25	366
12:40 PM	0	0	0	0	1	0	4	0	0	0	0	0	0	11	7	0	23	354
12:45 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	12	4	0	19	344
12:50 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	13	11	0	26	336
12:55 PM	0	0	0	0	1	0	4	0	0	0	0	0	0	10	7	0	22	333
1:00 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	8	7	0	18	317

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	0	0	0	0	0	0	56	0	0	0	0	0	0	200	144	0	400
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	8	0		8
Pedestrians		0				0				0				0			0
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/9/2008 12:51 PM

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

COSTCO WHOLESALE TRIP GENERATION DATA COLLECTION
MISSOULA, MONTANA

Location: MISSOULA, MT **Name of Surveyor:** JUSTIN HIGGINS
Date of Survey: 5/28/08 **Time Period:** 4-6 PM

Approach patron and ask: "Do you mind if I ask you a few questions regarding your visit to Costco Wholesale today?"

Time of Day (Just note every ½ hour)	Q1. Where did you begin your trip immediately prior to stopping at this warehouse?	Q2. Will you be using the Costco gas station on this trip?	Q3. From Costco, will you go directly back to where you began your trip?	Q4. Where will your next stop be?	Q5. Would you have driven by this site on Reserve St., England Blvd., or Great Northern Ave. even if you had not stopped here now?	Q6. If this warehouse was not here, what is the closest intersection you would have traveled through?	
	A. Home (B) Work C. Other retail D. Other (specify)	A. Yes B. No	A. Yes (skip remaining questions) B. No (go to Q4)	A. Home B. Work C. Other retail D. Other (specify)	A. Yes (skip remaining questions) B. No (go to Q6)	(Point out on attached Map)	
4:00	B	A	A				Primary
	D. Vet office	B	B	C Walmart	A		Pass-By
	A	A	A				Primary
4:30 PM	A. Butte, MT	B	A				Primary
	B	B	B	B	B	US 93	Diverted
	B	A	B	A	A		Pass
	B	B	B	C	B	Broadway	Diverted
	B	B	B	A	A		Pass
	A	B	A				Primary
	A	B	B	D. Bank	A		Pass
	A	B	A				Primary
	A	B	A				Primary
	D. Assisted Living	A	B	A	A		Pass
	B	B	B	A	B	Palmer St and Reserve	Diverted
	A	B	A				Primary

Internal: 20

Primary: 14
Pass-By: 32
Diverted: 22
68

COSTCO WHOLESALE TRIP GENERATION DATA COLLECTION
MISSOULA, MONTANA

Location: Missoula, MT **Name of Surveyor:** JUSTIN HIGGINS
Date of Survey: 5/28/08 **Time Period:** 4-6 pm

Approach patron and ask: "Do you mind if I ask you a few questions regarding your visit to Costco Wholesale today?"

Time of Day (Just note every ½ hour)	Q1. Where did you begin your trip immediately prior to stopping at this warehouse?	Q2. Will you be using the Costco gas station on this trip?	Q3. From Costco, will you go directly back to where you began your trip?	Q4. Where will your next stop be?	Q5. Would you have driven by this site on Reserve St., England Blvd., or Great Northern Ave. even if you had not stopped here now?	Q6. If this warehouse was not here, what is the closest intersection you would have traveled through?	
	A. Home B. Work C. Other retail D. Other (specify)	A. Yes B. No	A. Yes (skip remaining questions) B. No (go to Q4)	A. Home B. Work C. Other retail D. Other (specify)	A. Yes (skip remaining questions) B. No (go to Q6)	(Point out on attached Map)	
	A Hamilton	A	B	C.	A		Pass
	A	B	B	C. Lowes	A		Pass
	B	B	B	A	B	Hwy 200	Diverted
	A	B	A				Primary
	B	B	B	C	B	Broadway to	Palmer Diverted
	A	B	B	C. Walmart			Pass
	D. Library	A	B	A	A		Pass
	A. Plains, MT	B	A				Primary
	B	B	B	B	A		Pass
	A	A	B	D Rosla	B	Broadway	Diverted
	B	B	B	A	A		Pass
	B	B	B	A	B	Broadway	Diverted
	D. Clarkston, WA	A	B	D. Madison, WI	A		Pass
5:00 PM	A	A	B	C. Other retail	B	Broadway	Diverted
	C. Other retail	B	B	D. Restaurant	A		Pass

COSTCO WHOLESALE TRIP GENERATION DATA COLLECTION
MISSOULA, MONTANA

Location: Missoula, MT **Name of Surveyor:** JUSTIN HIGGINS
Date of Survey: 5/28/08 **Time Period:** 4-6PM

Approach patron and ask: "Do you mind if I ask you a few questions regarding your visit to Costco Wholesale today?"

Time of Day (Just note every ½ hour)	Q1. Where did you begin your trip immediately prior to stopping at this warehouse?	Q2. Will you be using the Costco gas station on this trip?	Q3. From Costco, will you go directly back to where you began your trip?	Q4. Where will your next stop be?	Q5. Would you have driven by this site on Reserve St., England Blvd., or Great Northern Ave. even if you had not stopped here now?	Q6. If this warehouse was not here, what is the closest intersection you would have traveled through?	
	A. Home B. Work C. Other retail D. Other (specify)	A. Yes B. No	A. Yes (skip remaining questions) B. No (go to Q4)	A. Home B. Work C. Other retail D. Other (specify)	A. Yes (skip remaining questions) B. No (go to Q6)	(Point out on attached Map)	
	Kennewick, WA	B	B	A	A		Pass
	B	B	B	A	B	Russell / S. Higgins	Diverted
	B	B	B	A	B	International / Airway	Diver
	B A	A	A				Primary
	B	B	B	A	A		Pass
	C.	B	B	A	A		Pass
	C.	B	B	D. Gymnastics	B	Broadway	Diverted
	A	B	A				Primary
	Chiropractor	B	B	A	B	US 93 South	Diverted
	D. Quality Wholesale	A	B	D. Haircut	A		Pass
	D. Great Falls MT	A	B	A Polson, MT	A		Pass
	Doctors OFFICE	B	B	A	B B	Broadway	Diverted
	A	B	A				Primary
	C.	A	B	A	A		Pass
	C. Dollar Store	B	B	A	A		Pass

COSTCO WHOLESALE TRIP GENERATION DATA COLLECTION
MISSOULA, MONTANA

Location: Missoula, MT **Name of Surveyor:** JUSTIN HIGGINS
Date of Survey: 5/28/08 **Time Period:** 4-6PM

Approach patron and ask: "Do you mind if I ask you a few questions regarding your visit to Costco Wholesale today?"

Time of Day (Just note every ½ hour)	Q1. Where did you begin your trip immediately prior to stopping at this warehouse?	Q2. Will you be using the Costco gas station on this trip?	Q3. From Costco, will you go directly back to where you began your trip?	Q4. Where will your next stop be?	Q5. Would you have driven by this site on Reserve St., England Blvd., or Great Northern Ave. even if you had not stopped here now?	Q6. If this warehouse was not here, what is the closest intersection you would have traveled through?	
	A. Home B. Work C. Other retail D. Other (specify)	A. Yes B. No	A. Yes (skip remaining questions) B. No (go to Q4)	A. Home B. Work C. Other retail D. Other (specify)	A. Yes (skip remaining questions) B. No (go to Q6)	(Point out on attached Map)	
5:30 pm	D. Soccer Practice	A	B	A	A		Pass
	B	B	B	A	A		Pass
	B	B	B	A	B	Broadway	Diverted
	A	A	B	C.	A		Pass
	A	B	B	D. Storage unit	A		Pass
	C. Fork lift	B	B	A	B	Hwy 10	Diverted
	D. Daughters House Clinton, MT	A	B	A	B	Interstate 90	Diverted
	A	B	B	Daughters school	B	US 93	Diverted
	A	A	A				Primary
	B	A	B	A	B	I-90	Diverted
	Doctors office	B	B	A	A		Pass
	B	A	B	A	B	Broadway	Diverted
	D. Pizza Hut	B	B	A	A		Pass
	A	B	B	D. Restaurant	B	Broadway	Diverted

(5)

COSTCO WHOLESALE TRIP GENERATION DATA COLLECTION
MISSOULA, MONTANA

Location: Missoula, MT **Name of Surveyor:** JUSTIN HIGGINS
Date of Survey: 5/28/08 **Time Period:** 4-6 PM

Approach patron and ask: "Do you mind if I ask you a few questions regarding your visit to Costco Wholesale today?"

Time of Day (Just note every ½ hour)	Q1. Where did you begin your trip immediately prior to stopping at this warehouse?	Q2. Will you be using the Costco gas station on this trip?	Q3. From Costco, will you go directly back to where you began your trip?	Q4. Where will your next stop be?	Q5. Would you have driven by this site on Reserve St., England Blvd., or Great Northern Ave. even if you had not stopped here now?	Q6. If this warehouse was not here, what is the closest intersection you would have traveled through?	
	A. Home B. Work C. Other retail D. Other (specify)	A. Yes B. No	A. Yes (skip remaining questions) B. No (go to Q4)	A. Home B. Work C. Other retail D. Other (specify)	A. Yes (skip remaining questions) B. No (go to Q6)	(Point out on attached Map)	
	C.	B	B	A	B A		Pass
	B	B	B	A	A		Pass
	Quality Supply	B	B	A	B	FLYNN	Diverted
	B	B	B	A	A		Pass
	Outback	B	B	A	A		Pass
	B	B	B	A	A		Pass
	B	B	B	D. BAR	A		Pass
	B. Mother Trucker	B	B	C.	B	Broadway	Diverted
	A	B	A	.			Primary
	A. Plains, MT	A	B	A			

COSTCO WHOLESALE TRIP GENERATION DATA COLLECTION
MISSOULA, MONTANA

Location: Missoula, MT **Name of Surveyor:** JUSTIN HIGGINS
Date of Survey: 5/31/08 **Time Period:** 11-2 PM

Approach patron and ask: "Do you mind if I ask you a few questions regarding your visit to Costco Wholesale today?"

Time of Day (Just note every ½ hour)	Q1. Where did you begin your trip immediately prior to stopping at this warehouse?	Q2. Will you be using the Costco gas station on this trip?	Q3. From Costco, will you go directly back to where you began your trip?	Q4. Where will your next stop be?	Q5. Would you have driven by this site on Reserve St., England Blvd., or Great Northern Ave. even if you had not stopped here now?	Q6. If this warehouse was not here, what is the closest intersection you would have traveled through?	
	A. Home B. Work C. Other retail D. Other (specify)	A. Yes B. No	A. Yes (skip remaining questions) B. No (go to Q4)	A. Home B. Work C. Other retail D. Other (specify)	A. Yes (skip remaining questions) B. No (go to Q6)	(Point out on attached Map)	
11:00	C. Farmers Market	B	B	C. Best Buy	B	Palmer/Reserve	Diverted
	A	A	B	C. Lowes	B	Orange St. I-12	Diverted
	C. Farmers	B	B	A	B	US 93 Broadway/Footh	Diverted
	D. Bank Market	B	B	A	A		Pass-By
	Nursery	B	B. ~~Brooks~~	Nursery	B	Broadway	Diverted
	Montana Club	A	B	C. Bensons	A		Pass
	A	B	A				Primary
11:30	Lowes	B	B	Parts Store	B	Reserve/US-93	Diverted
	C. Health Food	A	B	D. Saint Regis ~~Hotel~~	A		Pass
	A	B	B	Safeway	B	US. 93/Reserve	Diverted
	C. Mall	A	B	A	B	US 93/Reserve	Diverted
	A	B	A				Primary
	C. FARMERS MARKET	A	B	A	B A		Pass
	KOA	B	B	Camping Kelly Road	A		Pass
	Baseball game	B	B	A	A		Pass

Internal: 28

Primary: 28
Pass By: 43
Diverted: 38
109 total

(2)

COSTCO WHOLESALE TRIP GENERATION DATA COLLECTION
MISSOULA, MONTANA

Location: Missoula, MT **Name of Surveyor:** JUSTIN HIGGINS
Date of Survey: 5/31/08 **Time Period:** 11-2

Approach patron and ask: "Do you mind if I ask you a few questions regarding your visit to Costco Wholesale today?"

Time of Day (Just note every ½ hour)	Q1. Where did you begin your trip immediately prior to stopping at this warehouse?	Q2. Will you be using the Costco gas station on this trip?	Q3. From Costco, will you go directly back to where you began your trip?	Q4. Where will your next stop be?	Q5. Would you have driven by this site on Reserve St., England Blvd., or Great Northern Ave. even if you had not stopped here now?	Q6. If this warehouse was not here, what is the closest intersection you would have traveled through?	
	A. Home B. Work C. Other retail D. Other (specify)	A. Yes B. No	A. Yes (skip remaining questions) B. No (go to Q4)	A. Home B. Work C. Other retail D. Other (specify)	A. Yes (skip remaining questions) B. No (go to Q6)	(Point out on attached Map)	
	Hogieville	A	B	A	B	Expressway / Reserve	Diverted
	Walgreens	B	B	A	B	US-93 / Reserve	Diverted
	A	A	B	C. Walmart	A		Pass
	Farmers Market	B	B	A	B	Broadway / Higgins	Diverted
	A	A	A				Primary
	A	B	A				Primary
	Best Buy	B	B	A	A		Pass
12:00	Lowes	B	B	A	B	Palmer / Northern	Diverted
	Lowes	B	B	A	B	Palmer / Northern Pacific	Diverted
	A.	B	B	Drift Biking	B	Palmer / Northern Pacific	Diverted
	A Coffee	B	B	A	B	Palmer / Northern Pacific	Diverted
	A.	A	A				
	A	B	B. [redacted] — Kettle House		B	Reserve / 39th	Diverted
	Bakery	B	B [redacted]	Walmart Rice	A		Pass
	Quality Supply	B	B	A	A		Pass

(3)

COSTCO WHOLESALE TRIP GENERATION DATA COLLECTION
MISSOULA, MONTANA

Location: Missoula, MT **Name of Surveyor:** JUSTIN HIGGINS
Date of Survey: 5/31/08 **Time Period:** 11-2pm

Approach patron and ask: "Do you mind if I ask you a few questions regarding your visit to Costco Wholesale today?"

Time of Day (Just note every ½ hour)	Q1. Where did you begin your trip immediately prior to stopping at this warehouse?	Q2. Will you be using the Costco gas station on this trip?	Q3. From Costco, will you go directly back to where you began your trip?	Q4. Where will your next stop be?	Q5. Would you have driven by this site on Reserve St., England Blvd., or Great Northern Ave. even if you had not stopped here now?	Q6. If this warehouse was not here, what is the closest intersection you would have traveled through?	
	A. Home B. Work C. Other retail D. Other (specify)	A. Yes B. No	A. Yes (skip remaining questions) B. No (go to Q4)	A. Home B. Work C. Other retail D. Other (specify)	A. Yes (skip remaining questions) B. No (go to Q6)	(Point out on attached Map)	
	Walmart	B	B	A	B	Palmer / Russell	Diverted
	Lowes	B	B	Friend's House	B	Russell / Broadway	Diverted
	Great Falls, MT	A	B Thompson Falls →		B A		Pass
	A	B	A				Primary
	A LoLo	B	A				Primary
	A Kalispell	B	B	C.	A		Pass
	Lowes	B	B	A	A		Pass
	A	B	A				Primary
	A	A	A				Primary
	Post office	B	B	Lunch	B	Brooks 115-93	Diverted
	A	B	B	Barnes & Noble	B	Broadway	Diverted
	Farmers Market	B	B	A	B	Broadway / orange	Diverted
	Lunch	B	B	A	A		Pass
	Quality Supply	B	B	A	B	Broadway / Russell	Diverted
12:30	Quality Supply	A	B	Walmart	B	Broadway / Russell	Diverted

COSTCO WHOLESALE TRIP GENERATION DATA COLLECTION
MISSOULA, MONTANA

Location: MISSOULA, MT **Name of Surveyor:** JUSTIN HIGGINS
Date of Survey: 5/31/08 **Time Period:** 11-2 PM

Approach patron and ask: "Do you mind if I ask you a few questions regarding your visit to Costco Wholesale today?"

Time of Day (Just note every ½ hour)	Q1. Where did you begin your trip immediately prior to stopping at this warehouse?	Q2. Will you be using the Costco gas station on this trip?	Q3. From Costco, will you go directly back to where you began your trip?	Q4. Where will your next stop be?	Q5. Would you have driven by this site on Reserve St., England Blvd., or Great Northern Ave. even if you had not stopped here now?	Q6. If this warehouse was not here, what is the closest intersection you would have traveled through?	
	A. Home B. Work C. Other retail D. Other (specify)	A. Yes B. No	A. Yes (skip remaining questions) B. No (go to Q4)	A. Home B. Work C. Other retail D. Other (specify)	A. Yes (skip remaining questions) B. No (go to Q6)	(Point out on attached Map)	
	Walmart	B	B	A	B	Mullen / Reserve	Diverted
	Dance studio	B	B A				Primary
	A	B	A				Primary
	A	B	A				Primary
	Sears	B	B	C. Other stores	A		Pass
	A.	A.	B	Home Depot	A		Pass
	Lookout Pass	B	B	Dillon	A		Pass
	C. Target	A	B.	Safeway	B	Mullen / Reserve	Diverted
	Husband's Work	B	B	Post office	A		Pass
	A.	B	A				Primary
	A Sula, MT.	B	B	Walmart	A		Pass
	Barnes & Noble	B.	B	A.	A		Pass
	Target	B.	B	Wendys	A		Pass
	A.	B.	A.				Primary
	A	A.	A.				Primary

(5)

COSTCO WHOLESALE TRIP GENERATION DATA COLLECTION
MISSOULA, MONTANA

Location: MISSOULA, MT **Name of Surveyor:** JUSTIN HIGGINS
Date of Survey: 5/31/08 **Time Period:** 11-2PM

Approach patron and ask: "Do you mind if I ask you a few questions regarding your visit to Costco Wholesale today?"

Time of Day (Just note every ½ hour)	Q1. Where did you begin your trip immediately prior to stopping at this warehouse?	Q2. Will you be using the Costco gas station on this trip?	Q3. From Costco, will you go directly back to where you began your trip?	Q4. Where will your next stop be?	Q5. Would you have driven by this site on Reserve St., England Blvd., or Great Northern Ave. even if you had not stopped here now?	Q6. If this warehouse was not here, what is the closest intersection you would have traveled through?	
	A. Home B. Work C. Other retail D. Other (specify)	A. Yes B. No	A. Yes (skip remaining questions) B. No (go to Q4)	A. Home B. Work C. Other retail D. Other (specify)	A. Yes (skip remaining questions) B. No (go to Q6)	(Point out on attached Map)	
	Walmart	B.	B	A.	A.		Pass
	Farmers Market	B	B	A.	A.		Pass
	D. Yard sales	B.	B.	A.	B.	Broadway / Russell	Diver
	Haircut	B.	B	A.	A.		Pass
	Lunch	B	B	A.	B.	South and Reserve	Divert
	A	B.	B	Walmart	A.		Pass
	A.	B.	B.	A.	B	Reserve / Brooks	Diverted
1:00	Church	A.	~~Store~~ B.	GFS.	A		Pass
	A. Saint	B.	A.				Primary
	A	A.	A.				Primary
	Mall	B.	B.	Walmart	B.	Mullen / Reserve	Diverted
	Lowes	A.	B.	A	A		Pass
	A	A	A. B	Lowes	A.		Pass
	A.	B	B	Home Depot	A.		Pass
	Taco Del Sol	B.	B	Pet Smart	A.		Pass

COSTCO WHOLESALE TRIP GENERATION DATA COLLECTION
MISSOULA, MONTANA

Location: MISSOULA, MT Name of Surveyor: JUSTIN HIGGINS
Date of Survey: 5/31/08 Time Period: 11-2 PM

Approach patron and ask: "Do you mind if I ask you a few questions regarding your visit to Costco Wholesale today?"

Time of Day (Just note every ½ hour)	Q1. Where did you begin your trip immediately prior to stopping at this warehouse?	Q2. Will you be using the Costco gas station on this trip?	Q3. From Costco, will you go directly back to where you began your trip?	Q4. Where will your next stop be?	Q5. Would you have driven by this site on Reserve St., England Blvd., or Great Northern Ave. even if you had not stopped here now?	Q6. If this warehouse was not here, what is the closest intersection you would have traveled through?	
	A. Home B. Work C. Other retail D. Other (specify)	A. Yes B. No	A. Yes (skip remaining questions) B. No (go to Q4)	A. Home B. Work C. Other retail D. Other (specify)	A. Yes (skip remaining questions) B. No (go to Q6)	(Point out on attached Map)	
	Lowes	B.	B	A.	A.		Pass
	A. Sonly	A.	B.	Tri Cities	A.		Pass
	A.	A.	B. A.				Primary
	A.	B.	A.				Primary
	Brooks Street Inn	B	B.	Park	A		Pass
	Barbershop	B.	B.	Grandma	A.		Pass
	A.	B.	A.				Primary
	A.	B.	B.	ICE CREAM	B.	Broadway / Orange	Diverted
1:30	Sportsman Warehouse	B.	B.	A.	B.	3rd / Reserve	Diverted
	A	A.	A.				Primary
	A. Rattlesnake	B.	B A.				Primary
	A.	B.	A.				Primary
	A.	B.	A.				Primary
	A.	B.	B	Walmart	B	US-93 / Reserve	Diverted
	A.	B.	Sta B.	Store	A.		Pass

COSTCO WHOLESALE TRIP GENERATION DATA COLLECTION
MISSOULA, MONTANA

Location: Missoula, MT **Name of Surveyor:** Justin Higgins
Date of Survey: 5/31/08 **Time Period:** 11-2pm

Approach patron and ask: "Do you mind if I ask you a few questions regarding your visit to Costco Wholesale today?"

Time of Day (Just note every ½ hour)	Q1. Where did you begin your trip immediately prior to stopping at this warehouse?	Q2. Will you be using the Costco gas station on this trip?	Q3. From Costco, will you go directly back to where you began your trip?	Q4. Where will your next stop be?	Q5. Would you have driven by this site on Reserve St., England Blvd., or Great Northern Ave. even if you had not stopped here now?	Q6. If this warehouse was not here, what is the closest intersection you would have traveled through?	
	A. Home B. Work C. Other retail D. Other (specify)	A. Yes B. No	A. Yes (skip remaining questions) B. No (go to Q4)	A. Home B. Work C. Other retail D. Other (specify)	A. Yes (skip remaining questions) B. No (go to Q6)	(Point out on attached Map)	
	C. Lowes	A.	B	A.	B	Broadway/Mullen	Diverted
	Ross	B.	B.	Walmart	A		Pass
	Home Depot	B.	B.	G Fudruckers	A.		Pass
	A.	B.	B A.				Primary
	A.	B	B	C. Lowes	B.	Brooks/Reserve	Diverted
	Sears	B.	B.	A.	A.		Pass
	Lunch	A.	B	A.	B.	Mullen/Reserve	Diverted
	Arbys	B.	B.	A.	A.		Pass
	A.	B	A.				Primary
	A.	B.	B.	Walmart	B.		Pass
	A.	B.	B.	B. Habitat for Humanity	A.		Pass
	A.	B A.	A.				Primary
	Yard Sales	B	B.	C ?	A.		Pass
	A.	A.	B.	Deer Lodge	B.	I-90	Diverted
	Park fishing	A.	B	A.	B.	Broadway/	Diverted

(8)

COSTCO WHOLESALE TRIP GENERATION DATA COLLECTION
MISSOULA, MONTANA

Location: MISSOULA, MT **Name of Surveyor:** JUSTIN HIGGINS
Date of Survey: 5/31/08 **Time Period:** 11-2 PM

Approach patron and ask: "Do you mind if I ask you a few questions regarding your visit to Costco Wholesale today?"

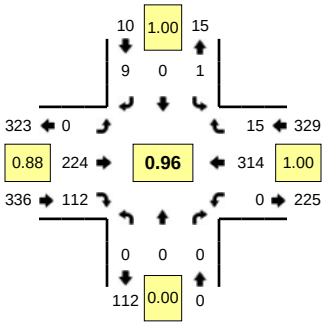
Time of Day (Just note every ½ hour)	Q1. Where did you begin your trip immediately prior to stopping at this warehouse?	Q2. Will you be using the Costco gas station on this trip?	Q3. From Costco, will you go directly back to where you began your trip?	Q4. Where will your next stop be?	Q5. Would you have driven by this site on Reserve St., England Blvd., or Great Northern Ave. even if you had not stopped here now?	Q6. If this warehouse was not here, what is the closest intersection you would have traveled through?
	A. Home B. Work C. Other retail D. Other (specify)	A. Yes B. No	A. Yes (skip remaining questions) B. No (go to Q4)	A. Home B. Work C. Other retail D. Other (specify)	A. Yes (skip remaining questions) B. No (go to Q6)	(Point out on attached Map)
	Library	B.	B.	A.	B	Broadway / Palmer Diverted
	A.	B.	B.	Lowes / Home Depot	B.	Reserve / American Way Diverted
	A.	B.	B.	Walmart	A.	Pass
	A.	A.	A.			Primary

Type of peak hour being reported: System Peak

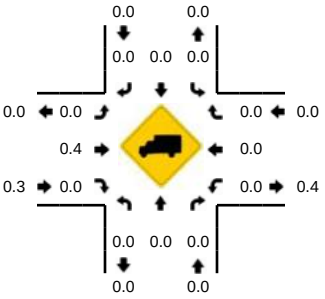
Method for determining peak hour: Total Entering Volume

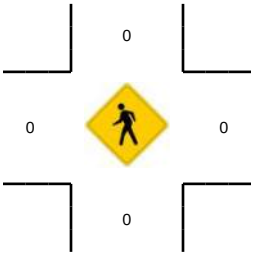
LOCATION: Costco Gas Station -- Killdeer Ave SE
CITY/STATE: Albany, OR

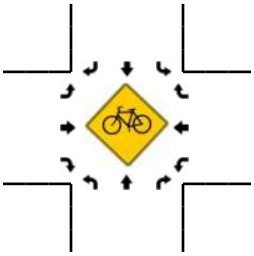
QC JOB #: 10400801
DATE: 12/9/2008

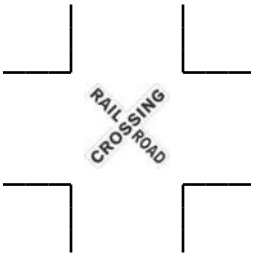


Peak-Hour: 4:05 PM -- 5:05 PM
Peak 15-Min: 4:05 PM -- 4:20 PM









5-Min Count Period Beginning At	Costco Gas Station (Northbound)				Costco Gas Station (Southbound)				Killdeer Ave SE (Eastbound)				Killdeer Ave SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	1	0	0	21	9	0	0	22	0	0	53	
4:05 PM	0	0	0	0	0	0	0	0	0	17	11	0	0	27	1	0	56	
4:10 PM	0	0	0	0	0	0	1	0	0	26	12	0	0	26	1	0	66	
4:15 PM	0	0	0	0	0	0	0	0	0	19	10	0	0	23	2	0	54	
4:20 PM	0	0	0	0	0	0	1	0	0	20	9	0	0	22	1	0	53	
4:25 PM	0	0	0	0	0	0	0	0	0	14	8	0	0	28	3	0	53	
4:30 PM	0	0	0	0	1	0	2	0	0	21	6	0	0	23	2	0	55	
4:35 PM	0	0	0	0	0	0	1	0	0	29	9	0	0	22	3	0	64	
4:40 PM	0	0	0	0	0	0	1	0	0	20	14	0	0	26	0	0	61	
4:45 PM	0	0	0	0	0	0	1	0	0	16	5	0	0	26	1	0	49	
4:50 PM	0	0	0	0	0	0	1	0	0	12	9	0	0	26	0	0	48	
4:55 PM	0	0	0	0	0	0	0	0	0	9	5	0	0	31	0	0	45	657
5:00 PM	0	0	0	0	0	0	1	0	0	21	14	0	0	34	1	0	71	675
5:05 PM	0	0	0	0	0	0	1	0	0	13	5	0	0	20	0	0	39	658
5:10 PM	0	0	0	0	0	0	0	0	0	21	17	0	0	13	1	0	52	644
5:15 PM	0	0	0	0	0	0	0	0	0	28	7	0	0	21	1	0	57	647
5:20 PM	0	0	0	0	0	0	0	0	0	16	3	0	0	25	1	0	45	639
5:25 PM	0	0	0	0	0	0	0	0	0	13	12	0	0	16	2	0	43	629
5:30 PM	0	0	0	0	0	0	0	0	0	24	10	0	0	23	0	0	57	631
5:35 PM	0	0	0	0	0	0	1	0	0	17	11	0	0	35	1	0	65	632
5:40 PM	0	0	0	0	0	0	0	0	0	22	9	0	0	32	2	0	65	636
5:45 PM	0	0	0	0	0	1	0	0	0	30	4	0	0	30	4	0	69	656
5:50 PM	0	0	0	0	0	0	1	0	0	20	8	0	0	20	1	0	50	658
5:55 PM	0	0	0	0	0	1	0	0	0	16	11	0	0	20	0	0	48	661

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	0	0	0	0	0	0	4	0	0	248	132	0	0	304	16	0	704
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/10/2008 1:11 PM

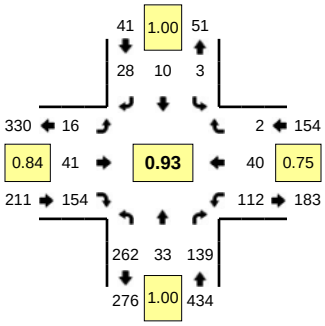
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: System Peak

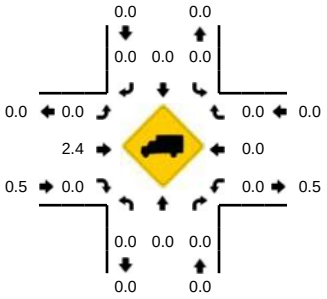
Method for determining peak hour: Total Entering Volume

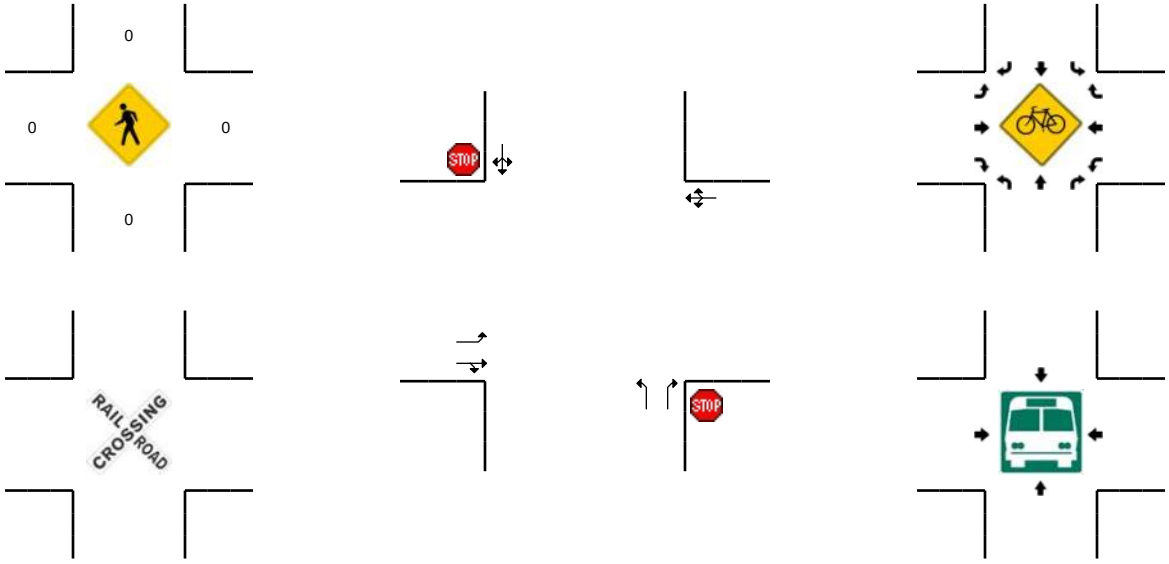
LOCATION: Costco West Driveway -- Killdeer Ave SE
CITY/STATE: Albany, OR

QC JOB #: 10400802
DATE: 12/9/2008



Peak-Hour: 4:05 PM -- 5:05 PM
Peak 15-Min: 4:05 PM -- 4:20 PM





5-Min Count Period Beginning At	Costco West Driveway (Northbound)				Costco West Driveway (Southbound)				Killdeer Ave SE (Eastbound)				Killdeer Ave SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	18	3	8	0	1	0	0	0	4	6	9	0	11	2	0	0	62	
4:05 PM	21	1	17	0	0	0	0	0	3	2	14	0	15	6	2	0	81	
4:10 PM	19	9	10	0	0	1	2	0	2	5	18	0	13	5	0	0	84	
4:15 PM	16	3	8	0	0	1	4	0	2	4	13	0	6	4	0	0	61	
4:20 PM	22	2	13	0	0	1	2	0	2	5	13	0	9	2	0	0	71	
4:25 PM	22	5	11	0	0	2	4	0	1	6	7	0	5	2	0	0	65	
4:30 PM	23	4	12	0	0	0	5	0	2	3	17	0	9	1	0	0	76	
4:35 PM	23	1	13	0	1	2	4	0	1	5	14	0	8	3	0	0	75	
4:40 PM	22	0	9	0	0	0	1	0	2	4	13	0	7	0	0	0	58	
4:45 PM	22	4	13	0	1	1	2	0	1	3	13	0	7	5	0	0	72	
4:50 PM	23	1	10	0	0	0	1	0	0	3	8	0	11	5	0	0	62	
4:55 PM	24	2	9	0	0	1	1	0	0	1	8	0	12	3	0	0	61	828
5:00 PM	25	1	14	0	1	1	2	0	0	0	16	0	10	4	0	0	74	840
5:05 PM	18	3	8	0	0	1	4	0	0	3	15	0	12	6	0	0	70	829
5:10 PM	9	2	12	0	0	0	1	0	0	4	14	0	6	2	1	0	51	796
5:15 PM	18	3	8	0	0	2	1	0	2	11	16	0	4	5	0	0	70	805
5:20 PM	24	4	11	0	0	1	2	0	0	3	15	0	13	1	0	0	74	808
5:25 PM	15	3	8	0	0	0	1	0	1	2	8	0	8	2	0	0	48	791
5:30 PM	21	0	12	0	0	1	1	0	1	6	19	0	9	3	0	0	73	788
5:35 PM	29	1	11	0	0	0	3	0	2	3	11	0	8	5	0	0	73	786
5:40 PM	22	4	11	0	0	1	2	0	1	1	20	0	8	6	0	0	76	804
5:45 PM	25	4	12	0	1	1	2	0	0	6	19	0	5	4	1	0	80	812
5:50 PM	18	4	5	0	0	1	3	0	1	6	15	0	4	1	1	0	59	809
5:55 PM	21	4	6	0	0	0	0	0	1	3	11	0	9	2	0	0	57	805

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	224	52	140	0	0	8	24	0	28	44	180	0	136	60	8	0	904
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/10/2008 1:11 PM

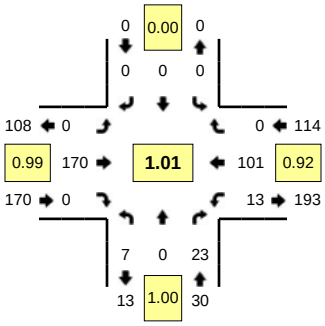
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: System Peak

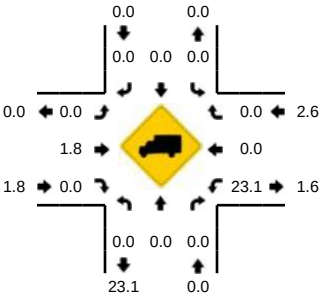
Method for determining peak hour: Total Entering Volume

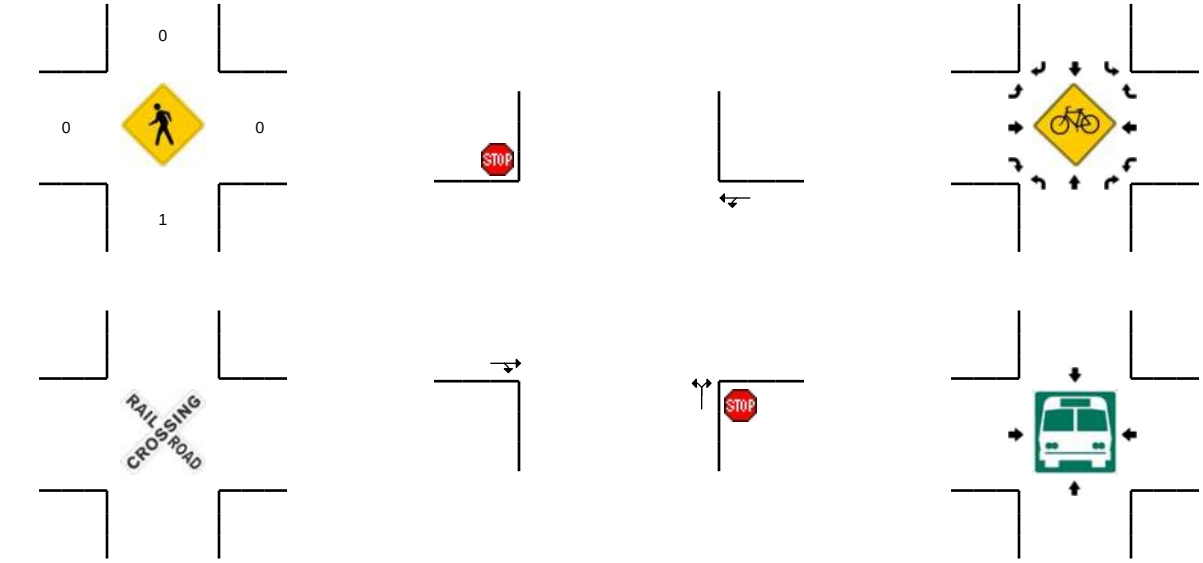
LOCATION: Costco East Driveway -- Killdeer Ave SE
CITY/STATE: Albany, OR

QC JOB #: 10400803
DATE: 12/9/2008



Peak-Hour: 4:05 PM -- 5:05 PM
Peak 15-Min: 4:05 PM -- 4:20 PM





5-Min Count Period Beginning At	Costco East Driveway (Northbound)				Costco East Driveway (Southbound)				Killdeer Ave SE (Eastbound)				Killdeer Ave SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	4	0	0	0	0	0	0	10	0	0	2	8	0	0	24	
4:05 PM	0	0	1	0	0	0	0	0	0	18	0	0	0	11	0	0	30	
4:10 PM	0	0	0	0	0	0	0	0	0	15	0	0	2	12	0	0	29	
4:15 PM	1	0	2	0	0	0	0	0	0	10	0	0	0	6	0	0	19	
4:20 PM	0	0	5	0	0	0	0	0	0	13	0	0	0	8	0	0	26	
4:25 PM	0	0	1	0	0	0	0	0	0	15	0	0	1	6	0	0	23	
4:30 PM	0	0	2	0	0	0	0	0	0	11	0	0	0	6	0	0	19	
4:35 PM	1	0	1	0	0	0	0	0	0	18	0	0	1	10	0	0	31	
4:40 PM	0	0	0	0	0	0	0	0	0	9	0	0	3	4	0	0	16	
4:45 PM	2	0	2	0	0	0	0	0	0	18	0	0	1	11	0	0	34	
4:50 PM	1	0	3	0	0	0	0	0	0	13	0	0	1	7	0	0	25	
4:55 PM	1	0	2	0	0	0	0	0	0	9	0	0	3	9	0	0	24	300
5:00 PM	1	0	4	0	0	0	0	0	0	21	0	0	1	11	0	0	38	314
5:05 PM	0	0	2	0	0	0	0	0	0	11	0	0	1	9	0	0	23	307
5:10 PM	0	0	1	0	0	0	0	0	0	11	0	0	1	8	0	0	21	299
5:15 PM	1	0	1	0	0	0	0	0	0	17	0	0	3	5	0	0	27	307
5:20 PM	0	0	2	0	0	0	0	0	0	10	0	0	3	14	0	0	29	310
5:25 PM	0	0	4	0	0	0	0	0	0	10	0	0	0	4	0	0	18	305
5:30 PM	0	0	1	0	0	0	0	0	0	15	0	0	1	9	0	0	26	312
5:35 PM	0	0	1	0	0	0	0	0	0	15	0	0	0	9	0	0	25	306
5:40 PM	0	0	2	0	0	0	0	0	0	13	0	0	0	14	0	0	29	319
5:45 PM	2	0	1	0	0	0	0	0	0	15	0	0	2	3	0	0	23	308
5:50 PM	0	0	1	0	0	0	0	0	0	11	0	0	1	5	0	0	18	301
5:55 PM	0	0	3	0	0	0	0	0	0	7	0	0	1	7	0	0	18	295

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	4	0	12	0	0	0	0	0	0	172	0	0	8	116	0	0	312
Heavy Trucks	0	0	0		0	0	0		0	8	0		0	0	0		8
Pedestrians		0				0				0				0			0
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/10/2008 1:11 PM

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

Rear Entrance

Time	Ins	Outs
12:00 AM	0	1
12:15 AM	1	0
12:30 AM	0	1
12:45 AM	1	0
1:00 AM	1	2
1:15 AM	2	0
1:30 AM	2	0
1:45 AM	0	0
2:00 AM	1	2
2:15 AM	0	2
2:30 AM	0	0
2:45 AM	0	0
3:00 AM	0	0
3:15 AM	1	0
3:30 AM	6	2
3:45 AM	11	0
4:00 AM	3	0
4:15 AM	2	0
4:30 AM	6	0
4:45 AM	11	1
5:00 AM	5	1
5:15 AM	5	2
5:30 AM	2	1
5:45 AM	15	1
6:00 AM	10	2
6:15 AM	27	0
6:30 AM	17	4
6:45 AM	8	2
7:00 AM	13	1
7:15 AM	12	3
7:30 AM	25	5
7:45 AM	24	4
8:00 AM	13	2
8:15 AM	14	4
8:30 AM	8	4
8:45 AM	11	3
9:00 AM	4	1
9:15 AM	5	3
9:30 AM	13	2
9:45 AM	10	6
10:00 AM	3	5
10:15 AM	7	5
10:30 AM	5	6
10:45 AM	5	3
11:00 AM	1	12
11:15 AM	6	7
11:30 AM	11	10
11:45 AM	17	13

Time	Ins	Outs
12:00 PM	0	0
12:15 PM	6	8
12:30 PM	9	11
12:45 PM	15	5
1:00 PM	10	5
1:15 PM	10	2
1:30 PM	9	7
1:45 PM	12	8
2:00 PM	6	13
2:15 PM	5	8
2:30 PM	7	12
2:45 PM	8	13
3:00 PM	6	21
3:15 PM	6	9
3:30 PM	3	20
3:45 PM	4	12
4:00 PM	10	14
4:15 PM	5	9
4:30 PM	5	21
4:45 PM	4	11
5:00 PM	6	20
5:15 PM	9	12
5:30 PM	1	10
5:45 PM	4	11
6:00 PM	2	9
6:15 PM	1	8
6:30 PM	3	4
6:45 PM	3	4
7:00 PM	4	3
7:15 PM	2	5
7:30 PM	0	1
7:45 PM	0	0
8:00 PM	3	2
8:15 PM	0	0
8:30 PM	0	0
8:45 PM	1	1
9:00 PM	0	3
9:15 PM	0	1
9:30 PM	0	0
9:45 PM	0	1
10:00 PM	2	9
10:15 PM	0	6
10:30 PM	0	2
10:45 PM	0	0
11:00 PM	2	9
11:15 PM	0	1
11:30 PM	0	0
11:45 PM	1	0

Morena - 2006
4605 Morena Blvd
San Diego, Ca

285 SW 85th Avenue, Ste. 105
Tigard, OR 97224
Phone: 503-620-4242
Fax: 503 620-4545
mail: jrw@qualitycounts.net
www.qualitycounts.net

79

73

34

Main North Entrance

Time	Ins	Outs
12:00 AM	Gate Closed	
12:15 AM		
12:30 AM		
12:45 AM		
1:00 AM		
1:15 AM		
1:30 AM		
1:45 AM		
2:00 AM		
2:15 AM		
2:30 AM		
2:45 AM		
3:00 AM		
3:15 AM		
3:30 AM		
3:45 AM		
4:00 AM		
4:15 AM		
4:30 AM		
4:45 AM		
5:00 AM		
5:15 AM		
5:30 AM		
5:45 AM		
6:00 AM	1	1
6:15 AM	2	1
6:30 AM	1	1
6:45 AM	2	2
7:00 AM	0	1
7:15 AM	2	0
7:30 AM	1	1
7:45 AM	2	0
8:00 AM	4	0
8:15 AM	1	2
8:30 AM	3	1
8:45 AM	1	1
9:00 AM	1	3
9:15 AM	6	0
9:30 AM	11	4
9:45 AM	21	1
10:00 AM	25	12
10:15 AM	20	28
10:30 AM	22	21
10:45 AM	19	34
11:00 AM	18	39
11:15 AM	27	40
11:30 AM	22	28
11:45 AM	15	31

Time	Ins	Outs
12:00 PM	24	76
12:15 PM	24	38
12:30 PM	16	37
12:45 PM	24	39
1:00 PM	21	29
1:15 PM	19	41
1:30 PM	18	32
1:45 PM	20	31
2:00 PM	23	38
2:15 PM	19	30
2:30 PM	21	28
2:45 PM	21	39
3:00 PM	12	33
3:15 PM	25	33
3:30 PM	13	18
3:45 PM	25	24
4:00 PM	24	23
4:15 PM	13	38
4:30 PM	20	27
4:45 PM	7	26
5:00 PM	16	26
5:15 PM	24	31
5:30 PM	17	34
5:45 PM	15	29
6:00 PM	26	29
6:15 PM	13	22
6:30 PM	21	24
6:45 PM	17	24
7:00 PM	18	26
7:15 PM	16	21
7:30 PM	13	24
7:45 PM	8	16
8:00 PM	3	11
8:15 PM	3	11
8:30 PM	3	13
8:45 PM	3	4
9:00 PM	0	1
9:15 PM	0	0
9:30 PM	0	0
9:45 PM	0	0
10:00 PM	0	0
10:15 PM	0	0
10:30 PM	0	0
10:45 PM	0	0
11:00 PM	0	0
11:15 PM	Gate Closed	
11:30 PM		
11:45 PM		

Morena - 2006
4605 Morena Blvd
San Diego, Ca

285 SW 85th Avenue, Ste. 105
Tigard, OR 97224
Phone: 503-620-4242
Fax: 503 620-4545
mail: jrw@qualitycounts.net
www.qualitycounts.net

178

192

176

Main South Entrance

Time	Ins	Outs
12:00 AM	Gate Closed	
12:15 AM		
12:30 AM		
12:45 AM		
1:00 AM		
1:15 AM		
1:30 AM		
1:45 AM		
2:00 AM		
2:15 AM		
2:30 AM		
2:45 AM		
3:00 AM		
3:15 AM		
3:30 AM		
3:45 AM		
4:00 AM		
4:15 AM		
4:30 AM		
4:45 AM		
5:00 AM		
5:15 AM		
5:30 AM		
5:45 AM		
6:00 AM	4	3
6:15 AM	10	9
6:30 AM	21	9
6:45 AM	19	17
7:00 AM	19	13
7:15 AM	21	19
7:30 AM	24	17
7:45 AM	27	21
8:00 AM	29	39
8:15 AM	30	26
8:30 AM	27	29
8:45 AM	34	32
9:00 AM	48	39
9:15 AM	39	33
9:30 AM	67	29
9:45 AM	104	19
10:00 AM	140	43
10:15 AM	124	66
10:30 AM	109	92
10:45 AM	109	100
11:00 AM	116	97
11:15 AM	107	89
11:30 AM	116	106
11:45 AM	94	84

Time	Ins	Outs
12:00 PM	73	25
12:15 PM	120	96
12:30 PM	119	100
12:45 PM	96	120
1:00 PM	96	97
1:15 PM	112	103
1:30 PM	99	88
1:45 PM	111	74
2:00 PM	128	96
2:15 PM	127	99
2:30 PM	94	108
2:45 PM	211	207
3:00 PM	105	111
3:15 PM	110	95
3:30 PM	88	97
3:45 PM	116	90
4:00 PM	91	101
4:15 PM	87	100
4:30 PM	92	117
4:45 PM	77	84
5:00 PM	85	82
5:15 PM	106	75
5:30 PM	87	92
5:45 PM	75	94
6:00 PM	101	89
6:15 PM	80	74
6:30 PM	84	88
6:45 PM	75	88
7:00 PM	75	93
7:15 PM	76	80
7:30 PM	49	57
7:45 PM	51	67
8:00 PM	30	68
8:15 PM	30	60
8:30 PM	20	58
8:45 PM	15	31
9:00 PM	4	9
9:15 PM	2	5
9:30 PM	1	2
9:45 PM	0	0
10:00 PM	0	0
10:15 PM	0	0
10:30 PM	0	0
10:45 PM	0	0
11:00 PM	0	0
11:15 PM	Gate Closed	
11:30 PM		
11:45 PM		

Morena - 2006
4605 Morena Blvd
San Diego, Ca

285 SW 85th Avenue, Ste. 105
Tigard, OR 97224
Phone: 503-620-4242
Fax: 503 620-4545
mail: jrw@qualitycounts.net
www.qualitycounts.net
749

Approach the patron and ask "Can I ask you a few questions about your trip to Costco Wholesale Club today?"	**Surveyor:**	**QC**
	Location:	**Morena**
	Date:	**2/28/2006**

Time:	**3:30 - 6:00 PM**
Fuel station or Warehouse?	
Notes:	

	Survey Number	**Internalization** *Will you be visiting both the fuel*			**Primary Trips** Please think about where you were prior to coming here. Will you go directly back there when you are finished here?		**P-B Trips** If Costco were not here, would you have passed by this block on Morena Blvd?		**Diverted Linked** If Costco were not here where is the closest you would have traveled to				
		Both	**Fuel only**	**Warehouse Only**					**Jutland Drive**	**Balboa Avenue**	**San Diego Freeway (Interstate 5)**	**Clairemont Mesa Blvd.**	**Other - Please Name**
		A.	**B.**	**C.**	**Y**	**N**	**Y**	**N**	**A.**	**B.**	**C.**	**D.**	**E**
	Totals												
Fuel		49	55	0	44	60	16	44	2	27	20	1	4
Warehouse		40	0	64	69	35	11	24	3	3	3	7	0

	Total People		Total People	Difference	Non-Primary Trips	Difference		Diverted Trips	Difference
Fuel	104		104	0	60	0		54	10
Warehouse	104		104	0	35	0		16	-8
			0.423077	0.57692308	0.266667	0.153846154	42.3%	0.0%	
			66.3%	33.7%	0.314286	0.105769231	23.1%	43.3%	

	Primary	Pass-by	Diverted
Fuel	42.3%	15.4%	42.3%
Warehouse	66.3%	10.6%	23.1%

Approach the patron and ask "Can I ask you a few questions about your trip to Costco Wholesale Club today?"	Surveyor:	[illegible] B.
	Location:	Morena
	Date:	

Time:	4:25-5:00
Fuel station or Warehouse?	
Notes:	

6 GAS

Survey Number	Internalization: *Will you be visiting both the fuel station and the warehouse today?*			Primary Trips: Please think about where you were prior to coming here. Will you go directly back there when you are finished here?		P-B Trips: If Costco were not here, would you have passed by this block on Morena Blvd?		Diverted Linked: If Costco were not here where is the closest you would have traveled to this location?				
	Both	Fuel only	Warehouse Only					Jutland Drive	Balboa Avenue	San Diego Freeway (Interstate 5)	Clairemont Mesa Blvd.	Other - Please Name
	A.	B.	C.	Y	N	Y	N	A.	B.	C.	D.	E
		X			X		X			X		
		X		X					X			
		X			X		X					
		X		X						X		
	X				X		X					
	X			X								
	X				X	X						
	X				X		X			X		
		X		X								
	X				X	X						
		X			X		X		X			
	X			X					X			
	X						X					
		X			X							MORAGA
	X				X		X			X		
		X			X	X						
	X				X		X		X			
		X			X	X						
	X				X					X		
	X			X								
		X			X		X		X			
		X			X		X			X		

Totals												
	13	13	0	9	19	0	12	0	5	6	0	1

Approach the patron and ask "Can I ask you a few questions about your trip to Costco Wholesale Club today?"

Surveyor:	Andy R.
Location:	Morena
Date:	3/2/06

Time:	4:00 - 4:25
Fuel station or Warehouse?	
Notes:	

Survey Number	Internalization: *Will you be visiting both the fuel station and the warehouse today?*			Primary Trips: Please think about where you were prior to coming here. Will you go directly back there when you are finished here?		P-B Trips: If Costco were not here, would you have passed by this block on Morena Blvd?		Diverted Linked: If Costco were not here where is the closest you would have traveled to this location?				
	Both	Fuel only	Warehouse Only	Y	N	Y	N	Jutland Drive	Balboa Avenue	San Diego Freeway (Interstate 5)	Clairemont Mesa Blvd.	Other - Please Name
	A.	B.	C.	Y	N	Y	N	A.	B.	C.	D.	E
		X		X								
		X			X		X			X		
	X				X		X			X		
	X				X		X	X				
	X				X	X						
	X			X								
	X			X								
		X		X								
	X			X								
		X			X	X						
	X			X								
		X			X		X					5 MAIZ VA
		X		X								
	X			X								
		X			X	X						
		X			X		X			X		
		X			X							
		X			X							
		X		X								
		X			X	X						
	X			X								
	X				X							
	X				X	X						
	X			X								
	X				X		X			X		
	X			X								
		X		X								
Totals	14	12	0	15	11	5	6			0	4	0 1

Approach the patron and ask "Can I ask you a few questions about your trip to Costco Wholesale Club today?"	Surveyor:	Audrey B.
	Location:	Morena
	Date:	3/1/06

Time:	3:35 - 4:00
Fuel station or Warehouse?	
Notes:	

GAS

Survey Number	Internalization: *Will you be visiting both the fuel station and the warehouse today?* A. Both	B. Fuel only	C. Warehouse Only	Primary Trips: Please think about where you were prior to coming here. Will you go directly back there when you are finished here? Y	N	P-B Trips: If Costco were not here, would you have passed by this block on Morena Blvd? Y	N	Diverted Linked: If Costco were not here where is the closest you would have traveled to this location? A. Jutland Drive	B. Balboa Avenue	C. San Diego Freeway (Interstate 5)	D. Clairemont Mesa Blvd.	E. Other - Please Name
		X			X		X		X			
		X		X								
		X			X		X		X			
	X			X								
	X			X								
		X		X								
		X		X								
		X			X	X						
	X				X	X						
	X			X								
	X				X		X	X				
	X			X								
	X			X								
	X				X		X					
		X			X		X			X		
		X			X		X					X
		X			X		X		X			
		X		X								
	X				X		X			X		
	X				X		X			X		
		X			X		X				X	
	X			X					X			
	X				X							
	X			X					X			
		X			X		X					
Totals	14	12	0	11	15	2	13	1	17	3	1	1

Approach the patron and ask "Can I ask you a few questions about your trip to Costco Wholesale Club today?"	Surveyor:	Kristy B.
	Location:	Morena
	Date:	3/8/16

Time:	5:00-5:30
Fuel station or Warehouse?	
Notes:	

Survey Number	Internalization: *Will you be visiting both the fuel station and the warehouse today?*			Primary Trips: Please think about where you were prior to coming here. Will you go directly back there when you are finished here?		P-B Trips: If Costco were not here, would you have passed by this block on Morena Blvd?		Diverted Linked: If Costco were not here where is the closest you would have traveled to this location?				
	Both	Fuel only	Warehouse Only					Jutland Drive	Balboa Avenue	San Diego Freeway (Interstate 5)	Clairemont Mesa Blvd.	Other - Please Name
	A.	B.	C.	Y	N	Y	N	A.	B.	C.	D.	E
		X			X	X						
	X				X		X			X		
		X			X		X			X		
	X				X		X		X			
		X		X								
		X			X		X					52
	X			X								
		X			X		X			X		
		X		X								
		X			X		X			X		
		X			X		X		X			
	X				X		X					
		X			X		X		X			
		X		X								
	X			X								
		X			X		X			X		
		X			X		X					
		X			X	X						
		X			X	X						
	X				X		X		X			
		X			X		X					
	X			X								
		X			X		X			X		
	X			X								
		X			X		X			X		
		X			X		X		X			
		X		X								
Totals	9	18	0	10	16	3	13	0	5	7	0	1

Approach the patron and ask "Can I ask you a few questions about your trip to Costco Wholesale Club today?"	Surveyor:	JOSH B
	Location:	Morena
	Date:	3/1

Time:	3:30 - 5:30
Fuel station or Warehouse?	
Notes:	

DID YOU GET WHAT YOU WANTED?

Survey Number	Internalization: *Will you be visiting both the fuel station and the warehouse today?*			Primary Trips: Please think about where you were prior to coming here. Will you go directly back there when you are finished here?		P-B Trips: If Costco were not here, would you have passed by this block on Morena Blvd?		Diverted Linked: If Costco were not here where is the closest you would have traveled to this location?				
	Both	Fuel only	Warehouse Only					Jutland Drive	Balboa Avenue	San Diego Freeway (Interstate 5)	Clairemont Mesa Blvd.	Other - Please Name
	A.	B.	C.	Y	N	Y	N	A.	B.	C.	D.	E
	X				X		X		X			
			X		X		X					MISSION VALLEY
	X			X								
			X		X	X			X			
			X		X	X		X				
	X			X								
			X	X								
			X	X								
			X	X								
	X				X		X			X		
			X	X								
			X	X								
			X	X								
	X			X								
			X	X						X		
			X	X								
			X	X								
			X		X		X				X	
			X		X	X						X
	X				X		X				X	
			X		X							
			X		X	X			X			
	X				X							
			X	X								
			X	X								
Totals	7	0	19	16	10	4	6	0	1	2	2	0

Approach the patron and ask "Can I ask you a few questions about your trip to Costco Wholesale Club today?"	Surveyor:	Josh B.
	Location:	Morena
	Date:	3/1

Time:	3:30-5:30
Fuel station or Warehouse?	
Notes:	

Survey Number	Internalization: *Will you be visiting both the fuel station and the warehouse today?*			Primary Trips: Please think about where you were prior to coming here. Will you go directly back there when you are finished here?		P-B Trips: If Costco were not here, would you have passed by this block on Morena Blvd?		Diverted Linked: If Costco were not here where is the closest you would have traveled to this location?				
	Both	Fuel only	Warehouse Only					Jutland Drive	Balboa Avenue	San Diego Freeway (Interstate 5)	Clairemont Mesa Blvd.	Other - Please Name
	A.	B.	C.	Y	N	Y	N	A.	B.	C.	D.	E
	X			X								
			X	X								
			X	X								
	X			X								
			X		X		X				X	
	X				X		X				X	
	X			X								
	X			X								
			X	X								
			X	X								
			X	X								
	X			X								
			X	X								
	X			X								
			X		X		X		X			
			X	X								
			X		X		X				X	
			X	X								
	X			X								
	X			X								
	X			X								
			X		X		X					X
			X		X		X		X			
	X			X								
	X			X								
			X	X								

Totals												
12	6	14	20	6	0	6	0	2	0	3	1	

Approach the patron and ask "Can I ask you a few questions about your trip to Costco Wholesale Club today?"	Surveyor:	Dan B.
	Location:	Morena
	Date:	3/1

Time:	3.5-5.5
Fuel station or Warehouse?	
Notes:	

Survey Number	Internalization: *Will you be visiting both the fuel station and the warehouse today?*			Primary Trips: Please think about where you were prior to coming here. Will you go directly back there when you are finished here?		P-B Trips: If Costco were not here, would you have passed by this block on Morena Blvd?		Diverted Linked: If Costco were not here where is the closest you would have traveled to this location?					
	Both	Fuel only	Warehouse Only					Jutland Drive	Balboa Avenue	San Diego Freeway (Interstate 5)	Clairemont Mesa Blvd.	Other - Please Name	
	A.	B.	C.	Y	N	Y	N	A.	B.	C.	D.	E	
	X				X		X				X		
			X		X		X				X		
	X				X		X	X					
	X							X					
			X										
	X												
			X										
	X				X		X						
			X									X	CARLSBAD
			X										
			X										
			X										
			X										
			X		X		X					X	
			X										
	X												
			X		X	X				X			
			X		X		X	X				HWY 60 & GOLDENROD	
			X		X		X						
	X				X		X					56 HWY	
			X										
			X										
	X				X		X					POINT LOMA	
			X										
			X		X								
			X			X			X				
Totals	8	0	18	14	12	2	10	3	0	0	2	5	

Approach the patron and ask "Can I ask you a few questions about your trip to Costco Wholesale Club today?"	Surveyor:	Josh B.
	Location:	Morena
	Date:	3/1/06

Time:	
Fuel station or Warehouse?	
Notes:	

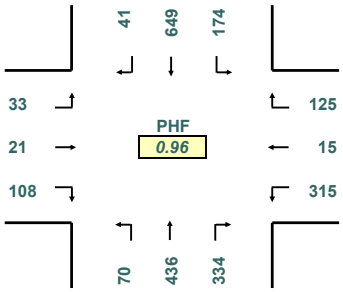
Survey Number	Internalization: *Will you be visiting both the fuel station and the warehouse today?*			Primary Trips: Please think about where you were prior to coming here. Will you go directly back there when you are finished here?		P-B Trips: If Costco were not here, would you have passed by this block on Morena Blvd?		Diverted Linked: If Costco were not here where is the closest you would have traveled to this location?					
	Both	Fuel only	Warehouse Only					Jutland Drive	Balboa Avenue	San Diego Freeway (Interstate 5)	Clairemont Mesa Blvd.	Other - Please Name	
	A.	B.	C.	Y	N	Y	N	A.	B.	C.	D.	E	
	X				X	X					X		
			X	X									
	X			X									
			X	X									
			X	X									
	X			X									
			X	X									
			X	X									
			X		X		X			X			
			X	X									
	X				X	X			X				
	X			X									
			X		X								
	X				X	X					X		
			X	X									
	X												
	X			X							X		
	X				X	X							
	X			X									
			X		X								
	X			X									
			X		X		X					X SPORTS ARENA	
	X			X									
	X				X	X			X				
			X	X									
			X	X									
Totals	13	0	13	19	7	5	2	0	0	1	0	1	

INTERSECTION: *Hawthorne Ave--/Costco Driveway--*
PROJECT ID#: *7402*
QC JOB #: *10097601*

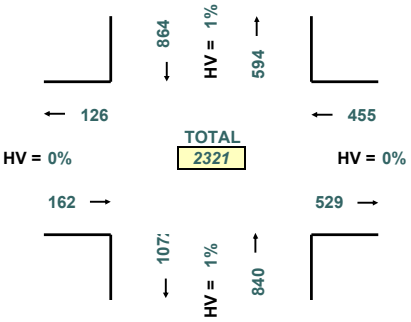
START TIME: *4:00 PM*
END TIME: *6:00 PM*
DATE: *6/8/2005*

QUALITY COUNTS
16265 SW 85th Avenue, Ste. 105
Tigard, OR 97224
Phone: 503-620-4242
Fax: 503 620-4545
email: jrw@qualitycounts.net
www.qualitycounts.net

PEAK HOUR TURNING MOVEMENTS



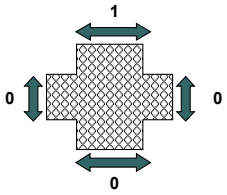
PEAK HOUR LINK VOLUMES



PEAK HOUR: 4:45 PM TO 5:45 PM

PEAK 15 MINUTES: 4:45 PM TO 5:00 PM

PEAK HOUR PED CROSSING VOLUMES



5-MINUTE COUNT PERIOD	*Hawthorne Ave--* (Southbound)			*Costco Driveway--* (Westbound)			*Hawthorne Ave--* (Northbound)			*Ryan Dr--* (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
BEGINNING AT	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
4:00 PM	2	55	9	6	0	26	23	34	3	10	2	5	0	0	0	0	175	0
4:05 PM	2	55	10	9	1	20	33	40	5	11	1	2	2	0	0	0	189	2
4:10 PM	3	43	12	7	2	24	22	38	2	8	0	0	0	0	0	0	161	0
4:15 PM	3	36	13	8	1	37	29	39	8	4	3	2	1	0	0	0	183	1
4:20 PM	9	38	16	11	1	35	33	48	2	7	1	2	0	0	0	0	203	0
4:25 PM	4	43	12	10	2	34	19	30	4	12	1	5	0	0	0	0	176	0
4:30 PM	1	40	9	12	0	12	28	22	5	8	2	3	0	0	0	0	142	0
4:35 PM	2	48	7	9	1	19	36	41	8	13	4	3	0	0	0	0	191	0
4:40 PM	3	35	8	10	2	25	29	37	4	18	4	4	3	0	0	0	179	3
4:45 PM	3	75	10	14	0	28	26	35	6	5	3	1	0	0	0	0	206	0
4:50 PM	3	50	15	8	1	29	27	54	4	3	1	2	1	0	0	0	197	1
4:55 PM	0	55	9	9	1	26	28	46	10	14	1	2	0	0	0	0	201	0
5:00 PM	4	59	14	3	3	22	31	31	3	16	2	4	0	0	0	0	192	0
5:05 PM	6	68	20	7	2	16	30	32	9	12	0	3	0	0	0	0	205	0
5:10 PM	3	56	22	12	0	24	26	43	2	10	1	1	0	0	0	0	200	0
5:15 PM	9	57	9	13	1	43	32	40	3	8	2	5	0	0	0	0	222	0
5:20 PM	3	58	10	12	3	29	17	30	9	9	3	3	0	0	0	0	186	0
5:25 PM	4	49	17	12	1	21	35	33	6	3	1	3	0	0	0	0	185	0
5:30 PM	2	34	18	10	3	30	21	23	3	8	4	4	0	0	0	0	160	0
5:35 PM	4	47	14	12	0	28	26	31	7	10	1	3	0	0	0	0	183	0
5:40 PM	0	41	16	13	0	19	35	38	8	10	2	2	0	0	0	0	184	0
5:45 PM	2	42	9	20	5	32	31	32	2	9	1	2	0	0	0	0	187	0
5:50 PM	6	43	16	9	1	21	19	25	3	7	2	1	0	0	0	0	153	0
5:55 PM	1	39	12	15	0	14	29	29	7	1	0	3	0	0	0	0	150	0

HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
4:00 PM	35	573	130	113	12	315	333	464	61	113	23	31	7	0	0	0	2203	7
4:15 PM	41	603	155	113	14	307	342	458	65	122	23	32	5	0	0	0	2275	5
4:30 PM	41	650	150	121	15	294	345	444	69	119	24	34	4	0	0	0	2306	4
4:45 PM	41	649	174	125	15	315	334	436	70	108	21	33	1	0	0	0	2321	1
5:00 PM	44	593	177	138	19	299	332	387	62	103	19	34	0	0	0	0	2207	0

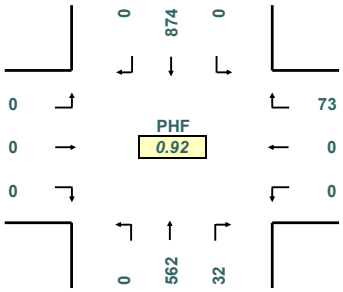
Version 3.1

INTERSECTION: *Hawthorne Ave--/North Costco Driveway--*
PROJECT ID#: *7402*
QC JOB #: *10097602*

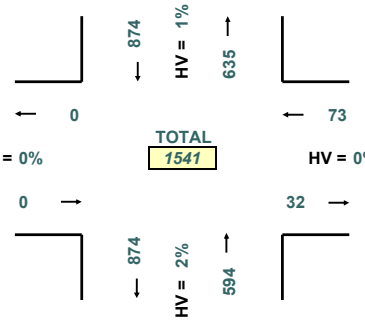
START TIME: *4:00 PM*
END TIME: *6:00 PM*
DATE: *6/8/2005*

QUALITY COUNTS
16265 SW 85th Avenue, Ste. 105
Tigard, OR 97224
Phone: 503-620-4242
Fax: 503 620-4545
email: jrw@qualitycounts.net
www.qualitycounts.net

PEAK HOUR TURNING MOVEMENTS



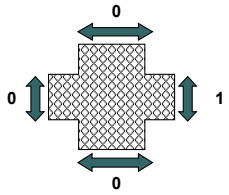
PEAK HOUR LINK VOLUMES



PEAK HOUR: 4:45 PM TO 5:45 PM

PEAK 15 MINUTES: 5:00 PM TO 5:15 PM

PEAK HOUR PED CROSSING VOLUMES



5-MINUTE COUNT PERIOD	*Hawthorne Ave--* (Southbound)			*North Costco Driveway--* (Westbound)			*Hawthorne Ave--* (Northbound)			*N/A--* (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
BEGINNING AT	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
4:00 PM	0	67	0	4	0	0	0	46	0	0	0	0	0	0	0	0	117	0
4:05 PM	0	70	0	4	0	0	3	50	0	0	0	0	0	0	0	0	127	0
4:10 PM	0	57	0	4	0	0	6	38	0	0	0	0	0	0	0	0	105	0
4:15 PM	0	61	0	2	0	0	2	54	0	0	0	0	0	0	0	0	119	0
4:20 PM	0	59	0	1	0	0	3	45	0	0	0	0	0	0	0	0	108	0
4:25 PM	0	56	0	6	0	0	3	44	0	0	0	0	0	0	0	0	109	0
4:30 PM	0	56	0	4	0	0	2	49	0	0	0	0	0	0	0	0	111	0
4:35 PM	0	52	0	4	0	0	1	44	0	0	0	0	0	0	0	0	101	0
4:40 PM	0	56	0	6	0	0	0	47	0	0	0	0	0	0	0	0	109	0
4:45 PM	0	77	0	4	0	0	4	50	0	0	0	0	0	0	0	0	135	0
4:50 PM	0	73	0	6	0	0	6	66	0	0	0	0	0	0	0	0	151	0
4:55 PM	0	75	0	8	0	0	0	48	0	0	0	0	0	0	0	0	131	0
5:00 PM	0	76	0	5	0	0	0	37	0	0	0	0	0	0	0	0	118	0
5:05 PM	0	97	0	7	0	0	2	55	0	0	0	0	0	0	0	0	161	0
5:10 PM	0	92	0	5	0	0	1	41	0	0	0	0	0	0	0	0	139	0
5:15 PM	0	84	0	6	0	0	6	56	0	0	0	0	0	0	0	0	152	0
5:20 PM	0	68	0	5	0	0	1	45	0	0	0	0	0	0	0	0	119	0
5:25 PM	0	59	0	9	0	0	4	39	0	0	0	0	0	1	0	0	111	1
5:30 PM	0	55	0	5	0	0	1	34	0	0	0	0	0	0	0	0	95	0
5:35 PM	0	62	0	3	0	0	2	56	0	0	0	0	0	0	0	0	123	0
5:40 PM	0	56	0	10	0	0	5	35	0	0	0	0	0	0	0	0	106	0
5:45 PM	0	62	0	6	0	0	2	53	0	0	0	0	0	0	0	0	123	0
5:50 PM	0	59	0	6	0	0	1	41	0	0	0	0	0	0	0	0	107	0
5:55 PM	0	56	0	5	0	0	5	49	0	0	0	0	0	0	0	0	115	0

HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
4:00 PM	0	759	0	53	0	0	30	581	0	0	0	0	0	0	0	0	1423	0
4:15 PM	0	830	0	58	0	0	24	580	0	0	0	0	0	0	0	0	1492	0
4:30 PM	0	865	0	69	0	0	27	577	0	0	0	0	0	1	0	0	1538	1
4:45 PM	0	874	0	73	0	0	32	562	0	0	0	0	0	1	0	0	1541	1
5:00 PM	0	826	0	72	0	0	30	541	0	0	0	0	0	1	0	0	1469	1

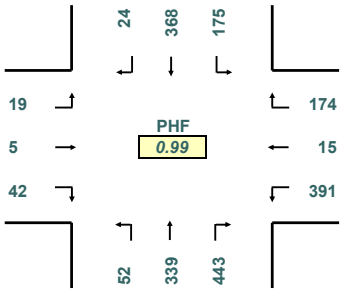
Version 3.1

INTERSECTION: *Hawthorne Ave--/Costco Driveway--*
PROJECT ID#: *7402*
QC JOB #: *10097604*

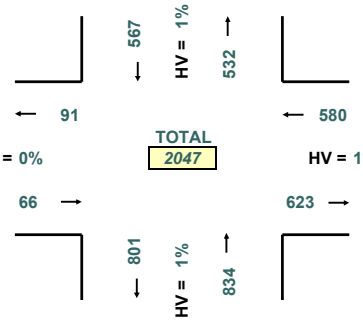
START TIME: *12:00 PM*
END TIME: *3:00 PM*
DATE: *6/11/2005*

QUALITY COUNTS
16265 SW 85th Avenue, Ste. 105
Tigard, OR 97224
Phone: 503-620-4242
Fax: 503 620-4545
email: jrw@qualitycounts.net
www.qualitycounts.net

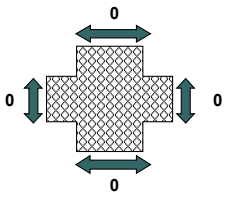
PEAK HOUR TURNING MOVEMENTS



PEAK HOUR LINK VOLUMES



PEAK HOUR PED CROSSING VOLUMES



PEAK HOUR: 1:15 PM TO 2:15 PM

PEAK 15 MINUTES: 1:45 PM TO 2:00 PM

5-MINUTE COUNT PERIOD	*Hawthorne Ave--* (Southbound)			*Costco Driveway--* (Westbound)			*Hawthorne Ave--* (Northbound)			*Ryan Dr--* (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
BEGINNING AT	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
12:00 PM	3	24	19	8	0	37	34	17	6	6	1	4	0	0	0	1	159	1
12:05 PM	2	30	15	12	0	22	40	21	4	0	1	1	0	0	0	0	148	0
12:10 PM	2	20	10	13	1	31	37	16	3	1	3	6	0	0	0	0	143	0
12:15 PM	1	34	11	21	1	41	59	31	5	2	2	2	0	0	0	0	210	0
12:20 PM	0	27	20	16	0	30	21	24	4	3	1	1	0	0	0	0	147	0
12:25 PM	2	29	17	13	2	27	31	29	1	5	0	2	0	0	0	0	158	0
12:30 PM	6	20	10	6	1	37	32	25	8	8	0	3	0	0	0	0	156	0
12:35 PM	1	25	15	16	0	34	36	39	2	5	1	3	0	0	0	0	177	0
12:40 PM	1	19	14	10	0	26	32	22	6	6	1	0	0	0	0	0	137	0
12:45 PM	0	32	27	10	1	35	32	25	4	3	0	1	0	0	0	1	170	1
12:50 PM	5	18	22	17	1	33	35	34	2	2	2	4	0	0	0	0	175	0
12:55 PM	5	33	5	12	0	38	35	31	1	7	0	2	0	0	0	0	169	0
1:00 PM	3	17	12	9	1	30	40	37	3	9	1	1	0	0	0	0	163	0
1:05 PM	2	31	16	8	0	25	33	36	3	8	2	2	0	0	0	0	166	0
1:10 PM	2	29	15	16	0	32	34	25	2	3	4	3	0	0	0	1	165	1
1:15 PM	3	23	16	18	1	36	42	36	3	2	0	2	0	0	0	0	182	0
1:20 PM	0	25	13	12	0	35	32	19	5	1	0	0	0	0	0	0	142	0
1:25 PM	2	33	16	21	0	28	45	37	3	2	1	2	0	0	0	0	190	0
1:30 PM	1	21	11	17	1	37	33	31	1	3	1	2	0	0	0	0	159	0
1:35 PM	1	40	22	11	0	33	40	34	4	5	1	1	0	0	0	0	192	0
1:40 PM	3	35	10	12	3	27	37	25	4	2	1	2	0	0	0	0	161	0
1:45 PM	3	31	17	19	0	39	32	22	7	4	0	2	0	0	0	0	176	0
1:50 PM	2	37	13	18	0	30	45	29	6	4	1	2	0	0	0	0	187	0
1:55 PM	3	22	17	13	1	40	22	28	6	3	0	1	0	0	0	0	156	0
2:00 PM	2	24	14	9	1	27	42	26	5	2	0	1	0	0	0	0	153	0
2:05 PM	4	40	8	13	2	30	46	27	1	8	0	3	0	0	0	0	182	0
2:10 PM	0	37	18	11	6	29	27	25	7	6	0	1	0	0	0	0	167	0
2:15 PM	1	35	21	10	0	27	37	30	1	4	0	1	0	0	0	0	167	0
2:20 PM	3	29	13	16	0	39	25	25	2	3	0	0	0	0	0	0	155	0
2:25 PM	1	29	13	12	0	39	23	28	1	3	0	2	0	0	0	0	151	0
2:30 PM	2	30	11	8	1	37	37	21	4	0	0	1	0	0	0	0	152	0
2:35 PM	0	33	11	25	2	23	40	42	6	4	0	2	0	0	0	0	188	0
2:40 PM	1	29	12	11	0	33	29	22	1	5	0	4	0	0	0	0	147	0
2:45 PM	1	22	7	14	1	28	32	23	8	3	1	2	0	0	1	0	142	1
2:50 PM	3	18	16	13	1	39	37	23	3	6	1	1	0	0	0	0	161	0
2:55 PM	1	16	15	24	0	25	37	38	5	8	0	4	0	0	0	0	173	0

HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
12:00 PM	28	311	185	154	7	391	424	314	46	48	12	29	0	0	0	2	1949	2
12:15 PM	28	314	184	154	7	388	420	358	41	61	14	24	0	0	0	2	1993	2
12:30 PM	30	305	181	155	5	389	428	366	42	56	12	23	0	0	0	2	1992	2
12:45 PM	27	337	185	163	8	389	438	370	35	47	13	22	0	0	0	2	2034	2
1:00 PM	25	344	178	174	7	392	435	359	47	46	12	20	0	0	0	1	2039	1
1:15 PM	24	368	175	174	15	391	443	339	52	42	5	19	0	0	0	0	2047	0
1:30 PM	24	380	177	161	14	397	409	330	45	47	4	18	0	0	0	0	2006	0
1:45 PM	22	376	168	165	13	393	405	325	47	46	1	20	0	0	0	0	1981	0
2:00 PM	19	342	159	166	14	376	412	330	44	52	2	22	0	0	1	0	1938	1

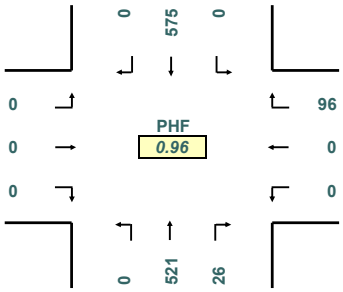
Version 3.1

INTERSECTION: *NE Hawthorne Ave--/North Costco Driveway--*
PROJECT ID#: *7402*
QC JOB #: *10097605*

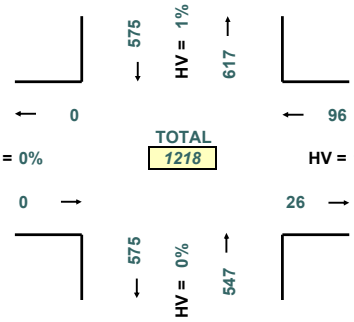
START TIME: *12:00 PM*
END TIME: *3:00 PM*
DATE: *6/11/2005*

QUALITY COUNTS
16265 SW 85th Avenue, Ste. 105
Tigard, OR 97224
Phone: 503-620-4242
Fax: 503 620-4545
email: jrw@qualitycounts.net
www.qualitycounts.net

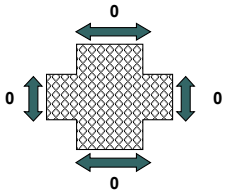
PEAK HOUR TURNING MOVEMENTS



PEAK HOUR LINK VOLUMES



PEAK HOUR PED CROSSING VOLUMES



PEAK HOUR: 1:15 PM TO 2:15 PM

PEAK 15 MINUTES: 1:30 PM TO 1:45 PM

5-MINUTE COUNT PERIOD	*NE Hawthorne Ave--* (Southbound)			*North Costco Driveway--* (Westbound)			*NE Hawthorne Ave--* (Northbound)			*N/A--* (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
BEGINNING AT	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
12:00 PM	0	42	0	3	0	0	1	29	0	0	0	0	0	0	0	0	75	0
12:05 PM	0	49	0	9	0	0	2	29	0	0	0	0	0	0	0	0	89	0
12:10 PM	0	39	0	8	0	0	5	40	0	0	0	0	0	0	0	0	92	0
12:15 PM	0	43	0	5	0	0	3	52	0	0	0	0	0	0	0	0	103	0
12:20 PM	0	48	0	7	0	0	1	39	0	0	0	0	0	0	0	0	95	0
12:25 PM	0	45	0	6	0	0	2	42	0	0	0	0	0	0	0	0	95	0
12:30 PM	0	38	0	7	0	0	2	31	0	0	0	0	0	0	0	0	78	0
12:35 PM	0	38	0	0	0	0	3	57	0	0	0	0	0	0	0	0	98	0
12:40 PM	0	39	0	8	0	0	0	32	0	0	0	0	0	0	0	0	79	0
12:45 PM	0	58	0	3	0	0	0	33	0	0	0	0	0	0	0	0	94	0
12:50 PM	0	41	0	7	0	0	2	53	0	0	0	0	0	0	0	0	103	0
12:55 PM	0	44	0	8	0	0	2	43	0	0	0	0	0	0	0	0	97	0
1:00 PM	0	35	0	5	0	0	3	46	0	0	0	0	0	0	0	0	89	0
1:05 PM	0	47	0	2	0	0	4	45	0	0	0	0	0	0	0	0	98	0
1:10 PM	0	44	0	9	0	0	3	42	0	0	0	0	0	0	0	0	98	0
1:15 PM	0	41	0	8	0	0	4	52	0	0	0	0	0	0	0	0	105	0
1:20 PM	0	40	0	7	0	0	3	28	0	0	0	0	0	0	0	0	78	0
1:25 PM	0	50	0	12	0	0	2	56	0	0	0	0	0	0	0	0	120	0
1:30 PM	0	40	0	7	0	0	1	53	0	0	0	0	0	0	0	0	101	0
1:35 PM	0	62	0	9	0	0	1	47	0	0	0	0	0	0	0	0	119	0
1:40 PM	0	48	0	9	0	0	1	40	0	0	0	0	0	0	0	0	98	0
1:45 PM	0	46	0	5	0	0	1	45	0	0	0	0	0	0	0	0	97	0
1:50 PM	0	56	0	11	0	0	1	48	0	0	0	0	0	0	0	0	116	0
1:55 PM	0	42	0	6	0	0	3	38	0	0	0	0	0	0	0	0	89	0
2:00 PM	0	40	0	8	0	0	2	34	0	0	0	0	0	0	0	0	84	0
2:05 PM	0	54	0	4	0	0	5	45	0	0	0	0	0	0	0	0	108	0
2:10 PM	0	56	0	10	0	0	2	35	0	0	0	0	0	0	0	0	103	0
2:15 PM	0	57	0	4	0	0	0	45	0	0	0	0	0	0	0	0	106	0
2:20 PM	0	49	0	15	0	0	1	45	0	0	0	0	0	0	0	0	110	0
2:25 PM	0	40	0	4	0	0	3	40	0	0	0	0	0	0	0	0	87	0
2:30 PM	0	47	0	5	0	0	2	30	0	0	0	0	0	0	0	0	84	0
2:35 PM	0	45	0	4	0	0	1	70	0	0	0	0	0	0	0	0	120	0
2:40 PM	0	44	0	7	0	0	3	36	0	0	0	0	0	0	0	0	90	0
2:45 PM	0	25	0	7	0	0	4	39	0	0	0	0	0	0	0	0	75	0
2:50 PM	0	40	0	3	0	0	0	39	0	0	0	0	0	0	0	0	82	0
2:55 PM	0	30	0	4	0	0	1	66	0	0	0	0	0	0	0	0	101	0

HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
12:00 PM	0	524	0	71	0	0	23	480	0	0	0	0	0	0	0	0	1098	0
12:15 PM	0	520	0	67	0	0	25	515	0	0	0	0	0	0	0	0	1127	0
12:30 PM	0	515	0	76	0	0	28	518	0	0	0	0	0	0	0	0	1137	0
12:45 PM	0	550	0	86	0	0	26	538	0	0	0	0	0	0	0	0	1200	0
1:00 PM	0	551	0	90	0	0	27	540	0	0	0	0	0	0	0	0	1208	0
1:15 PM	0	575	0	96	0	0	26	521	0	0	0	0	0	0	0	0	1218	0
1:30 PM	0	590	0	92	0	0	21	515	0	0	0	0	0	0	0	0	1218	0
1:45 PM	0	576	0	83	0	0	24	511	0	0	0	0	0	0	0	0	1194	0
2:00 PM	0	527	0	75	0	0	24	524	0	0	0	0	0	0	0	0	1150	0

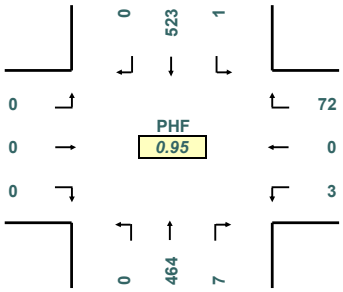
Version 3.1

INTERSECTION: *Heather Ridge Rd--/N Costco Drvwy--*
PROJECT ID#: *Laguna Costco*
QC JOB #: *10065644*

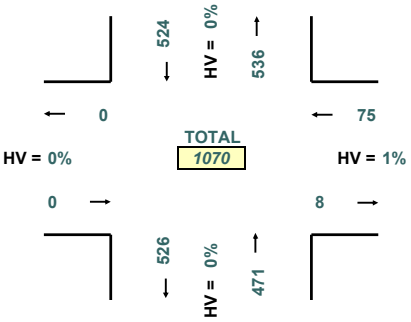
START TIME: *4:00 PM*
END TIME: *6:00 PM*
DATE: *11/9/2004*

QUALITY COUNTS
16265 SW 85th Avenue, Ste. 105
Tigard, OR 97224
Phone: 503-620-4242
Fax: 503 620-4545
email: jrw@qualitycounts.net
www.qualitycounts.net

PEAK HOUR TURNING MOVEMENTS



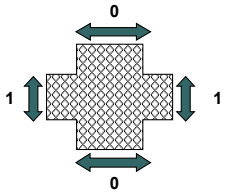
PEAK HOUR LINK VOLUMES



PEAK HOUR: 4:30 PM TO 5:30 PM

PEAK 15 MINUTES: 4:30 PM TO 4:45 PM

PEAK HOUR PED CROSSING VOLUMES



5-MINUTE COUNT PERIOD	*Heather Ridge Rd--* (Southbound)			*N Costco Drvwy--* (Westbound)			*Heather Ridge Rd--* (Northbound)			*Open Lot--* (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
BEGINNING AT	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
4:00 PM	0	41	0	6	0	0	1	37	0	0	0	0	0	0	0	0	85	0
4:05 PM	0	37	0	9	0	0	0	40	0	0	0	0	0	0	0	0	86	0
4:10 PM	0	34	0	6	0	1	2	43	0	0	0	0	0	0	0	0	86	0
4:15 PM	0	47	0	7	0	0	1	36	0	0	0	0	0	0	0	0	91	0
4:20 PM	0	40	0	7	0	0	1	27	0	0	0	0	0	0	0	0	75	0
4:25 PM	0	58	0	2	0	0	0	22	0	0	0	0	0	0	0	0	82	0
4:30 PM	0	42	0	7	0	0	1	42	0	0	0	0	0	0	0	0	92	0
4:35 PM	0	46	0	12	0	0	0	40	0	0	0	0	0	0	0	0	98	0
4:40 PM	0	50	0	2	0	0	1	40	0	0	0	0	0	1	0	1	93	2
4:45 PM	0	44	0	4	0	0	2	39	0	0	0	0	0	0	0	0	89	0
4:50 PM	0	41	0	4	0	0	0	42	0	0	0	0	0	0	0	0	87	0
4:55 PM	0	43	0	6	0	0	0	39	0	0	0	0	0	0	0	0	88	0
5:00 PM	0	42	1	5	0	2	0	55	0	0	0	0	0	0	0	0	105	0
5:05 PM	0	40	0	6	0	0	1	32	0	0	0	0	0	0	0	0	79	0
5:10 PM	0	48	0	3	0	0	1	27	0	0	0	0	0	0	0	0	79	0
5:15 PM	0	43	0	10	0	0	1	25	0	0	0	0	0	0	0	0	79	0
5:20 PM	0	50	0	7	0	0	0	39	0	0	0	0	0	0	0	0	96	0
5:25 PM	0	34	0	6	0	1	0	44	0	0	0	0	0	0	0	0	85	0
5:30 PM	0	45	0	12	0	0	0	35	0	0	0	0	0	0	0	0	92	0
5:35 PM	0	40	0	5	0	0	1	38	0	0	0	0	0	0	0	0	84	0
5:40 PM	0	41	0	8	0	0	0	38	0	0	0	0	0	0	0	0	87	0
5:45 PM	0	42	0	7	0	0	0	20	0	0	0	0	0	0	0	0	69	0
5:50 PM	0	49	0	9	0	0	0	42	0	0	0	0	0	0	0	0	100	0
5:55 PM	0	29	0	8	0	0	0	43	0	0	0	0	0	0	0	0	80	0

HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	West	East	North	South	Veh	Peds
4:00 PM	0	523	0	72	0	1	9	447	0	0	0	0	0	1	0	1	1052	2
4:15 PM	0	541	1	65	0	2	8	441	0	0	0	0	0	1	0	1	1058	2
4:30 PM	0	523	1	72	0	3	7	464	0	0	0	0	0	1	0	1	1070	2
4:45 PM	0	511	1	76	0	3	6	453	0	0	0	0	0	0	0	0	1050	0
5:00 PM	0	503	1	86	0	3	4	438	0	0	0	0	0	0	0	0	1035	0

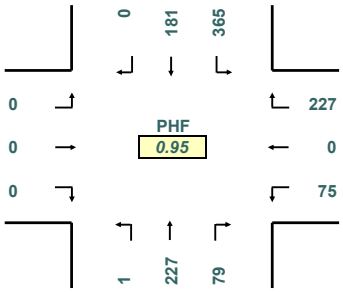
Version 3.1

INTERSECTION: *Heather Ridge Rd--/Mid-Costco Drvwy--*
PROJECT ID#: *Laguna Costco*
QC JOB #: *10065645*

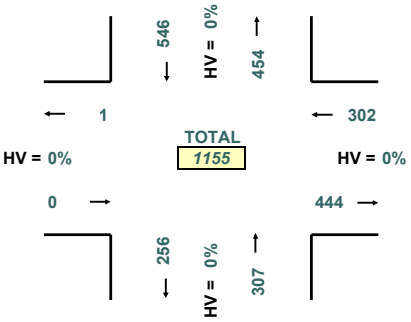
START TIME: *4:00 PM*
END TIME: *6:00 PM*
DATE: *11/9/2004*

QUALITY COUNTS
16265 SW 85th Avenue, Ste. 105
Tigard, OR 97224
Phone: 503-620-4242
Fax: 503 620-4545
email: jrw@qualitycounts.net
www.qualitycounts.net

PEAK HOUR TURNING MOVEMENTS



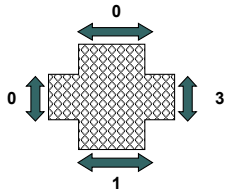
PEAK HOUR LINK VOLUMES



PEAK HOUR: 4:15 PM TO 5:15 PM

PEAK 15 MINUTES: 4:30 PM TO 4:45 PM

PEAK HOUR PED CROSSING VOLUMES



5-MINUTE COUNT PERIOD	*Heather Ridge Rd--* (Southbound)			*Mid-Costco Drvwy--* (Westbound)			*Heather Ridge Rd--* (Northbound)			*Open Lot--* (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
BEGINNING AT	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
4:00 PM	0	16	22	19	0	12	5	15	0	0	0	0	1	0	0	0	89	1
4:05 PM	0	11	24	21	0	8	2	18	0	0	0	0	0	0	0	0	84	0
4:10 PM	0	15	20	20	0	9	5	29	0	0	0	0	0	1	0	0	98	1
4:15 PM	0	16	30	18	0	7	11	23	0	0	0	0	0	0	0	0	105	0
4:20 PM	0	14	30	15	0	6	5	10	0	0	0	0	0	0	0	0	80	0
4:25 PM	0	13	45	19	0	6	5	10	0	0	0	0	0	0	0	0	98	0
4:30 PM	0	18	26	19	0	11	6	24	0	0	0	0	0	0	0	0	104	0
4:35 PM	0	18	28	19	0	6	3	24	0	0	0	0	0	0	0	0	98	0
4:40 PM	0	14	35	17	0	13	3	21	0	0	0	0	0	1	0	0	103	1
4:45 PM	0	14	30	23	0	4	8	12	1	0	0	0	0	0	0	0	92	0
4:50 PM	0	14	24	25	0	4	4	21	0	0	0	0	0	0	0	0	92	0
4:55 PM	0	14	30	14	0	2	10	22	0	0	0	0	0	0	0	0	92	0
5:00 PM	0	15	27	25	0	3	7	29	0	0	0	0	0	2	0	0	106	2
5:05 PM	0	13	27	19	0	6	10	14	0	0	0	0	0	0	1	0	89	1
5:10 PM	0	18	33	14	0	7	7	17	0	0	0	0	0	0	0	0	96	0
5:15 PM	0	16	27	18	0	7	4	13	0	0	0	0	0	1	0	0	85	1
5:20 PM	0	21	31	17	0	5	7	22	0	0	0	0	0	0	0	0	103	0
5:25 PM	0	10	25	20	0	6	6	24	0	0	0	0	0	1	0	0	91	1
5:30 PM	0	14	30	20	0	6	7	17	0	0	0	0	0	0	0	0	94	0
5:35 PM	0	19	26	20	0	13	6	21	0	0	0	0	0	0	0	0	105	0
5:40 PM	0	16	29	17	0	11	5	18	0	0	0	0	0	0	0	0	96	0
5:45 PM	0	15	28	13	0	5	7	10	0	0	0	0	0	0	0	0	78	0
5:50 PM	0	16	31	27	0	8	4	16	0	0	0	0	0	0	0	0	102	0
5:55 PM	0	9	20	23	0	9	8	17	0	0	0	0	0	0	0	0	86	0

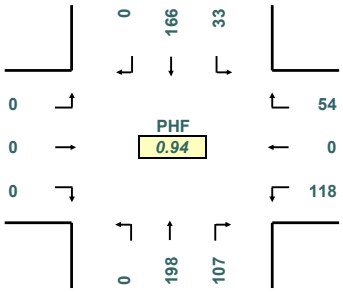
HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	West	East	North	South	Veh	Peds
4:00 PM	0	177	344	229	0	88	67	229	1	0	0	0	1	2	0	0	1135	3
4:15 PM	0	181	365	227	0	75	79	227	1	0	0	0	0	3	1	0	1155	4
4:30 PM	0	185	343	230	0	74	75	243	1	0	0	0	0	5	1	0	1151	6
4:45 PM	0	184	339	232	0	74	81	230	1	0	0	0	0	4	1	0	1141	5
5:00 PM	0	182	334	233	0	86	78	218	0	0	0	0	0	4	1	0	1131	5

INTERSECTION: *Heather Ridge Rd--/S Costco Driveway--*
PROJECT ID#: *Laguna Costco*
QC JOB #: *10065646*

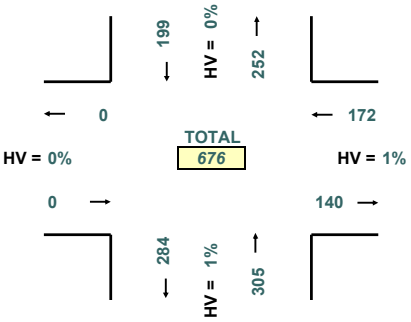
START TIME: *4:00 PM*
END TIME: *6:00 PM*
DATE: *11/9/2004*

QUALITY COUNTS
16265 SW 85th Avenue, Ste. 105
Tigard, OR 97224
Phone: 503-620-4242
Fax: 503 620-4545
email: jrw@qualitycounts.net
www.qualitycounts.net

PEAK HOUR TURNING MOVEMENTS



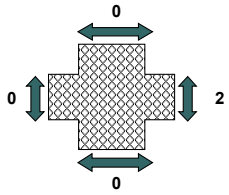
PEAK HOUR LINK VOLUMES



PEAK HOUR: 4:30 PM TO 5:30 PM

PEAK 15 MINUTES: 5:15 PM TO 5:30 PM

PEAK HOUR PED CROSSING VOLUMES



5-MINUTE COUNT PERIOD	*Heather Ridge Rd--* (Southbound)			*S Costco Driveway--* (Westbound)			*Heather Ridge Rd--* (Northbound)			*Open Lot--* (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
BEGINNING AT	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
4:00 PM	0	17	1	4	0	10	6	12	0	0	0	0	0	0	0	0	50	0
4:05 PM	0	12	0	3	0	11	7	6	0	0	0	0	0	0	0	0	39	0
4:10 PM	1	16	0	5	0	9	11	18	0	0	0	0	0	1	0	0	60	1
4:15 PM	0	12	0	7	0	5	8	22	0	0	0	0	0	0	0	0	54	0
4:20 PM	0	16	2	3	0	8	6	13	0	0	0	0	0	1	0	0	48	1
4:25 PM	0	13	1	2	0	5	13	14	0	0	0	2	0	0	0	0	50	0
4:30 PM	0	15	1	4	0	9	8	19	0	0	0	0	0	0	0	0	56	0
4:35 PM	0	11	5	5	0	11	9	16	0	0	0	0	0	0	0	0	57	0
4:40 PM	0	26	2	3	0	4	8	16	0	0	0	0	0	1	0	0	59	1
4:45 PM	0	10	4	4	0	16	8	13	0	0	0	0	0	0	0	0	55	0
4:50 PM	0	13	2	4	0	11	6	15	0	0	0	0	0	0	0	0	51	0
4:55 PM	0	11	0	6	0	9	11	20	0	0	0	0	0	1	0	0	57	1
5:00 PM	0	13	4	5	0	8	10	27	0	0	0	0	0	0	0	0	67	0
5:05 PM	0	11	2	3	0	10	8	8	0	0	0	0	0	0	0	0	42	0
5:10 PM	0	13	1	2	0	10	10	16	0	0	0	0	0	0	0	0	52	0
5:15 PM	0	14	5	3	0	14	9	15	0	0	0	0	0	0	0	0	60	0
5:20 PM	0	14	6	10	0	6	7	13	0	0	0	0	0	0	0	0	56	0
5:25 PM	0	15	1	5	0	10	13	20	0	0	0	0	0	0	0	0	64	0
5:30 PM	0	14	1	4	0	10	9	17	0	0	0	0	0	0	0	0	55	0
5:35 PM	0	17	0	8	0	10	8	22	0	0	0	0	0	0	0	0	65	0
5:40 PM	0	12	1	3	0	8	3	15	0	0	0	0	0	0	0	0	42	0
5:45 PM	0	20	1	3	0	9	13	9	0	0	0	0	0	0	0	0	55	0
5:50 PM	0	15	1	5	0	7	3	12	0	0	0	0	0	0	0	0	43	0
5:55 PM	0	13	1	3	0	8	11	14	0	0	0	0	0	0	0	0	50	0

HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	West	East	North	South	Veh	Peds
4:00 PM	1	172	18	50	0	108	101	184	0	0	0	2	0	4	0	0	636	4
4:15 PM	0	164	24	48	0	106	105	199	0	0	0	2	0	3	0	0	648	3
4:30 PM	0	166	33	54	0	118	107	198	0	0	0	0	0	2	0	0	676	2
4:45 PM	0	157	27	57	0	122	102	201	0	0	0	0	0	1	0	0	666	1
5:00 PM	0	171	24	54	0	110	104	188	0	0	0	0	0	0	0	0	651	0

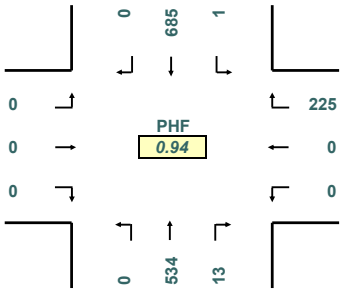
Version 3.1

INTERSECTION: *Heather Ridge Rd--/North Costco Drwy--*
PROJECT ID#: *6159*
QC JOB #: *10065690*

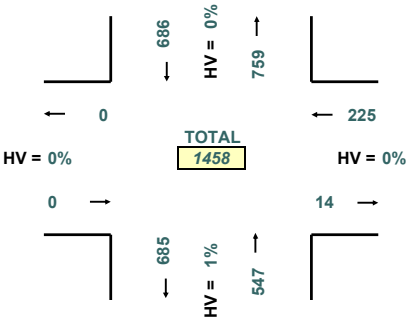
START TIME: *1:00 PM*
END TIME: *3:30 PM*
DATE: *11/13/2004*

QUALITY COUNTS
16265 SW 85th Avenue, Ste. 105
Tigard, OR 97224
Phone: 503-620-4242
Fax: 503 620-4545
email: jrw@qualitycounts.net
www.qualitycounts.net

PEAK HOUR TURNING MOVEMENTS



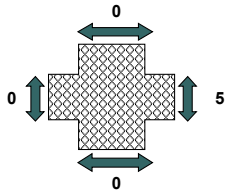
PEAK HOUR LINK VOLUMES



PEAK HOUR: 1:45 PM TO 2:45 PM

PEAK 15 MINUTES: 2:45 PM TO 3:00 PM

PEAK HOUR PED CROSSING VOLUMES



5-MINUTE COUNT PERIOD	*Heather Ridge Rd--* (Southbound)			*North Costco Drwy--* (Westbound)			*Heather Ridge Rd--* (Northbound)			*North Costco Drwy--* (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
BEGINNING AT	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
1:00 PM	0	57	0	10	0	0	0	43	0	0	0	0	0	0	0	0	110	0
1:05 PM	0	59	0	21	0	0	1	38	0	0	0	0	0	0	0	0	119	0
1:10 PM	0	70	0	22	0	0	2	42	0	0	0	0	0	0	0	0	136	0
1:15 PM	0	59	0	19	0	0	0	42	0	0	0	0	0	0	0	0	120	0
1:20 PM	0	55	0	12	0	0	0	42	0	0	0	0	0	1	0	0	109	1
1:25 PM	0	68	0	14	0	0	1	48	0	0	0	0	0	0	0	0	131	0
1:30 PM	0	58	0	27	0	0	1	39	0	0	0	0	0	0	0	0	125	0
1:35 PM	0	43	0	21	0	1	1	44	0	0	0	0	0	0	0	0	110	0
1:40 PM	0	66	1	16	0	0	1	42	0	0	0	0	0	0	0	0	126	0
1:45 PM	0	51	0	11	0	0	1	38	0	0	0	0	0	0	0	0	101	0
1:50 PM	0	77	1	16	0	0	2	45	0	0	0	0	0	0	0	0	141	0
1:55 PM	0	61	0	14	0	0	1	45	0	0	0	0	0	0	0	0	121	0
2:30 PM	0	47	0	22	0	0	1	37	0	0	0	0	0	0	0	0	107	0
2:35 PM	0	48	0	21	0	0	4	47	0	0	0	0	0	0	0	0	120	0
2:40 PM	0	49	0	21	0	0	0	48	0	0	0	0	0	0	0	0	118	0
2:45 PM	0	63	0	16	0	0	2	41	0	0	0	0	0	3	0	0	122	3
2:50 PM	0	65	0	17	0	0	1	39	0	0	0	0	0	0	0	0	122	0
2:55 PM	0	66	0	22	0	0	1	53	0	0	0	0	0	2	0	0	142	2
3:00 PM	0	49	0	29	0	0	0	49	0	0	0	0	0	0	0	0	127	0
3:05 PM	0	51	0	20	0	0	0	51	0	0	0	0	0	0	0	0	122	0
3:10 PM	0	58	0	16	0	0	0	41	0	0	0	0	0	0	0	0	115	0
3:15 PM	0	57	0	15	0	0	1	44	0	0	0	0	0	0	0	0	117	0
3:20 PM	0	54	0	16	0	0	1	40	0	0	0	0	0	0	0	0	111	0
3:25 PM	0	53	1	19	0	0	0	52	0	0	0	0	0	0	0	0	125	0

HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
1:00 PM	0	724	2	203	0	1	11	508	0	0	0	0	0	1	0	0	1449	1
1:15 PM	0	682	2	214	0	1	13	517	0	0	0	0	0	1	0	0	1429	1
1:30 PM	0	694	2	224	0	1	16	518	0	0	0	0	0	5	0	0	1455	5
1:45 PM	0	685	1	225	0	0	13	534	0	0	0	0	0	5	0	0	1458	5
2:00 PM	0	660	1	234	0	0	11	542	0	0	0	0	0	5	0	0	1448	5

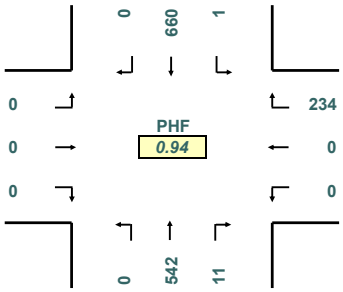
Version 3.1

INTERSECTION: *Heather Ridge Rd--/Middle Costco Drive--*
PROJECT ID#: *6159*
QC JOB #: *10065691*

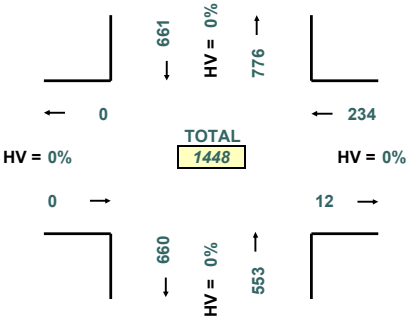
START TIME: *1:00 PM*
END TIME: *3:30 PM*
DATE: *11/13/2004*

QUALITY COUNTS
16265 SW 85th Avenue, Ste. 105
Tigard, OR 97224
Phone: 503-620-4242
Fax: 503 620-4545
email: jrw@qualitycounts.net
www.qualitycounts.net

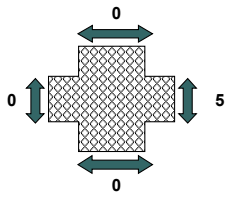
PEAK HOUR TURNING MOVEMENTS



PEAK HOUR LINK VOLUMES



PEAK HOUR PED CROSSING VOLUMES



PEAK HOUR: 2:00 PM TO 3:00 PM

PEAK 15 MINUTES: 2:45 PM TO 3:00 PM

5-MINUTE COUNT PERIOD	*Heather Ridge Rd--* (Southbound)			*Middle Costco Drive--* (Westbound)			*Heather Ridge Rd--* (Northbound)			-- (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
BEGINNING AT	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
1:00 PM	0	0	25	23	0	5	8	0	0	0	0	0	0	0	0	0	61	0
1:05 PM	0	0	30	14	0	9	11	0	0	0	0	0	0	0	0	0	64	0
1:10 PM	0	0	39	23	0	8	6	0	0	0	0	0	0	0	0	0	76	0
1:15 PM	0	0	28	22	0	5	10	0	0	0	0	0	0	0	0	0	65	0
1:20 PM	0	0	38	23	0	5	9	0	0	0	0	0	0	0	0	0	75	0
1:25 PM	0	0	45	27	0	2	12	0	0	0	0	0	0	0	0	0	86	0
1:30 PM	0	0	33	28	0	9	10	0	0	0	0	0	0	0	0	0	80	0
1:35 PM	0	0	35	22	0	3	11	0	0	0	0	0	0	0	0	0	71	0
1:40 PM	0	0	34	34	0	7	10	0	0	0	0	0	0	0	0	0	85	0
1:45 PM	0	0	31	31	0	5	5	0	0	0	0	0	0	0	0	0	72	0
1:50 PM	0	0	29	29	0	7	7	0	0	0	0	0	0	0	0	0	72	0
1:55 PM	0	0	40	40	0	10	10	0	0	0	0	0	0	0	0	0	100	0
2:30 PM	0	47	0	22	0	0	1	37	0	0	0	0	0	0	0	0	107	0
2:35 PM	0	48	0	21	0	0	4	47	0	0	0	0	0	0	0	0	120	0
2:40 PM	0	49	0	21	0	0	0	48	0	0	0	0	0	0	0	0	118	0
2:45 PM	0	63	0	16	0	0	2	41	0	0	0	0	0	3	0	0	122	3
2:50 PM	0	65	0	17	0	0	1	39	0	0	0	0	0	0	0	0	122	0
2:55 PM	0	66	0	22	0	0	1	53	0	0	0	0	0	2	0	0	142	2
3:00 PM	0	49	0	29	0	0	0	49	0	0	0	0	0	0	0	0	127	0
3:05 PM	0	51	0	20	0	0	0	51	0	0	0	0	0	0	0	0	122	0
3:10 PM	0	58	0	16	0	0	0	41	0	0	0	0	0	0	0	0	115	0
3:15 PM	0	57	0	15	0	0	1	44	0	0	0	0	0	0	0	0	117	0
3:20 PM	0	54	0	16	0	0	1	40	0	0	0	0	0	0	0	0	111	0
3:25 PM	0	53	1	19	0	0	0	52	0	0	0	0	0	0	0	0	125	0

HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
1:00 PM	0	0	407	316	0	75	109	0	0	0	0	0	0	0	0	0	907	0
1:15 PM	0	144	313	320	0	53	89	132	0	0	0	0	0	0	0	0	1051	0
1:30 PM	0	338	202	303	0	41	62	265	0	0	0	0	0	5	0	0	1211	5
1:45 PM	0	496	100	284	0	22	31	406	0	0	0	0	0	5	0	0	1339	5
2:00 PM	0	660	1	234	0	0	11	542	0	0	0	0	0	5	0	0	1448	5

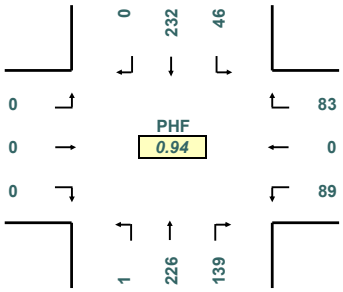
Version 3.1

INTERSECTION: *Heather Ridge Rd--/South Costco Drwy--*
PROJECT ID#: *6159*
QC JOB #: *10065692*

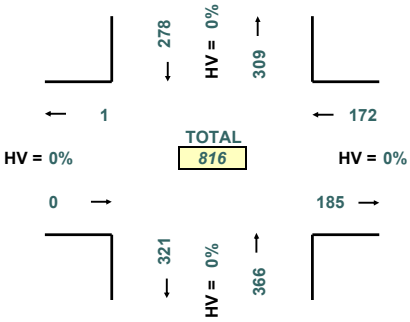
START TIME: *1:00 PM*
END TIME: *2:00 PM*
DATE: *11/13/2004*

QUALITY COUNTS
16265 SW 85th Avenue, Ste. 105
Tigard, OR 97224
Phone: 503-620-4242
Fax: 503 620-4545
email: jrw@qualitycounts.net
www.qualitycounts.net

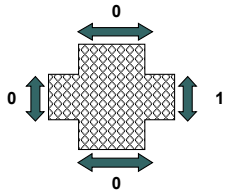
PEAK HOUR TURNING MOVEMENTS



PEAK HOUR LINK VOLUMES



PEAK HOUR PED CROSSING VOLUMES



PEAK HOUR: 1:00 PM TO 2:00 PM

PEAK 15 MINUTES: 1:30 PM TO 1:45 PM

5-MINUTE COUNT PERIOD	*Heather Ridge Rd--* (Southbound)			*South Costco Drwy--* (Westbound)			*Heather Ridge Rd--* (Northbound)			-- (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
BEGINNING AT	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
1:00 PM	0	23	3	7	0	7	6	20	1	0	0	0	0	1	0	0	67	1
1:05 PM	0	24	2	8	0	11	12	17	0	0	0	0	0	0	0	0	74	0
1:10 PM	0	28	7	5	0	4	16	16	0	0	0	0	0	0	0	0	76	0
1:15 PM	0	15	1	4	0	7	11	16	0	0	0	0	0	0	0	0	54	0
1:20 PM	0	18	6	6	0	4	16	22	0	0	0	0	0	0	0	0	72	0
1:25 PM	0	20	2	9	0	5	16	18	0	0	0	0	0	0	0	0	70	0
1:30 PM	0	16	3	5	0	12	8	29	0	0	0	0	0	0	0	0	73	0
1:35 PM	0	16	5	8	0	12	13	19	0	0	0	0	0	0	0	0	73	0
1:40 PM	0	23	4	11	0	8	9	17	0	0	0	0	0	0	0	0	72	0
1:45 PM	0	15	6	5	0	7	11	16	0	0	0	0	0	0	0	0	60	0
1:50 PM	0	15	3	8	0	7	10	17	0	0	0	0	0	0	0	0	60	0
1:55 PM	0	19	4	7	0	5	11	19	0	0	0	0	0	0	0	0	65	0

HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
1:00 PM	0	232	46	83	0	89	139	226	1	0	0	0	0	1	0	0	816	1

Version 3.1

Approach the patron and ask "Can I ask you a few questions about your trip to Costco Wholesale Club today?"	**Surveyor:**	**Ryan Moore**
	Location:	**Laguna Niguel**
	Date:	**11/8/2004**

Time:	**1-2pm**	
Fuel station or Warehouse?		Warehouse
Notes:		

Survey Number	**Internalization** *Will you be visiting both the fuel station and the warehouse today?*			**Primary Trips** Please think about where you were prior to coming here. Will you go directly back there when you are finished here?		**P-B Trips** If Costco were not here, would you have passed by this block on Pacific Park Avenue or Heather Ridge Road?		**Diverted Linked** If Costco were not here would you have traveled within the circle on the map?	
	Both	**Fuel only**	**Warehouse Only**					**Yes**	**No**
	A.	**B.**	**C.**	**Y**	**N**	**Y**	**N**	**A.**	**B.**
63	16 (25.40%)	0	47 (74.60)	28 (44.44%)		10 (15.87%)		12 (19.05%)	13 (20.63%)
								Total DV: (39.69%)	
Totals									

Approach the patron and ask "Can I ask you a few questions about your trip to Costco Wholesale Club today?"	**Surveyor:**	**Paul Triplett**
	Location:	**Laguna Niguel**
	Date:	**11/18/2004**

Time:	**12-2pm**	
Fuel station or Warehouse?		Warehouse
Notes:		

Survey Number	**Internalization** *Will you be visiting both the fuel station and the warehouse today?*			**Primary Trips** Please think about where you were prior to coming here. Will you go directly back there when you are finished here?		**P-B Trips** If Costco were not here, would you have passed by this block on Pacific Park Avenue or Heather Ridge Road?		**Diverted Linked** If Costco were not here would you have traveled within the circle on the map?	
	Both	**Fuel only**	**Warehouse Only**					**Yes**	**No**
	A.	**B.**	**C.**	**Y**	**N**	**Y**	**N**	**A.**	**B.**
128	42 (32.81%)	0	86 (67.19%)	51 (39.84%)		23 (17.97%)		30 (23.44%)	24 (18.75%)
								Total DL: 42.19%	
Totals									

Approach the patron and ask "Can I ask you a few questions about your trip to Costco Wholesale Club today?"	**Surveyor:**	**Ryan Moore**
	Location:	**Laguna Niguel**
	Date:	**11/8/2004**

Time:	**5-6pm**	
Fuel station or Warehouse?		Warehouse
Notes:		

Survey Number	**Internalization** *Will you be visiting both the fuel station and the warehouse today?*			**Primary Trips** Please think about where you were prior to coming here. Will you go directly back there when you are finished here?		**P-B Trips** If Costco were not here, would you have passed by this block on Pacific Park Avenue or Heather Ridge Road?		**Diverted Linked** If Costco were not here would you have traveled within the circle on the map?	
	Both	**Fuel only**	**Warehouse Only**					**Yes**	**No**
	A.	**B.**	**C.**	**Y**	**N**	**Y**	**N**	**A.**	**B.**
37	7 (18.92%)	0	30 (81.08)	12 (32.43%)		16 (43.24%)		6 (16.22%)	3 (8.11%)
								Total DV: (24.33%)	
Totals									

Approach the patron and ask "Can I ask you a few questions about your trip to Costco Wholesale Club today?"	**Surveyor:**	**Jordan/Ryan**
	Location:	**Laguna Niguel**
	Date:	**11/9/2004**

Time:	**4-5pm**
Fuel station or Warehouse?	Warehouse
Notes:	

Survey Number	**Internalization** *Will you be visiting both the fuel station and the warehouse today?*			**Primary Trips** Please think about where you were prior to coming here. Will you go directly back there when you are finished here?		**P-B Trips** If Costco were not here, would you have passed by this block on Pacific Park Avenue or Heather Ridge Road?		**Diverted Linked** If Costco were not here would you have traveled within the circle on the map?	
	Both	**Fuel only**	**Warehouse Only**					**Yes**	**No**
	A.	**B.**	**C.**	**Y**	**N**	**Y**	**N**	**A.**	**B.**
76	21 (27.63%)	0	55 (72.37%)	23 (30.26%)		20 (26.32%)		11 (14.47%)	22 (28.95%)
								Total DV: (43.42%)	
Totals									

Approach the patron and ask "Can I ask you a few questions about your trip to Costco Wholesale Club today?"	**Surveyor:**	**Paul Triplett**
	Location:	**Laguna Niguel**
	Date:	**11/18/2004**

Time:	**4-6pm**	
Fuel station or Warehouse?		Warehouse
Notes:		

	Internalization			**Primary Trips**		**P-B Trips**		**Diverted Linked**	
	Will you be visiting both the fuel station and the warehouse today?			Please think about where you were prior to coming here. Will you go directly back there when you are finished here?		If Costco were not here, would you have passed by this block on Pacific Park Avenue or Heather Ridge Road?		If Costco were not here would you have traveled within the circle on the map?	
Survey Number	**Both**	**Fuel only**	**Warehouse Only**					**Yes**	**No**
	A.	**B.**	**C.**	**Y**	**N**	**Y**	**N**	**A.**	**B.**
65	23 (35.38%)	0	42 (64.62%)	18 (27.69%)		20 (30.77%)		12 (18.46%)	15 (23.08%)
								Total DV: (41.54%)	
Totals									

QUALITY COUNTS

Surveyor:	Ryan Moore
Location:	Laguna Niguel
Date:	11/6/2004

Time:	3-430pm
Fuel station or Warehouse?	Warehouse
Notes:	

Survey Number	Internalization: Will you be visiting both the fuel station and the warehouse today?			Primary Trips: Please think about where you were prior to coming here. Will you go directly back there when you are finished here?		P-B Trips: If Costco were not here, would you have passed by this block on Pacific Park Avenue or Heather Ridge Road?		Diverted Linked: If Costco were not here would you have traveled within the circle on the map?	
	Both	Fuel only	Warehouse Only					Yes	No
	A.	B.	C.	Y	N	Y	N	A.	B.
150	22 (14.67%)	0	128 (85.33%)	57 (38%)		36 (24%)		35 (23.33%)	22 (14.67%)
								Total DV: (38%)	
Totals									

Name Kittelson & Associates Inc.

N-S Street Automall Drive
E-W Street 11000 South

Date January 17, 2002

PM
5-MINUTE FLOWS

TIME PERIOD		Southbound			Westbound			Northbound			Eastbound			TOTAL
FROM:	TO:	L	T	R	L	T	R	L	T	R	L	T	R	VOLUMES
4:30 PM	4:35 PM	18	7	8	3	9	15	0	7	11	4	6	0	88
4:35 PM	4:40 PM	21	10	5	3	11	20	0	4	8	7	12	0	101
4:40 PM	4:45 PM	24	7	4	10	8	10	0	8	9	7	9	1	97
4:45 PM	4:50 PM	15	2	3	10	9	21	0	5	8	5	5	0	83
4:50 PM	4:55 PM	15	11	6	8	10	12	0	1	12	8	12	0	95
4:55 PM	5:00 PM	30	7	3	4	8	15	0	4	16	5	7	0	99
5:00 PM	5:05 PM	24	10	3	4	6	25	0	4	13	6	13	0	108
5:05 PM	5:10 PM	24	6	8	5	9	21	0	3	10	3	4	0	93
5:10 PM	5:15 PM	23	6	8	2	5	13	0	4	12	4	9	0	86
5:15 PM	5:20 PM	25	8	8	6	10	13	0	8	13	1	13	0	105
5:20 PM	5:25 PM	27	9	5	10	9	21	1	4	14	0	7	0	107
5:25 PM	5:30 PM	32	10	9	9	9	18	0	1	11	2	9	0	110
5:30 PM	5:35 PM	31	15	7	5	5	12	0	8	11	4	3	0	101
5:35 PM	5:40 PM	21	5	4	3	11	8	0	5	18	3	9	1	88
5:40 PM	5:45 PM	23	15	9	5	6	7	0	8	11	6	7	1	98
5:45 PM	5:50 PM	19	5	6	5	7	11	0	9	16	2	7	0	87
5:50 PM	5:55 PM	28	7	6	10	7	15	0	3	13	0	11	0	100
5:55 PM	6:00 PM	11	5	10	7	6	9	0	4	16	5	7	0	80
6:00 PM	6:05 PM	23	4	5	12	11	13	0	5	13	5	8	0	99
6:05 PM	6:10 PM	23	3	5	4	9	15	0	1	11	3	3	0	77
6:10 PM	6:15 PM	21	13	2	10	8	19	0	0	9	5	5	0	92
6:15 PM	6:20 PM	17	8	2	11	8	14	0	5	8	3	9	0	85
6:20 PM	6:25 PM	20	4	7	5	7	11	1	3	12	8	12	0	90
6:25 PM	6:30 PM	19	4	5	3	10	9	0	3	7	3	8	0	71

15-minute flows

TIME PERIOD		Southbound			Westbound			Northbound			Eastbound			TOTAL		
FROM:	TO:	L	T	R	L	T	R	L	T	R	L	T	R	VOLUMES		
															2nd way	check
4:30 PM	4:45 PM	63	24	17	16	28	45	0	19	28	18	27	1	286	286	0
4:45 PM	5:00 PM	60	20	12	22	27	48	0	10	36	18	24	0	277	277	0
5:00 PM	5:15 PM	71	22	19	11	20	59	0	11	35	13	26	0	287	287	0
5:15 PM	5:30 PM	84	27	22	25	28	52	1	13	38	3	29	0	322	322	0
5:30 PM	5:45 PM	75	35	20	13	22	27	0	21	40	13	19	2	287	287	0
5:45 PM	6:00 PM	58	17	22	22	20	35	0	16	45	7	25	0	267	267	0
6:00 PM	6:15 PM	67	20	12	26	28	47	0	6	33	13	16	0	268	268	0
6:15 PM	6:30 PM	56	16	14	19	25	34	1	11	27	14	29	0	246	246	0

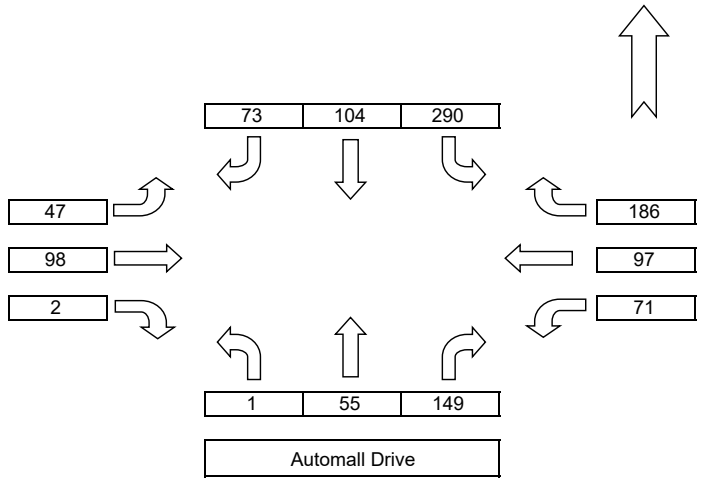
PM PEAK HOUR VOLUMES

INTERSECTION
N-S STREET: **Automall Drive**
E-W STREET: **11000 South**

COUNT DATE: **January 17, 2002**

COUNT TIME:
FROM: **4:30 PM**
TO: **6:30 PM**

PK HR VOLUME:	1,173
PHF:	0.91
PEAK HOUR: FROM: 4:45 PM	TO: 5:45 PM



PM Traffic

COUNT DATA INPUT:

TIME PERIOD		Southbound			Westbound			Northbound			Eastbound			TOTAL
FROM:	TO:	L	T	R	L	T	R	L	T	R	L	T	R	VOLUMES
4:30 PM	4:45 PM	63	24	17	16	28	45	0	19	28	18	27	1	286
4:45 PM	5:00 PM	60	20	12	22	27	48	0	10	36	18	24	0	277
5:00 PM	5:15 PM	71	22	19	11	20	59	0	11	35	13	26	0	287
5:15 PM	5:30 PM	84	27	22	25	28	52	1	13	38	3	29	0	322
5:30 PM	5:45 PM	75	35	20	13	22	27	0	21	40	13	19	2	287
5:45 PM	6:00 PM	58	17	22	22	20	35	0	16	45	7	25	0	267
6:00 PM	6:15 PM	67	20	12	26	28	47	0	6	33	13	16	0	268
6:15 PM	6:30 PM	56	16	14	19	25	34	1	11	27	14	29	0	246

PM HOURLY TOTALS:

TIME PERIOD		Southbound			Westbound			Northbound			Eastbound			TOTAL	DO NOT DELETE	
FROM:	TO:	L	T	R	L	T	R	L	T	R	L	T	R	VOLUMES	FORMULAS BELOW	
4:30 PM	5:30 PM	278	93	70	74	103	204	1	53	137	52	106	1	1,172	0	0
4:45 PM	5:45 PM	290	104	73	71	97	186	1	55	149	47	98	2	1,173	1	322
5:00 PM	6:00 PM	288	101	83	71	90	173	1	61	158	36	99	2	1,163	0	0
5:15 PM	6:15 PM	284	99	76	86	98	161	1	56	156	36	89	2	1,144	0	0
5:30 PM	6:30 PM	256	88	68	80	95	143	1	54	145	47	89	2	1,068	0	0

NOTE PHF IS BASED ON 15 MIN. PEAK WITHIN THE PEAK HOUR.

Name Kittelson & Associates Inc.

N-S Street Automall Dr
E-W Street 11000 South

Date January 17, 2002

Truck Volumes
5-MINUTE FLOWS

TIME PERIOD		Southbound			Westbound			Northbound			Eastbound			TOTAL
FROM:	TO:	L	T	R	L	T	R	L	T	R	L	T	R	VOLUMES
4:30 PM	4:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:35 PM	4:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:40 PM	4:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	4:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:50 PM	4:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:55 PM	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	5:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:05 PM	5:10 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
5:10 PM	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	5:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:20 PM	5:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:25 PM	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:35 PM	5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:40 PM	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	5:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:50 PM	5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:55 PM	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	6:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:05 PM	6:10 PM	0	0	0	0	0	1	0	0	1	0	0	0	2
6:10 PM	6:15 PM	0	1	0	0	0	0	0	0	1	0	0	0	2
6:15 PM	6:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:20 PM	6:25 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
6:25 PM	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0

Pedestrian Volumes
5-MINUTE FLOWS

TIME PERIOD		Southbound	Westbound	Northbound	Eastbound	TOTAL
FROM:	TO:					VOLUMES
4:30 PM	4:35 PM	2	0	0	0	2
4:35 PM	4:40 PM	0	0	0	0	0
4:40 PM	4:45 PM	0	0	0	0	0
4:45 PM	4:50 PM	0	0	0	0	0
4:50 PM	4:55 PM	0	0	0	0	0
4:55 PM	5:00 PM	0	0	0	0	0
5:00 PM	5:05 PM	0	0	0	0	0
5:05 PM	5:10 PM	0	0	0	0	0
5:10 PM	5:15 PM	0	0	0	0	0
5:15 PM	5:20 PM	0	0	0	0	0
5:20 PM	5:25 PM	0	0	0	0	0
5:25 PM	5:30 PM	0	0	0	0	0
5:30 PM	5:35 PM	0	0	1	1	2
5:35 PM	5:40 PM	0	0	0	0	0
5:40 PM	5:45 PM	0	0	0	0	0
5:45 PM	5:50 PM	0	0	0	0	0
5:50 PM	5:55 PM	0	0	0	0	0
5:55 PM	6:00 PM	0	0	0	0	0
6:00 PM	6:05 PM	0	0	0	0	0
6:05 PM	6:10 PM	0	0	0	0	0
6:10 PM	6:15 PM	0	0	0	1	1
6:15 PM	6:20 PM	0	0	0	0	0
6:20 PM	6:25 PM	0	0	0	0	0
6:25 PM	6:30 PM	0	0	0	0	0

Name Kittelson & Associates, Inc.

N-S Street Automall Dr.
E-W Street 11000 South

Date 8/12/2001

Saturday

5-MINUTE FLOWS

TIME PERIOD		Southbound			Westbound			Northbound			Eastbound			TOTAL
FROM:	TO:	L	T	R	L	T	R	L	T	R	L	T	R	VOLUMES
12:00 PM	12:05 PM	15	16	11	12	20	17	0	14	22	14	13	0	154
12:05 PM	12:10 PM	18	20	8	11	12	21	0	12	32	6	16	0	156
12:10 PM	12:15 PM	11	15	10	16	14	22	0	14	17	7	12	1	139
12:15 PM	12:20 PM	11	18	12	12	15	14	0	18	26	11	12	0	149
12:20 PM	12:25 PM	21	13	13	10	18	20	0	14	18	9	10	0	146
12:25 PM	12:30 PM	24	19	7	13	14	21	0	25	21	6	9	1	160
12:30 PM	12:35 PM	18	27	9	16	19	20	0	14	21	5	13	0	162
12:35 PM	12:40 PM	19	30	16	9	11	36	0	21	20	3	15	0	180
12:40 PM	12:45 PM	19	25	8	13	13	28	0	18	20	7	14	1	166
12:45 PM	12:50 PM	13	29	8	13	19	16	0	11	38	6	9	0	162
12:50 PM	12:55 PM	22	20	15	16	12	17	0	21	26	5	13	0	167
12:55 PM	1:00 PM	20	19	6	15	17	18	0	25	36	9	11	0	176
1:00 PM	1:05 PM	26	22	12	11	9	24	0	16	24	5	11	1	161
1:05 PM	1:10 PM	20	23	13	13	15	24	0	20	24	6	15	0	173
1:10 PM	1:15 PM	19	21	6	23	17	19	0	17	15	4	18	0	159
1:15 PM	1:20 PM	20	18	14	11	16	20	0	20	40	8	8	3	178
1:20 PM	1:25 PM	19	28	9	14	13	23	0	24	41	8	11	0	190
1:25 PM	1:30 PM	17	28	14	13	15	24	0	15	25	7	13	0	171
1:30 PM	1:35 PM	11	22	15	19	16	25	0	18	23	10	12	0	171
1:35 PM	1:40 PM	20	24	12	14	7	25	1	22	16	5	8	0	154
1:40 PM	1:45 PM	24	20	9	15	13	15	0	18	19	6	11	0	150
1:45 PM	1:50 PM	20	21	8	10	11	16	0	20	29	8	12	0	155
1:50 PM	1:55 PM	32	10	18	11	10	13	0	22	22	3	10	0	151
1:55 PM	2:00 PM	31	35	10	9	11	35	0	21	25	2	17	0	196

15-minute flows

TIME PERIOD		Southbound			Westbound			Northbound			Eastbound			TOTAL		
FROM:	TO:	L	T	R	L	T	R	L	T	R	L	T	R	VOLUMES	2nd way	check
12:00 PM	12:15 PM	44	51	29	39	46	60	0	40	71	27	41	1	449	449	0
12:15 PM	12:30 PM	56	50	32	35	47	55	0	57	65	26	31	1	455	455	0
12:30 PM	12:45 PM	56	82	33	38	43	84	0	53	61	15	42	1	508	508	0
12:45 PM	1:00 PM	55	68	29	44	48	51	0	57	100	20	33	0	505	505	0
1:00 PM	1:15 PM	65	66	31	47	41	67	0	53	63	15	44	1	493	493	0
1:15 PM	1:30 PM	56	74	37	38	44	67	0	59	106	23	32	3	539	539	0
1:30 PM	1:45 PM	55	66	36	48	36	65	1	58	58	21	31	0	475	475	0
1:45 PM	2:00 PM	83	66	36	30	32	64	0	63	76	13	39	0	502	502	0

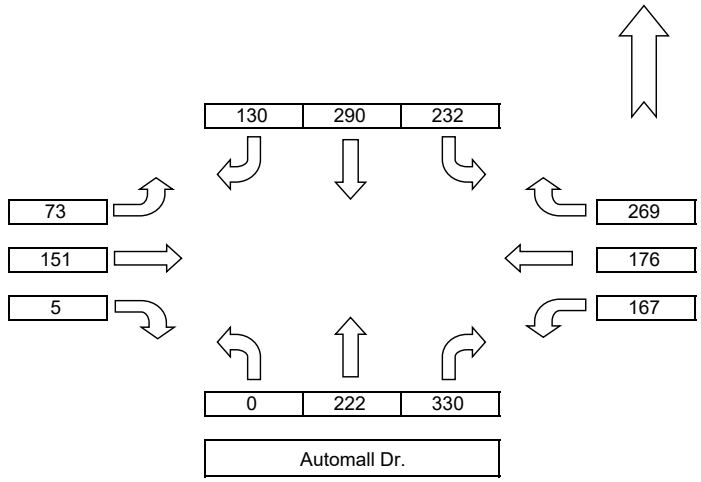
SATURDAY PEAK HOUR VOLUMES

INTERSECTION:
N-S STREET: **Automall Dr.**
E-W STREET: **11000 South**

COUNT DATE: **8/12/2001**
NOTES:

COUNT TIME:
FROM: **12:00 PM**
TO: **2:00 PM**

PK HR VOLUME:	2,045
PHF:	0.95
PEAK HOUR:	
FROM:	TO:
12:30 PM	1:30 PM



Saturday Traffic

COUNT DATA INPUT:

TIME PERIOD		Southbound			Westbound			Northbound			Eastbound			TOTAL
FROM:	TO:	L	T	R	L	T	R	L	T	R	L	T	R	VOLUMES
12:00 PM	12:15 PM	44	51	29	39	46	60	0	40	71	27	41	1	449
12:15 PM	12:30 PM	56	50	32	35	47	55	0	57	65	26	31	1	455
12:30 PM	12:45 PM	56	82	33	38	43	84	0	53	61	15	42	1	508
12:45 PM	1:00 PM	55	68	29	44	48	51	0	57	100	20	33	0	505
1:00 PM	1:15 PM	65	66	31	47	41	67	0	53	63	15	44	1	493
1:15 PM	1:30 PM	56	74	37	38	44	67	0	59	106	23	32	3	539
1:30 PM	1:45 PM	55	66	36	48	36	65	1	58	58	21	31	0	475
1:45 PM	2:00 PM	83	66	36	30	32	64	0	63	76	13	39	0	502

SATURDAY HOURLY TOTALS:

TIME PERIOD		Southbound			Westbound			Northbound			Eastbound			TOTAL	DO NOT DELETE	
FROM:	TO:	L	T	R	L	T	R	L	T	R	L	T	R	VOLUMES	BELOW FORMULAS	
12:00 PM	1:00 PM	211	251	123	156	184	250	0	207	297	88	147	3	1,917	0	0
12:15 PM	1:15 PM	232	266	125	164	179	257	0	220	289	76	150	3	1,961	0	0
12:30 PM	1:30 PM	232	290	130	167	176	269	0	222	330	73	151	5	2,045	1	539
12:45 PM	1:45 PM	231	274	133	177	169	250	1	227	327	79	140	4	2,012	0	0
1:00 PM	2:00 PM	259	272	140	163	153	263	1	233	303	72	146	4	2,009	0	0

NOTE PHF IS BASED ON 15 MIN. PEAK WITHIN THE PEAK HOUR.

Name Kittelson & Associates, Inc.

N-S Street Automall Dr.
E-W Street 11000 South

Date 8/12/2001

Saturday | Truck volumes

5-MINUTE FLOWS

TIME PERIOD		Southbound			Westbound			Northbound			Eastbound			TOTAL
FROM:	TO:	L	T	R	L	T	R	L	T	R	L	T	R	VOLUMES
12:00 PM	12:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:05 PM	12:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:10 PM	12:15 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
12:15 PM	12:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:20 PM	12:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:25 PM	12:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
12:30 PM	12:35 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
12:35 PM	12:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:40 PM	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	12:50 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
12:50 PM	12:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:55 PM	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	1:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:05 PM	1:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:10 PM	1:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
1:15 PM	1:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:20 PM	1:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:25 PM	1:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
1:30 PM	1:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:35 PM	1:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:40 PM	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	1:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:50 PM	1:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:55 PM	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0

Saturday | Pedestrians

5-MINUTE FLOWS

TIME PERIOD					
FROM:	TO:	Southbound	Westbound	Northbound	Eastbound
12:00 PM	12:05 PM	0	0	0	0
12:05 PM	12:10 PM	1	0	0	0
12:10 PM	12:15 PM	0	0	0	0
12:15 PM	12:20 PM	0	0	3	0
12:20 PM	12:25 PM	0	0	0	0
12:25 PM	12:30 PM	0	0	0	0
12:30 PM	12:35 PM	0	0	0	0
12:35 PM	12:40 PM	0	0	0	0
12:40 PM	12:45 PM	0	0	0	0
12:45 PM	12:50 PM	0	0	0	0
12:50 PM	12:55 PM	0	0	0	0
12:55 PM	1:00 PM	0	0	0	0
1:00 PM	1:05 PM	1	0	0	0
1:05 PM	1:10 PM	1	0	0	0
1:10 PM	1:15 PM	3	2	0	0
1:15 PM	1:20 PM	0	0	0	0
1:20 PM	1:25 PM	0	0	0	0
1:25 PM	1:30 PM	0	0	0	0
1:30 PM	1:35 PM	0	0	0	0
1:35 PM	1:40 PM	0	0	0	0
1:40 PM	1:45 PM	0	0	0	0
1:45 PM	1:50 PM	0	0	0	0
1:50 PM	1:55 PM	0	0	0	0
1:55 PM	2:00 PM	0	0	0	0

Memorandum

Material is Confidential
For use only by Costco Wholesale

To: Heidi Macomber
Costco Wholesale Corporation

From: Katherine W. Falk, P.E., PTOE
Edward Y. Papazian, P.E.
Kimley-Horn and Associates

Date: August 3, 2001

RE: Costco Trip Generation Study
(KHA #016276002)

INTRODUCTION

Kimley-Horn and Associates was retained by Costco Wholesale Corporation to conduct a trip generation study for a sample of existing Costco Wholesale locations. The purpose of the study was to collect information regarding the number and types of trips generated by the sites. The study consisted of collecting site traffic volumes through the use of seven-day automatic data recorders and conducting customer surveys at Wholesale Clubs. The overall study included ten locations, some with and others without integrated Costco Gasoline stations.

Following this introduction is a description of the methodology used in conducting the study. The next section presents summaries of the data collected and is followed by key findings and recommendations for trip generation rates and application of primary, pass-by, diverted-link, and internal capture percentages as well as comparisons of resulting study trip rates with other land uses. Finally, the last section presents conclusions of the study.

STUDY METHODOLOGY

Study Locations

Costco staff selected ten locations for this study. The selected sites were deemed to represent a cross-section of typical Costco Warehouses and were intended to be located in such a manner that they were not connected with adjacent properties and land uses. As a result, traffic counts would include only those trips associated with the Costco site. Table 1 lists the locations that were studied and the gross square feet of floor area for each location.

Table 1: Study Locations

Location	Total gross floor area in square feet
Altamonte Springs, Florida	135,229
Aurora, Colorado	133,711
Melville, New York	135,404
West Henrico, Virginia	126,976
Salt Lake City, Utah	119,760
Simi Valley, California	136,296
Spokane, Washington	156,987
Staten Island, New York	121,216
Vallejo, California	125,434
Westminster, Colorado	134,800
Average size	132,581

Traffic Counts

Driveway traffic counts were taken at each location over a continuous seven-day period. These counts were conducted using automatic data recorders placed on each driveway to capture inbound and outbound vehicles. The data from these counts were used to determine trip generation rates. Copies of the traffic counts are included in a separate data collection appendix to this report.

Surveys

Customer surveys were conducted at each site inside the warehouse during one weekday afternoon peak period (4:00PM to 6:00PM) and on one Saturday peak period (10:30AM to 2:00PM). In addition, gas station customers were surveyed at the locations shown in Table 2.

Table 2: Gas Station Survey Locations

Location
Altamonte Springs, Florida
Aurora, Colorado
Simi Valley, California
Staten Island, New York
Vallejo, California

The purpose of both the warehouse and gas station surveys was to obtain information about customers' trip types. Trip types of particular interest for this study were primary, pass-by, diverted link, and internal capture trips.

Analysis Techniques

The analysis for this study included determining trip rates for Costco Wholesale locations with and without integrated gasoline stations using driveway traffic counts. Weekday trip rates were calculated by averaging data for typical weekdays using only those data that seemed reasonable. Summaries of the data are included in the following sections, while data for each location is included in the technical appendix of this report.

DATA COLLECTION SUMMARY

The tables on the following pages summarize the data collected as part of this study.

Driveway Counts
Tables 3 through 6 show driveway counts at each location under a variety of conditions. Table 3 shows the average of Monday through Friday weekday driveway counts, while Table 4 shows the average of Tuesday through Thursday driveway counts. These two summaries are included to provide as much information as possible. Generally, for the purpose of traffic impact studies, weekday counts are collected mid-week, since Monday and Friday counts are not typical weekdays from the standpoint of trip generation. The ITE Trip Generation Report, however, includes Mondays and Fridays in the trip generation calculations. Saturday and Sunday driveway counts are included in Tables 5 and 6, respectively.

Costco Transactions
Costco provided information regarding transactions at the locations with gasoline stations. Table 7 shows a comparison of the 24-hour driveway counts with the daily number of warehouse and gasoline station transactions.

Trip Types
The data from the surveys were used to determine trip patterns associated with customers, and are categorized into four types of trips - primary, pass-by, diverted link, and internal capture trips. Primary trips are defined as those customers who drove specifically to the site and returned directly to their point of origin. Pass-by trips represent customers who stopped at the site on their way to another destination and who did not alter their trip pattern. Diverted link trips represent customers who altered their trip pattern to get to Costco. Internal capture trips represent those patrons who were customers of both the warehouse and the gasoline pumps on the same trip.

Tables 8 and 9 show a summary of the surveys of trip characteristics of warehouse patrons during the weekday PM and Saturday peak hours, respectively. Internal capture trips in Tables 8 and 9 represent warehouse patrons who also patronized the gas pumps. Tables 10 and 11 show a summary of survey results of gas station customers during the weekday PM and Saturday peak hour respectively. Primary trips in Tables 10 and 11 represent gas station patrons who took the trip specifically to purchase gasoline. Internal capture trips in Tables 10 and 11 represent gas pump patrons who also shopped at the warehouse. The peak hours are the weekday commuter peak hours that occur between 7:00AM and 9:00AM and between 4:00PM and 6:00PM and the Saturday and Sunday mid-day peak hours between 10:30AM and 2:00PM. It should be noted that the surveys of trip types were independent of the driveway traffic counts. As a result, locations that were not included in the trip generation calculations, due to unreliability of the data, were included in the tabulation of the different types of trips.

Table 3: Weekday Average Driveway Volumes (Monday through Friday)

	AM Peak Hour				PM Peak Hour				24-Hour		
	Peak Hour	Enter	Exit	Total	Peak Hour	Enter	Exit	Total	Enter	Exit	Total
Locations without Gas Stations											
Melville, New York	8:00-9:00	26	25	51	5:00-6:00	319	217	536	3722	3749	7,471
Salt Lake City, Utah	8:00-9:00	163	44	207	4:00-5:00	249	287	536	3265	3273	6,538
Westminster, Colorado	7:45-8:45	83	53	136	4:30-5:30	272	259	532	2463	1755	4,218
Locations with Gas Stations											
Altamonte, Florida	8:00-9:00	47	67	114	4:00-5:00	332	358	690	3550	3972	7,513
Aurora, Colorado	8:00-9:00	70	75	145	5:00-6:00	368	420	788	4061	4863	8,925
West Henrico, Virginia	8:00-9:00	106	53	163	4:15-5:15	389	343	732	4515	3722	8,237
Simi Valley, California	8:00-9:00	42	27	69	4:45-5:45	646	756	1,402	7,491	7,096	14,586
Spokane, Washington	8:00-9:00	94	98	192	4:15-5:15	518	553	1071	5803	5693	11,496
Staten Island, New York	8:00-9:00	25	39	64	4:45-5:45	344	443	787	3728	4862	8,590
Vallejo, California	8:00-9:00	203	142	345	5:00-6:00	524	586	1110	6584	6588	13,172

Table 4: Weekday Average Driveway Volumes (Tuesday through Thursday)

	AM Peak Hour				PM Peak Hour				24-Hour		
	Peak Hour	Enter	Exit	Total	Peak Hour	Enter	Exit	Total	Enter	Exit	Total
Locations without Gas Stations											
Melville, New York	7:15-8:15	14	32	46	4:00-5:00	305	325	630	3,746	3,664	7,419
Salt Lake City, Utah	8:00-9:00	180	44	224	4:45-5:45	267	301	569	3,312	3,321	6,633
Westminster, Colorado	7:30-8:30	86	70	156	4:00-5:00	283	258	541	3,098	2,577	5,675
Locations with Gas Stations											
Altamonte, Florida	8:00-9:00	40	59	99	4:00-5:00	316	332	648	3,217	3,620	6,836
Aurora, Colorado	8:00-9:00	71	77	147	5:00-6:00	383	406	789	4,118	4,637	8,754
West Henrico, Virginia	8:00-9:00	87	66	153	5:00-6:00	370	310	680	4,342	3,539	7,880
Simi Valley, California	8:00-9:00	11	26	37	4:00-5:00	566	643	1,209	6,217	6,253	12,470
Spokane, Washington	8:00-9:00	92	94	187	4:15-5:15	504	551	1,055	5,656	5,472	11,128
Staten Island, New York	8:00-9:00	25	44	69	4:45-5:45	322	433	755	3,581	4,799	8,380
Vallejo, California	8:00-9:00	225	151	376	5:00-6:00	489	522	1,011	6,223	6,237	12,461

Table 5: Saturday Driveway Volumes

	Peak Hour				24-Hour		
	Peak Hour	Enter	Exit	Total	Enter	Exit	Total
Locations without Gas Stations							
Melville, New York	12:15-1:15	487	469	956	3,312	3,321	6,633
Salt Lake City, Utah	10:30-11:30	607	299	906	4,228	3,999	8,227
Westminster, Colorado	11:15-12:15	495	276	771	4,013	2,902	6,915
Locations with Gas Stations							
Altamonte, Florida	1:00-2:00	597	517	1,114	4,571	4,731	9,302
Aurora, Colorado	12:00-1:00	642	636	1,278	5,076	5,995	11,071
West Henrico, Virginia	11:15-12:15	303	230	533	4,541	5,816	10,357
Simi Valley, California	12:00-1:00	1,329	874	2,203	7,586	7,156	14,742
Spokane, Washington	1:00-2:00	803	870	1,673	6,415	6,781	13,196
Staten Island, New York	12:30-1:30	556	647	1,203	4,853	5,793	10,646
Vallejo, California	12:00-1:00	902	773	1,675	7,497	7,305	14,802

Table 6: Sunday Driveway Volumes

	Peak Hour				24-Hour		
	Peak Hour	Enter	Exit	Total	Enter	Exit	Total
Locations without Gas Stations							
Melville, New York	12:45-1:45	520	449	969	3,404	3,373	6,777
Salt Lake City, Utah	12:00-1:00	632	591	1,223	4,957	4,882	9,839
Westminster, Colorado	11:00-12:00	409	168	577	2,825	1,633	4,458
Locations with Gas Stations							
Altamonte, Florida	1:00-2:00	549	549	1,098	3,771	3,948	7,719
Aurora, Colorado	1:00-2:00	451	617	1,068	3,468	4,754	8,222
West Henrico, Virginia	1:00-2:00	248	242	490	3,982	4,135	8,117
Simi Valley, California	12:00-1:00	1,015	1,149	2,164	7,176	7,291	14,467
Spokane, Washington	1:00-2:00	744	706	1,450	5,225	5,071	10,296
Staten Island, New York	1:00-2:00	598	622	1,220	4,061	4,799	8,860
Vallejo, California	11:30-12:30	801	882	1,683	7,225	7,216	14,441

Table 7: Comparison of Average 24-Hour Driveway Volumes and Warehouse and Gas Station Transactions

	Weekday (Monday-Friday)			Saturday			Sunday		
	2-Way Driveway Volumes	Transactions		Driveway Volumes	Transactions		Driveway Volumes	Transactions	
Location		**Warehouse**	**Gas**	**2-Way**	**Warehouse**	**Gas**	**2-Way**	**Warehouse**	**Gas**
Altamonte, Florida	7,513	2,324	710	9,302	3,160	856	7,719	2,714	740
Aurora, Colorado	8,925	2,928	1,257	11,071	3,744	1,513	8,222	3,059	1,208
West Henrico, Virginia	8,237	2,453	947	10,357	3,381	1,263	8,117	2,627	1,046
Simi Valley, California	14,586	2,912	1,982	24,487	3,750	1,797	20,285	3,382	1,754
Spokane, Washington	11,496	3,222	1,091	13,196	3,853	1,264	10,296	3,178	950
Staten Island, New York	8,590	3,669	479	10,646	3,898	526	8,860	3,530	451
Vallejo, California	13,172	2,690	1,976	14,802	3,038	1,833	14,441	2,891	1,627

Table 8: Trip-Type Percentages, Warehouse Surveys – Weekday PM Period

Location	Peak Hour btwn 4:00PM and 6:00PM				Total btwn 4:00 PM and 6:00 PM			
	Primary	Pass-By	Div. Lk.	Int. Cap.	Primary	Pass-By	Div. Lk.	Int. Cap.
Altamonte, FL	32.3%	41.9%	25.8%	16.1%	42.6%	36.1%	21.3%	18.0%
Aurora, CO	22.2%	44.4%	33.3%	12.5%	28.6%	40.5%	31.0%	21.4%
West Henrico, VA	9.1%	42.4%	48.5%	17.9%	17.5%	40.6%	36.5%	14.3%
Melville, NY	52.5%	20.0%	27.5%	N/A	47.0%	23.5%	29.5%	N/A
Salt Lake City, UT	31.7%	39.0%	29.3%	N/A	40.8%	31.6%	27.6%	N/A
Simi Valley, CA	35.0%	60.0%	5.0%	39.1%	39.5%	55.8%	4.7%	44.2%
Spokane, WA	34.7%	28.6%	36.7%	37.8%	34.3%	31.5%	34.3%	30.6%
Staten Island, NY	25.0%	66.7%	8.3%	14.3%	34.2%	55.7%	10.1%	17.1%
Vallejo, CA	28.6%	53.6%	17.9%	77.8%	34.8%	45.7%	19.6%	52.2%
Westminster, CO	26.5%	67.3%	6.1%	N/A	31.3%	61.4%	7.2%	N/A
Average	29.8%	46.4%	23.8%	30.8%	35.1%	42.8%	22.2%	28.3%
Weighted Average	33.2%	42.5%	24.3%	28.1%	36.6%	39.8%	23.6%	26.9%

N/A – Not applicable, no gas station.

Table 9: Trip-Type Percentages, Warehouse Surveys – Saturday Period

Location	Peak Hour btwn 10:30AM and 2:00PM				Total btwn 10:30AM and 2:00PM			
	Primary	Pass-By	Div. Lk.	Int. Cap.	Primary	Pass-By	Div. Lk.	Int. Cap.
Altamonte, FL	81.3%	18.8%	25.8%	10.0%	66.0%	26.4%	7.5%	19.8%
Aurora, CO	43.3%	36.7%	19.4%	25.8%	46.7%	24.3%	29.0%	28.0%
West Henrico, VA	50.0%	26.5%	23.5%	26.5%	39.7%	32.8%	27.5%	21.4%
Melville, NY	50.0%	40.9%	9.1%	N/A	54.6%	32.6%	12.8%	N/A
Salt Lake City, UT	60.6%	15.2%	24.2%	N/A	56.3%	17.5%	26.2%	N/A
Simi Valley, CA	75.0%	16.7%	8.3%	37.5%	68.9%	24.6%	6.6%	29.5%
Spokane, WA	43.8%	27.1%	29.2%	20.8%	50.0%	26.2%	23.8%	18.9%
Staten Island, NY	49.2%	49.2%	1.6%	10.4%	53.8%	44.9%	1.3%	10.7%
Vallejo, CA	57.9%	36.8%	4.8%	33.3%	51.4%	35.7%	12.9%	32.9%
Westminster, CO	48.6%	33.3%	18.1%	N/A	49.4%	33.8%	16.9%	N/A
Average	56.0%	30.1%	13.8%	23.5%	53.7%	29.9%	16.4%	23.0%
Weighted Average	52.2%	33.5%	14.3%	23.1%	52.8%	31.7%	15.5%	20.2%

N/A – Not applicable, no gas station.

Table 10: Trip-Type Percentages, Gas Station Surveys – Weekday PM Period

	Peak Hour btwn 4:00PM and 6:00PM				Total btwn 4:00 PM and 6:00 PM			
Location	Primary	Pass-By	Div. Lk.	Int. Cap.	Primary	Pass-By	Div. Lk.	Int. Cap.
Altamonte, FL	9.1%	22.7%	6.8%	61.4%	8.9%	29.1%	8.9%	53.2%
Aurora, CO	14.3%	14.3%	0.0%	71.4%	12.5%	25.0%	0.0%	87.5%
Simi Valley, CA	8.8%	26.5%	5.9%	58.8%	14.1%	28.2%	3.8%	53.8%
Staten Island, NY	10.7%	28.6%	14.3%	46.4%	13.5%	26.9%	17.3%	48.1%
Vallejo, CA	23.1%	34.6%	7.7%	34.6%	18.6%	34.3%	11.4%	35.7%
Average	13.2%	25.3%	6.9%	54.5%	13.5%	28.7%	8.3%	55.7%
Weighted Average	12.3%	26.0%	7.5%	56.2%	13.5%	29.4%	8.9%	51.2%

Table 11: Trip-Type Percentages, Gas Station Surveys – Saturday Period

	Peak Hour btwn 10:30AM and 2:00PM				Total btwn 10:30AM and 2:00PM			
Location	Primary	Pass-By	Div. Lk.	Int. Cap.	Primary	Pass-By	Div. Lk.	Int. Cap.
Altamonte, FL	6.5%	19.4%	3.2%	51.6%	6.0%	19.5%	7.4%	61.9%
Aurora, CO	12.5%	25.0%	12.5%	50.0%	21.1%	15.8%	5.3%	57.9%
Simi Valley, CA	8.7%	30.4%	26.1%	34.8%	9.4%	24.7%	21.2%	44.7%
Staten Island, NY	8.3%	35.4%	12.5%	43.8%	11.9%	33.8%	15.2%	39.1%
Vallejo, CA	8.0%	44.0%	4.0%	44.0%	16.2%	30.9%	5.9%	45.6%
Average	8.8%	30.8%	11.7%	44.8%	12.9%	24.9%	11.0%	49.8%
Weighted Average	8.0%	29.3%	9.8%	46.0%	11.1%	24.7%	10.9%	51.3%

PRESENTATION OF RESULTS

Definition of Trip Generation

Trip generation is generally defined as the number of vehicle trips attracted by a specific land use. For the purposes of this study, we are interested in the number of vehicles attracted to a Costco Wholesale site. Trip generation is often calculated using average trip rates. Average trip rate is defined as " the weighted average of the number of vehicle trips or trip ends per unit of independent variable using a site's driveway(s)."[1] The weighted average is calculated by summing all data and all independent variable units where paired data are available, and then dividing the sum of the data points by the sum of the independent variable units. Weighted averages are often calculated to determine the influence of data sets with large variances. The most meaningful independent variable for a land use such as Costco Wholesale locations is generally 1,000 square feet of gross floor area (GFA). In most traffic impact studies, trip rates are applied to the peak hours of adjacent street traffic. This represents the one-hour trip generation rate at the site between the traditional commuting periods of 7:00AM to 9:00AM and 4:00PM to 6:00PM. Other peak hours of trip generation are the Saturday and Sunday mid-day peak hours of retail activity, which generally occur between 10:30AM and 2:00PM. Another important measure of trip generation is the daily trip rate. This is important for planning purposes for comparing levels of activity at different locations.

Based on observations taken at the locations studied and the traffic count results, it appears that some sites provide better data than others do. For example, the counts taken at the Simi Valley, California site are significantly higher than the range of counts at the other sites. Conversations with the traffic counters indicated that the configuration of the driveways is such that cars may have passed over the traffic counting tubes diagonally, thus artificially inflating the number of vehicles counted. Only a manual count would be able to facilitate better counts at that particular location. In addition, there are two outparcels that have been constructed adjacent to the Westminster, Colorado location. These two outparcels share driveway access with the Costco Wholesale Club, therefore the counts include traffic from all three uses. The Aurora, Colorado and Salt Lake City, Utah sites also have shared access with neighboring restaurants; thus the counts include traffic volumes for the restaurants in addition to the wholesale clubs.

Trip Generation Rates

Using the traffic volume counts and the information regarding the size of each location, trip generation rates were calculated for each location. These trip rates are expressed as trips per 1,000 square feet of gross floor area. Tables 12 and 13 show weekday trip generation rates.

Table 12: Weekday Trip Generation Rates – Locations without Gas Stations

Location	AM Peak Hour			PM Peak Hour			24-Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Melville, NY	0.19	0.17	0.38	2.36	1.60	3.96	27.49	27.69	55.18
Salt Lake City, UT[1]	1.36	0.37	1.73	2.08	2.40	4.48	27.26	27.33	54.59
Westminster, CO[1]	0.62	0.39	1.01	2.02	1.93	3.95	18.27	13.02	31.29
Average	0.19	0.17	0.38	2.15	1.98	4.13	24.34	22.68	47.02

[1] Not included in AM average due to presence of adjacent land uses.

[1] *Trip Generation*, 6th Edition, Volume 3 of 3*, User's Guide*, Institute of Transportation Engineers, c. 1997, page 9.

Table 13: Weekday Trip Generation Rates – Locations with Gas Stations

Location	AM Peak Hour			PM Peak Hour			24-Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Altamonte, FL	0.35	0.49	0.84	2.46	2.64	5.10	26.25	29.31	55.56
Aurora, CO	0.52	0.56	1.08	2.75	3.14	5.89	30.37	36.38	66.75
West Henrico, VA	0.83	0.45	1.28	3.06	2.7	5.76	35.56	29.31	64.87
Simi Valley, CA	0.31	0.20	0.51	4.74	5.55	10.29	54.96	52.06	107.02
Spokane, WA	0.60	0.62	1.22	3.30	3.52	6.82	36.96	36.27	73.23
Staten Island, NY	0.21	0.32	0.53	2.84	3.65	6.49	30.76	40.11	70.87
Vallejo, CA	1.62	1.13	2.75	4.18	4.67	8.85	52.52	52.49	105.01
Average	0.63	0.54	1.17	3.33	3.70	7.03	38.19	39.43	77.61

Tables 14 and 15 show the resulting trip rates associated with the driveway volume counts on weekends.

Table 14: Weekend Driveway Trip Generation Rates – Locations without Gas Stations

Location	Saturday Pk			Saturday 24-Hour			Sunday Peak			Sunday 24-Hour		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Melville, NY	3.60	3.46	7.06	24.46	24.53	48.99	3.84	3.32	7.16	25.14	24.91	50.05
Salt Lake City, UT[1]	5.07	2.50	7.57	35.30	33.40	68.70	5.28	4.93	10.21	41.39	40.77	82.16
Westminster, CO	3.67	2.05	5.72	29.77	21.53	51.30	3.03	1.25	4.28	20.96	12.11	33.07
Average	3.63	2.76	6.39	27.12	23.03	50.14	3.44	2.28	5.72	23.05	18.51	41.56

[1] Not included in averages due to presence of adjacent land uses.

Table 15: Weekend Driveway Trip Generation Rates – Locations with Gas Stations

Location	Saturday Pk			Saturday 24-Hour			Sunday Peak			Sunday 24-Hour		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Altamonte, FL	4.41	3.83	8.24	33.80	34.99	68.79	4.06	4.06	8.12	27.89	29.19	57.08
Aurora, CO	4.80	4.76	9.56	37.96	44.84	82.80	3.37	4.62	7.99	25.94	35.55	61.49
West Henrico, VA	2.39	1.81	4.20	35.76	45.81	81.57	1.95	1.91	3.86	31.36	32.57	63.93
Simi Valley, CA	9.75	6.41	16.16	55.66	52.50	108.16	7.45	8.43	15.88	52.65	53.49	106.14
Spokane, WA	5.12	5.54	10.66	40.86	43.20	84.06	4.74	4.50	9.24	33.28	32.31	65.59
Staten Island, NY	4.59	5.33	9.92	40.04	47.79	87.83	4.93	5.13	10.06	33.50	39.59	73.09
Vallejo, CA	7.19	6.16	13.35	59.77	58.24	118.01	6.39	7.03	13.42	57.60	57.53	115.13
Average	5.46	4.84	10.30	43.41	46.76	90.17	4.70	5.10	9.79	37.46	40.03	77.49

Gas Station Trip Types

One of the purposes of conducting the patron surveys and gathering the transaction information was to determine the effects of the gas stations on trip generation. Of particular interest was the determination of the percentage of driveway traffic that represented trips associated purely with the gas station. The survey results were also used to determine the types of trips associated with the gas station, such as primary trips, pass-by trips, and combined gas station/warehouse trips. Tables 16 and 17 show comparisons of driveway counts to gas station volumes in the PM and Saturday peak periods, respectively.

Table 16: Comparison of PM Peak Period (4:00PM to 6:00PM) Driveway Counts to Gas Station Trips

Location	Overall Site 2-Way Driveway Volume	Gasoline Transactions and Vehicle Volumes			Trip-Types								
					Primary + Diverted Link			Pass-By			Internal Capture		
		# of Trans-actions	Vehicle Volume (1)	% of Driveway Volume	Trip-type %	Vehicle Volume	% of Driveway Volume	Trip-type %	Vehicle Volume	% of Driveway Volume	Trip-type %	Vehicle Volume	% of Driveway Volume
Altomonte, FL	1,342	177	354	26	17.8	63	5	29.1	103	8	53.2	188	14
Aurora, CO	1,561	222	444	28	12.5	56	4	25.0	111	7	62.5	278	18
Simi Valley, CA	2,747	281	562	20	17.9	101	4	28.2	158	6	53.8	302	11
Staten Island, NY	1,554	79	158	10	25.0	40	3	30.6	48	3	48.1	76	5
Vallejo, CA	2,195	298	596	27	30.0	179	8	34.3	204	9	35.7	213	10
Average (2)				26			5			8			13

(1) Vehicle volume calculated by multiplying number of transactions by two. Each transaction represents an entering and exiting movement.
(2) Average does not include the Staten Island, NY location, which appears to have unusually low gasoline transaction figures.

Table 17: Comparison of Saturday Peak Period (10:30AM to 2:00PM) Driveway Counts to Gas Station Trips

Location	Overall Site 2-Way Driveway Volume	Gasoline Transactions and Vehicle Volumes			Trip-Types								
					Primary + Diverted Link			Pass-By			Internal Capture		
		# of Trans-actions	Vehicle Volume (1)	% of Driveway Volume	Trip-type %	Vehicle Volume	% of Driveway Volume	Trip-type %	Vehicle Volume	% of Driveway Volume	Trip-type %	Vehicle Volume	% of Driveway Volume
Altomonte, FL	3,654	359	718	20	14.3	103	3	20.7	149	4	65	467	13
Aurora, CO	4,006	567	1134	28	26.4	299	7	15.8	179	4	57.9	657	16
Simi Valley, CA	5,710	510	1020	18	30.6	312	5	24.7	252	4	44.7	456	8
Staten Island, NY	3,787	188	376	10	27.1	102	3	33.8	127	3	39.1	147	4
Vallejo, CA	5,528	533	1066	19	22.1	236	4	30.9	329	6	47.1	502	9
Average (2)				21			5			5			12

(1) Vehicle volume calculated by multiplying number of transactions by two. Each transaction represents an entering and exiting movement.
(2) Average does not include the Staten Island, NY location, which appears to have unusually low gasoline transaction figures.

KEY FINDINGS AND RECOMMENDED TRIP GENERATION RATES

The key findings of these driveway counts and surveys are as follows:

1. The daily trip generation rates shown in Tables 12 through 15 indicate that the Costco Warehouses with gas stations have higher trip rates than Costco Warehouses without gas stations.

2. These higher daily trip generation figures are consistent with the results in Tables 16 and 17, which show that gasoline transactions generally represent approximately 25 percent of total transactions for the facility.

3. In terms of increases in trips on the adjacent roadway, the figures in Tables 16 and 17 show that the gas station would result in approximately five percent more trips. This is based on the figures shown in the columns for "primary and diverted link" trips.

4. The peak hour figures shown in Tables 12 through 15 also indicate the higher trip generation rates for facilities with gas stations compared with those without gas stations.

5. Table 8 shows that the percentage of pass-by trips for warehouse patrons during the PM commuter peak hour and for the two-hour PM period is approximately 40 percent. The percentage of primary trips during both periods is approximately 35 percent.

6. Table 9 shows that the percentage of pass-by trips for warehouse patrons during the Saturday mid-day peak hour and the three and one-half mid-day period is approximately 32 percent compared to 40 during the weekday PM commuter period, while the percentage of primary trips is approximately 52 percent, compared to 35 percent during the weekday PM commuter period.

7. Tables 10 and 11 show that the percentages of primary trips among gas station patrons range from 8 to 13 percent, with an average figure of 10 percent.

8. The recommended trip generation rates and in/out distribution percentages resulting from this study are as follows:

Table 18: Recommended Trip Generation Rates and Distribution Percentages

	Costco Warehouse Two-Way Trip Rates			
	Without Gas Station		With Gas Station	
Time Period	Rate	In/Out	Rate	In/Out
Weekday AM Peak Hour	0.38	51/49	1.17	54/46
Weekday PM Peak Hour	4.13	52/48	7.03	47/53
Weekday Daily	47.02	50/50	77.61	50/50
Saturday Mid-day Peak Hour	6.39	57/43	10.30	53/47
Saturday Daily	50.14	50/50	90.17	50/50
Sunday Mid-day Peak Hour	5.72	60/40	9.79	48/52
Sunday Daily	41.56	50/50	77.49	50/50

9. The recommended pass-by trip percentages are shown in Table 19. Also shown on this table are recommended percentages that could be used for other types of trips.

Table 19: Potential Trip-Type Percentages

Time Period	Wholesale Trips				Gasoline Station Trips			
	Primary	Pass-By	Div. Lk.	Int. Cap.	Primary	Pass-By	Div. Lk.	Int. Cap.
Weekday PM	35%	40%	25%	25%	14%	30%	8%	53%
Saturday Mid-day	54%	32%	14%	20%	12%	25%	11%	50%

The trip-types shown for the gasoline station are based on those for which the purchase of gasoline was deemed to be the reason for the visit. The remainder of the gas station patrons represent those whose primary purpose was to shop at the Costco warehouse and are shown as internal capture trips.

Comparisons Of Data Results With Similar Uses

The following table shows a comparison of trip generation volumes for an average Costco Warehouse site using trip rates from this study and trip generation equations from the ITE Trip Generation report for comparable land uses, including those land uses that Costco is typically asked to use in traffic studies. The ITE land use codes are as follows:

Code 861 – Discount Club
Code 820 – Shopping Center, non-holiday
Code 850 – Supermarket
Code 813 – Free-Standing Discount Superstore

Table 20 shows the trip generation comparisons per thousand square feet for the Costco locations and for the other land uses based on the average size of the Costco facilities that were surveyed.

Table 20: Trip Rate Comparisons

Trip Rate	Costco Without Gas	Costco With Gas	Code 861 Discount Club	Code 820 Shopping Center	Code 850 Grocery	Code 813 Discount Superstore
Weekday AM Peak	0.38	1.17	0.65	1.43	7.23	1.84
Weekday PM Peak	4.13	7.03	3.88	5.70	9.65	3.82 (1)
Weekday 24-hour	47.02	77.61	41.80	61.64	111.51	46.96
Sat. Peak	6.39	10.30	6.46	7.90	12.22	4.91 (1)
Sat. 24-hour	50.14	90.17	53.75	82.35	177.59	55.06
Sun. Peak	5.72	9.79	5.62	3.12	18.93	4.27
Sun. 24-hour	41.56	77.49	33.67	47.42	166.44	43.45

(1) In our judgement, these figures are unusually low and possibly unreliable. These numbers are based on a small and limited sample.

Table 21 shows the pass-by trip percentages obtained from the Costco surveys compared to other land uses as shown in the ITE Trip Generation Manual.

Table 21: Pass-By Trip Percentage Comparisons

Time Period	Costco	Code 861	Code 820	Code 850	Code 813
Weekday PM Peak	40%	N/A	34%	36%	N/A
Saturday Peak	32%	N/A	26%	N/A	N/A

CONCLUSIONS

Conclusions

The information presented in this study can be used by Costco Wholesale to forecast traffic volumes at new sites based on the size of the facility as well as the anticipated market and/or sales volume. The trip rate comparisons included in this study indicate that the locations studied have higher trip rates than some land uses against which Costco is sometimes compared, but in some cases the trip rates are lower. The pass-by trip percentages derived as part of this study show that for those land uses for which there was a comparison, Costco pass-by trip percentages are higher. The technical appendix to this report contains spreadsheets with detailed information that may be of additional help.

Regarding trip generation rates, Costco may desire to use the information provided as part of this study on a case-by-case basis. For the most part, the ITE Land Use Code 861 (Discount Clubs) is favorable to Costco, in that the average trip rates are somewhat lower than those observed in this study. On the other hand, using anticipated sales volumes and geography as additional variables, Costco may wish to use the results of this study to forecast driveway volumes.

The trip-type figures obtained in this study may be of greater use by Costco in its work to secure approvals by local jurisdictions. These jurisdictions may be more willing to accept results of such surveys as opposed to accepting trip rate calculations that may be different than those contained in the ITE Trip Generation report.

SURVEY – COSTCO WHOLESALE CLUB TRAVEL DATA COLLECTION

Location _____ **Name of Surveyor** _____

Date of Survey _____ **Weather Conditions** _____

Approach patron and ask: "Do you mind if I ask you a few questions regarding your visit to the Costco Wholesale Club today?"

Time of Day	**Q1. Where did your trip begin immediately prior to arriving here?** A. Home B. Work C. Other Retail Stores D. Other	**Q2. From here, will you go directly back to where you began your trip?** A. Yes (skip Q3, go to Q4) B. No	**Q3. Was it necessary to change your normal driving route to get here?** A. No B. Yes, if yes, approximately how far out of your way (miles) did you travel to get here?	**Ask Question 4** → → → → **ONLY if there are Costco gas pumps at your location**	**Q4. Did you, or are you going to get gas at the Costco gas pumps today?** A. Yes A. No

EXHIBIT D

LANDSCAPE LEGEND (SYMBOLS SHOWN AT 1"=20')

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE / CONDITION
	TRANSPLANTED OREGON WHITE OAK TREES (QUERCUS GARRYANA)		SEE ARBORIST REPORT FOR TREE INFORMATION, TRANSPLANTING, AND MAINTENANCE. INSTALL WITH 3" DEPTH COARSE ARBORIST CHIPS.
	DECIDUOUS SHADE TREES		
	ACER TRUN. X ACER PLAT. 'WARRENRED'	PACIFIC SUNSET MAPLE	MIN. 2" CAL., MIN. 10–12' HT., MATCHED, FULL & WELL–BRANCHED ABOVE 6' HT., B&B.
	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	
	GINKGO BILOBA 'AUTUMN GOLD'	AUTUMN GOLD GINKGO (MALE ONLY)	
	GLEDITSIA T. INERMIS 'SHADEMASTER'	SHADEMASTER HONEYLOCUST	
	QUERCUS GARRYANA	OREGON WHITE OAK	
	ZELKOVA SERRATA 'VILLAGE GREEN'	VILLAGE GREEN ZELKOVA	
	DECIDUOUS ACCENT TREES		
	ACER CIRCINATUM	VINE MAPLE	MIN. (3) 1" CAL., 8'–10' HT., MULTI–TRUNKED, MATCHING SPECIMEN, WELL–BRANCHED, B&B.
	AMELANCHIER ALNIFOLIA	WESTERN SERVICEBERRY	
	CORNUS KOUSA	KOUSA DOGWOOD	
	CONIFEROUS EVERGREEN TREES		
	CALOCEDRUS DECURRENS	INCENSE CEDAR	MIN. 8'–10' HT., FULL AND BUSHY TO BASE, B&B
	PSEUDOTSUGA MENZIESII	DOUGLAS FIR	
	THUJA PLICATA 'HOGAN'	HOGAN RED CEDAR	
	LARGE SHRUBS		
	ARBUTUS UNEDO 'COMPACTA'	DWARF STRAWBERRY TREE	24–30" HT., FULL & BUSHY, B&B OR CONT., SPACING AS SHOWN.
	CORNUS SERICEA	RED OSIER DOGWOOD	
	ILEX CRENATA 'CONVEXA'	CONVEXA JAPANESE HOLLY	
	MAHONIA AQUIFOLIUM	OREGON GRAPE	
	MYRICA CALIFORNICA	PACIFIC WAX MYRTLE	
	ROSA RUGOSA	RUGOSA ROSE	
	SYMPHOCARPUS ALBUS	COMMON SNOWBERRY	
	MEDIUM SHRUBS		
	EUONYMUS A. 'COMPACTA'	COMPACT BURNING BUSH	MIN. 5 GAL. CONT., 21–24" HT. AND SPREAD, FULL AND BUSHY, SPACING AS SHOWN.
	RIBES SANGUINEUM	RED FLOWERING CURRANT	
	MAHONIA A. 'COMPACTA'	COMPACT OREGON GRAPE	MIN. 5 GAL. CONT., 18–21" HT. AND SPREAD, FULL AND BUSHY, SPACING AS SHOWN.
	ROSA NUTKANA	NOOTKA ROSE	
	VACCINIUM OVATUM	EVERGREEN HUCKLEBERRY	
	SMALL SHRUBS		
	CORNUS KELSEYI	KELSEY DOGWOOD	MIN. 2 GAL. CONT., MIN. 15" HT. & SPREAD, FULL & BUSHY, SPACING AS SHOWN.
	PINUS M. MUGO	DWARF MUGHO PINE	
	VIBURNUM DAVIDII	DAVID VIBURNUM	
	ORNAMENTAL GRASSES / ACCENTS		
	CALAMAGROSTIS A. 'KARL FOERSTER'	FEATHER REED GRASS	1 GAL. CONT., FULL & BUSHY, SPACING AS SHOWN.
	HELICTOTRICHON SEMPERVIRENS	BLUE OAT GRASS	
	POLYSTICHUM MUNITUM	SWORD FERN	5 GAL. CONT., FULL & BUSHY, SPACING AS SHOWN.
	GROUNDCOVERS		
	ARCTOSTAPHYLOS UVA–URSI	KINNIKINNICK	1 GAL. CONT. AT 18" O.C. TRIANG. SPACING, START FIRST ROW 12" FROM EDGE.
	FRAGARIA CHILOENSIS	WILD STRAWBERRY	
	MAHONIA REPENS	CREEPING MAHONIA	
	RHUS AROMATICA 'GRO–LOW'	GRO–LOW SUMAC	
	NATIVE GROUNDCOVER MIX:		
	GAULTHERA SHALLON	SALAL	1 GAL. CONT. AT 18" O.C. TRIANG. SPACING, START FIRST ROW 12" FROM EDGE. EQUAL QUANTITIES OF EACH. PLANT IN GROUPS OF 5–7 IN RANDOM DRIFTS.
	MAHONIA REPENS	CREEPING MAHONIA	
	POLYSTICHUM MUNITUM	SWORD FERN	
	SWALE PLANTING MIX:		
	CAREX OBNUPTA	SLOUGH SEDGE	1 GAL. CONT. AT 18" O.C. TRIANG. SPACING, START FIRST ROW 12" FROM EDGE. EQUAL QUANTITIES OF EACH. PLANT IN GROUPS OF 5–7 IN RANDOM DRIFTS.
	ELEOCHARIS PALUSTRIS	GREAT SPIKE RUSH	
	IRIS TENAX	OREGON IRIS	
	SOD LAWN		90% TURF–TYPE TALL FESCUE, 10% KENTUCKY BLUEGRASS, SEE SPECIFICATIONS

0 25' 50' 100'
1" = 50'-0"

COSTCO WHOLESALE
SALEM, OR

SALEM, OR

REGISTERED LANDSCAPE ARCHITECT
ANDREW RASMUSSEN
OREGON
4/5/2018

PLANTING NOTES

1. ALL NEW LANDSCAPE AREAS ARE TO BE WATERED WITH AN AUTOMATIC WATER CONSERVING IRRIGATION SYSTEM. SEE IRRIGATION PLANS.
2. MULCH ALL SHRUB AND GROUNDCOVER AREAS WITH A MINIMUM 3" DEPTH OF SPECIFIED MULCH.
3. WHERE GROUNDCOVER IS SHOWN, IT SHALL BE PLANTED AT THE SPECIFIED SPACING THROUGHOUT THE BED, INCLUDING AREAS UNDERNEATH TREES AND SHRUBS, START FIRST ROW 12" FROM EDGE OF BED.
4. SEE CIVIL DRAWINGS FOR GRADING, UTILITIES AND EROSION CONTROL.
5. CONTRACTOR SHALL PROVIDE DIGITAL PHOTOS OF A REPRESENTATIVE TREE, SHRUB, OR GROUNDCOVER FOR ALL MATERIALS IN LEGEND BELOW FOR LANDSCAPE ARCHITECT REVIEW AND ACCEPTANCE PRIOR TO PROCUREMENT. THIS SHALL ESTABLISH THE STANDARD FOR APPROVED MATERIAL.
6. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

ADDITIONAL NOTES FOR PRICING OF PRELIMINARY LANDSCAPE PLAN:

1. ALL PLANT MATERIALS TO BE OF THE HIGHEST QUALITY. PROVIDE DIGITAL PHOTOS FOR LANDSCAPE ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
2. INSTALL MINIMUM 4" DEPTH HIGH QUALITY IMPORT TOPSOIL. USE ADDITIONAL TOPSOIL AS NEEDED TO CROWN BEDS MINIMUM 6" ABOVE ADJACENT CURBS.
3. IMPORT TOPSOIL SHALL BE SELECT, FERTILE, SCREENED (1/2"), WELL–DRAINED, WEED–FREE, BALANCED MATERIAL COMPOSED OF SAND, COMPOST AND A SMALL AMOUNT OF CLAY/SILT TO BE CLASSIFIED AS SANDY LOAM UNDER USDA CLASSIFICATION. TOPSOIL SHALL BE TESTED AT APPROVED TESTING LAB FOR CONFIRMATION OF SOIL TEXTURE AND CLASSIFICATION. IF CLASSIFIED AS SANDY LOAM, THEN TEST FOR PH, TRACE MINERALS, SALINITY, N, P, K AND AMENDMENT RECOMMENDATIONS TO ACHIEVE A PH BALANCED FERTILE TOPSOIL WITH MINIMUM 6% ORGANIC MATERIALS DERIVED FROM VEGETATIVE COMPOST. INCORPORATE STARTER FERTILIZER AND PLANT TABS PLUS FERTILIZER AND SOIL AMENDMENTS AS RECOMMENDED IN REPORT AT NO ADDITIONAL COST.
4. ALL LANDSCAPE AREAS TO BE PROVIDED WITH A IRRIGATION SYSTEM INCLUDING THE FOLLOWING ITEMS:
   - HUNTER MP–ROTATOR SPRAY HEADS AT PERIMETERS
   - NETAFIM TECHLINE CV DRIP LINES IN INTERIOR
   - SCHEDULE 40 PVC MAINLINE
   - CLASS 200 PVC LATERALS
   - 40 RAINBIRD PEB–PRS–D CONTROL VALVES
   - RAINBIRD ESP–LXD CONTROLLER WITH IQ CLOUD
   - SEPARATE IRRIGATION METER AND BACKFLOW DEVICE WITH ENCLOSURE
5. INSTALL 4" PERFORATED SUB DRAINS FOR ALL INTERIOR LANDSCAPE ISLANDS, CONNECTING TO STORM DRAIN SYSTEM.
6. REFER TO COSTCO STANDARD PLANTING AND IRRIGATION SPECIFICATIONS AND DETAILS FOR INSTALLATION AND REVIEW REQUIREMENTS.

LANDSCAPE CALCULATIONS (PROVIDED FOR PERMITTING PURPOSES ONLY)

TOTAL EAST SIDE BUILDING AREA =	174,650 S.F. (168,550 + 6,100)
EAST SIDE SITE AREA =	20.56 ACRES (895,393 SF)
EAST SIDE LANDSCAPE AREA REQUIRED =	134,309 S.F. (15%)
EAST SIDE LANDSCAPE AREA PROVIDED =	167,565 S.F. (18.7%)
INTERIOR LANDSCAPING:	
TOTAL INTERIOR PARKING LOT AREA =	390,600 S.F. (EXCL. DRIVEWAYS)
TOTAL INTERIOR LANDSCAPING REQUIRED =	31,248 S.F. (8%)
TOTAL INTERIOR LANDSCAPING PROVIDED =	41,520 S.F. (10.6%)
EAST SIDE PARKING STALLS =	894
EAST SIDE INTERIOR TREES REQUIRED = (1 TREE PER 12 STALLS)	75 (894/12 STALLS)
EAST SIDE INTERIOR TREES PROVIDED =	170+
LANDSCAPE ISLANDS AND PLANTER BAYS =	MIN. 5' WIDTH, MIN. 25 S.F.

PLANT UNITS:

EAST SIDE LANDSCAPED AREA =	145,835 S.F. (EXCL. EXISTING EASEMENTS)
TOTAL PLANT POINTS REQUIRED = (1 P.U. PER 20 S.F. LANDSCAPED AREA)	7,292 P.U.
TOTAL PLANT POINTS PROVIDED =	11,099 P.U.
PLANT POINTS REQUIRED FROM TREES =	2,917 P.U. (40% OF TOTAL REQUIRED)
PLANT POINTS PROVIDED FROM TREES =	3,039
SHADE TREES =	259 X 10 = 2,590
EVERGREEN/CONIFER TREES =	57 X 5 = 285
ORNAMENTAL TREES =	82 X 2 = 164
LARGE SHRUBS =	1,152 X 2 = 2,304
SMALL/MEDIUM SHRUBS =	3,356 X 1 = 3,356
LAWN OR GROUNDCOVER (SF)=120,000/50 =	2,400

TREE MITIGATION

EXISTING SIGNIFICANT TREES (TO BE TRANSPLANTED):	8
TOTAL EXISTING TREES (10"+) TO BE REMOVED: (SEE CIVIL DRAWINGS FOR TREE MAP & TABLE)	71
NUMBER OF TREES REQUIRING MITIGATION:	18 (25%)
ADDITIONAL TREES REQUIRED FOR MITIGATION:	36 (2:1)
ADDITIONAL TREES PROVIDED FOR MITIGATION:	36 (EVERGREENS)

WEISMANDESIGNGROUP
LANDSCAPE ARCHITECTURE
2329 E MADISON ST SEATTLE WA 98112
206-322-1732 WWW.WDGINC.COM

17-0413-01
JUNE 2, 2020

PRELIMINARY LANDSCAPE PLAN

L1.1

KUEBLER GATEWAY SHOPPING CENTER - EAST SIDE LANDSCAPE PLAN

SALEM, OREGON

JUNE 2, 2020

COMMERCIAL REALTY ADVISORS NORTHWEST LLC

June 11, 2020

Ms. Shari Reed
Vice President
Pacific Realty Associates LP
15350 SW Sequoia Parkway
Suite 300
Portland, Oregon 97224

Dear Shari,

At your request, I have reviewed the conceptual site plan prepared by MG2 Architects labeled as "NW Option" dated April 27, 2020, and have the following observations as it relates to the viability of that site plan for development of a retail shopping center on the property located at 2500-2600 Block of Boone Rd. SE, Salem Oregon 97306.

I have worked as a commercial broker in the Pacific Northwest market since 2004. That market includes Salem, Oregon. In my capacity as a commercial broker, I have assisted large and small retailers with site selection and design. Over my career working with retailers on site selection and design, I have gained significant experience with and knowledge of the critical site layout design elements that are required for a viable retail development. I am a member of the International Council of Shopping Centers (ICSC), the Retail Brokers Network (RBN) and I am on the Board of Directors for the Commercial Association of Brokers (CAB). I am a licensed real estate broker in the state of Oregon and Washington. The observations in this letter pertain to retail shopping centers in general and apply equally to a Costco anchored shopping center as well as other similarly anchored shopping centers.

In my professional opinion, the "NW Option" layout is unsafe and includes significant disadvantages to the extent that no reasonable retailer (large or small) would locate there – whether it be a major anchor like Costco or smaller retailers featured on retail pads. It is economically unviable. The reasons follow:

Site Layout/Curb Appeal

- The "NW Option" orients the anchor retail buildings such that the back of the buildings face Kuebler Blvd. The positioning of the anchor retail buildings with backs facing the primary artery of Kuebler Blvd creates a challenging and unsafe layout, which will significantly impact leasing the project. A significant component of a successful retail shopping center is potential customers having a desire to shop there which begins with a sense of welcome at the shopping center. The "NW Option" exposes the backside of the buildings, service access, storage, and trash enclosures along Kuebler Blvd, thus inhibiting customer ability to see the retail storefronts, location of site access, and if there is adequate parking (retail customers are unwilling to drive around to find distant parking). Those initial disadvantages will discourage customers from shopping at the property and incentivize them to pursue other shopping options, such as shopping online. Retailers are acutely aware of this. Accordingly, retail businesses and retail property owners spend enormous amounts of time and money to create an attractive shopping center and the perception (and reality) of a pleasing shopping experience, especially in the post-Covid landscape with substantial e-commerce competition. Retail tenants will only select sites in which they may create an inviting atmosphere

where customers can easily find their store and quickly see that parking is available, and feel relatively at ease. Local examples include other anchored retail along S. Commercial in Salem, including Fred Meyer, Walmart, WinCo and Trader Joe's, all of whom have storefronts with exposure to the main traffic flow and parking between the entry points and the primary street.

- The "NW Option" with/without Costco places the anchor retail buildings along Kuebler Blvd., which requires a fire lane on the backside of the building, along with an area for deliveries, back-of-house storage and trash enclosures, significantly diminishing the curb-appeal of the shopping center along Kuebler Blvd.

Safety

- A reasonably safe parking lot is essential to retailers. This "NW Option" site does not create a reasonably safe parking lot. Rather, the "NW Option" plan puts a major barrier of large trees in the middle of the main parking field that obscures the view for parking and parked vehicles. Accordingly, customers have to navigate around the tree barrier, through this obscured area of the parking lot to access the retail businesses. This layout creates a lack of visibility for vehicles attempting to park as well as for pedestrians to see such vehicles and increases the likelihood of pedestrian / vehicle collisions. It is well-established that retail shopping centers must maintain line of sight through parking areas to enhance safety. The lack of line of sight visibility through the tree barrier may create safety concerns for customers.

- Parking to the south of the tree grove will be viewed by customers and retailers alike as inconvenient and potentially unsafe due to impaired visibility to the storefronts, particularly for seniors, customers with disabilities and/or shopping with small children.

Parking Adequacy/Convenience

- The shopping center is inadequately parked for any retail anchor, as well is inconvenient and unsafe for customer and employee parking with the tree barrier located in the middle of the primary parking field.

- The parking is inadequate both in number of stalls and the depth of the parking field. Sufficient parking is essential to ensure the success of a suburban shopping center. Anchor and general retail tenants expect the amount of available parking to be no less than 5 stalls per 1,000 sf (5/1,000 sf) of gross leasable area (GLA), but preferably closer to 7 stalls per 1,000 sf (7/1,000 sf). The parking demand for restaurants is significantly higher at 10- stalls per 1,000 sf (10/1,000 sf). Furthermore, sophisticated national and regional retailers will generally not count on their customers utilizing parking that is not immediately proximate and visible to their store entry. Shared parking needs to be truly convenient and safe for the intended users, and sufficient in numbers for all of the anticipated uses, accounting for both customers and employees. In order to ensure the best possible opportunity for leasing the retail space on the western portion of the site, a minimum of 7 stalls per 1,000 sf (7/1,000 sf) must be guaranteed there and preferably more. The "NW Option" fails to meet the expectations of today's retailers and customers for sufficient convenient parking. With 9.9 stalls per 1,000 sf (9.9/1,000 sf) on the west and only 3.13 stalls per 1,000 sf (3.13/1,000 sf) on the east, this option has a significant parking deficit, which means that it is not economically viable. The "NW Option" must be contrasted with the Preferred Plan that has 9.9 stalls per 1,000 sf (9.9/1,000 sf) on the west and 5.12 stalls per 1000 sf (5.12/1,000) on the east for a total overall parking provided for the shopping center of 5.6 per 1,000 sf, which is the bare minimum in my opinion for economic viability for the reasons explained.

- There is approx. 74 (18%) fewer parking spaces in the primary parking field on the "NW Option" than are in the primary field of the existing Salem Costco store. It is well known that the existing Salem Costco store has insufficient parking and only has two points to enter/exit the parking lot, one of which conflicts with customers trying to reach the fueling stations. One of the reasons Costco wishes to relocate to this site is to greatly improve their customer shopping experience by having more opportunities to access the parking lot and fueling positions, sufficient safe, and easily accessible parking, and pedestrian safety .

- The approx. 175 parking stalls to the east of the major retail building will be viewed by retailers largely as "employee parking" and not realistic customer parking given the distance from the primary retail business storefront, and the fact that it is separated from the anchor tenant not only by such distance but also a major entrance (the right in off of Kuebler).

- Because the "NW Option" provides inadequate parking for Costco this creates untenable competition for the parking that does exist between the Costco and the small shop retailers at the NE corner of the site.

Retail Shop Pads

- Placing the fueling positions on the SE corner of the site along Boone, facing the residential neighborhood is not a viable design. Noise, traffic, fuel deliveries, and vehicle headlights facing the neighbors' homes are incompatible. Moreover, this "NW Option" creates unsafe traffic conflicts for customers who wish to reach the fueling positions from the NE parking field because they must cross over the major access drive to reach the fueling positions, enter the parking field and to exit the site. This will make it unsafe and difficult not only for customers from the NE parking field, but also for customers attempting to enter the site from the roundabout on 27th St.

- If Costco were replaced with anchor retailers that did not have fueling stations, in my opinion, the supporting retail pad(s) would replace the fueling center on the SE corner of the site. This location will make this site undesirable for tenants and customers alike. Small shop retail tenants have a greater chance of survival if they have visibility, and so they seek to lease space where they are in front of the major retail business, along the major arterial. This "NW Option" places the retail pad(s) in the SE corner where grade separation and landscape requirements greatly impair visibility from Kuebler Blvd., and therefore fails to offer a viable retail space.

- Retail shops and pads would be disjointed and disconnected from the larger shopping center, diminishing the continuity of the shopping center experience. This is a significant problem in and of itself; when combined with the other site disadvantages, the disjointed and disconnected site plan offers little to no chance of retail success for those retailers and, as stated previously, they are unleasable.

Vehicle/Pedestrian Conflicts at Main Entrance

- The main entrance off the roundabout on 27th Street is congested and creates unacceptable conflicts between pedestrians trying to navigate through the parking field to and from Costco.

- The main entrance off of 27th Street is congested and creates unacceptable vehicle movement conflicts between vehicles attempting to enter and exit the site, vehicles moving within the site

trying to find parking in the south and east fields and vehicles attempting to gain access to the fueling positions and to the exit on Boone.

- Vehicles entering the shopping center off of 27th street headed to the fuel positions located in the SE corner are immediately forced to turn left across the flow of pedestrian and traffic exiting the shopping center to the 27th Street roundabout.

In summary, based upon my extensive experience working with retail and developer clients in the Pacific Northwest, I believe that the retail clientele in Salem, Oregon will not tolerate anything but a safe, adequately parked shopping experience with excellent ingress and egress. Today's shopping center formats are designed to maximize the shopping experience for their customers and to provide financial viability of the retailers. Unattractive, inefficient, and/or unsafely parked retail developments have a significant chance of failure. From a leasing perspective, the "NW Option" site plan is not safe, under-parked and inefficient for deliveries, and shopping such that retailers would conclude that it does promote success or for tenants to compete with online retailers. It is simply not an economically viable retail shopping center layout in any respect.

Sincerely,

Jeff Olson
Commercial Realty Advisors NW
(503) 957-1452 | jeff@cra-nw.com

T I L A N D / S C H M I D T
A R C H I T E C T S , P . C .

June 12, 2020

Ms. Shari Reed
Vice President
Pacific Realty Associates LP
15350 S.W. Sequoia Parkway
Suite 300
Portland, Oregon 97224

Re: Kuebler Gateway Shopping Center
Salem, Oregon

Dear Shari,

Thank you for this opportunity to comment on the proposed Plans designated as the NW Option and the Proposed Site Plan for Kuebler Gateway Shopping Center in Salem, Oregon.

As a licensed Architect for 37-years in 7-states (Oregon, Washington, Alaska, California, Idaho, Montana and Colorado) and a member of the American Institute of Architects (AIA), and the National Council of Architectural Registration Boards (NCARB) who has completed countless shopping center projects, I have extensive experience in the design and layout of retail shopping centers. There is a list of criteria that professional architects run through whenever the layout of a site begins. There are the four key principles that are kept in mind throughout the process of designing a shopping center: Fire, Life, Safety and Parking. First, one always wants to design with ease of firefighting, fire access and fire exiting. Second, Life which comes in the face of preserving, resolving and extending the life of those using the site as well as the proper use of material, and enhancement of the quality of the surroundings as these type of developments are thoughtfully placed within our communities. Third, Safety, which comes in the manner of everything from a very well laid out and functional site parking arrangement to an ease of circulation for all those who will navigate around the site on foot, bike or in a motorized vehicle. Fourth, is a shopping center site must have adequate parking. A shopping center with less than an average of 5 parking spaces per 1,000 sq.ft. of leased space will fail to meet the parking requirements of today's sophisticated tenants. This is well-established in the shopping center industry. I have reviewed the Proposed Site Plan submitted by the applicants. At slightly greater than 5 parking spaces per 1,000 sq.ft, any less parking spread across the various areas as proposed is not viable. The retail pads to the west require a minimum of 7 spaces per 1,000 sq.ft. because sought after retail tenants such as shops, cafes, fast casual or full-service restaurant, will simply require minimum parking within that ratio.

We have all had numerous shopping center experiences, and know that when the parking is well laid out and straightforward, locating a parking stall is much easier; it feels and is, in fact, safer and ultimately is a place where people will shop given the competing alternatives of e-commerce. Customers feel significantly less stress finding a parking space when they have a clear view of aisles and drives showing places available to park.

3611 S. HOOD AVE., SUITE #200 PORTLAND, OREGON 97239
(503) 220-8517 FAX (503) 220-8518

Re: Kuebler Gateway Shopping Center
Salem, Oregon
June 12, 2020
Page 2 of 3

This comment is particularly relevant to the trees that are shown to be retained on the NW Option. Retaining those trees require customers to navigate around the central grove of trees in the NW Option and obstacles they create, which results in an untenable shopping experience that is both unsafe and frustrating. Customers will not only burn more of our natural resources by staying in their cars for a longer period of time, but also the trees create a visual obstacle that produces unsafe conflicts in circulating where customers cannot see parking spaces or pedestrians with shopping bags/carts/kids, etc., and vice versa. A well-planned shopping center is also safer from a fire protection/emergency response standpoint. If the parking lot is not planned well, shoppers struggle to finds parking and often circle the lot searching for parking. That congestion is unsafe if there is ever a need for emergency vehicles to access the shopping center. Moreover, one can only imagine a senior citizen with limited eyesight and abilities, but still very independent, trying to navigate their way in an area that is poorly laid out. This in itself is begging for safety issues to arise and should there be a lack of parking, that only exaggerates the situation.

In my opinion, based on my 37 years of experience, a qualified architect or design professional would not layout a retail shopping center consistent with the NW Option. As I explained above, it would not function well for customers and retailers. Consequently, I do not feel the NW Option results in economically viable shopping center. It would not attract retailers that generate the rent one needs to sustain a shopping center and would not attract customers needed to sustain a high-quality shopping center. Professional architects are trained and accept that what we have today is on a path for something better. This of course comes with a lot of thoughtful planning and creative solutions.

The significant challenges presented in the NW Option can be completely avoided by adoption of the Proposed Site Plan. Unquestionably, the organization and simplicity of the applicant's Proposed Site Plan is far superior to the NW Option. In the Proposed Site Plan, one understands the overall organization of the entire site in a very short period of time. The site is well organized and is safe to navigate whether on foot or in a vehicle.

Allowing the placement of the Costco store along Boone Road, as the Proposed Site Plan illustrates, the setback and buffers can be well defined and the landscaping would complement the back wall of the building, which will help to quiet the activities along the north side of the building. In addition, having the defined access points and the convenience of the access to the western portion of the site once again allows for easy access, which equates to more efficient movements for all vehicles entering the site.

One must also look at the overall longevity of any shopping center site plan layout, its relation to its surroundings and the economic viability of the plan. Sites that lend themselves to thoughtful organization, which develop safer situations, have historically been more successful and an asset to

Re: Kuebler Gateway Shopping Center
Salem, Oregon
June 12, 2020
Page 2 of 3

the community which cannot be said of the NW Option. Poorly designed sites like the "NW Option" are not viable and the owner will struggle to attract and retain tenants, if at all. We have all seen similar shopping centers that face constant tenant turnover and owners are forced to offer below market rents in order to attract whatever tenants they can. These factors negatively impact the financial viability of a shopping center and thus the neighboring community.

As I conclude here, one project comes to mind that we did in West Linn, Oregon. Unfortunately, the community involvement was rather confrontational at times. The developer knew that this was a center that would thrive in this community and be appreciated far beyond its current condition of disrepair. This project of course took some time to get approved and built. The greatest day was when the one individual who was the most vocal, against it, had an opportunity to talk to the developer again. What proceeded was a surprise to all when he literally apologized for his actions. He recognized that that the developer did bring an outstanding project to the area and when it came to the trees, that raised the largest issue, there were many more trees as part of the development than were ever cut down. I can see that happening here also. The Proposed Site Plan addresses the code issues, will provide a well-organized and complete shopping center along with trees for not only now but the future of this area.

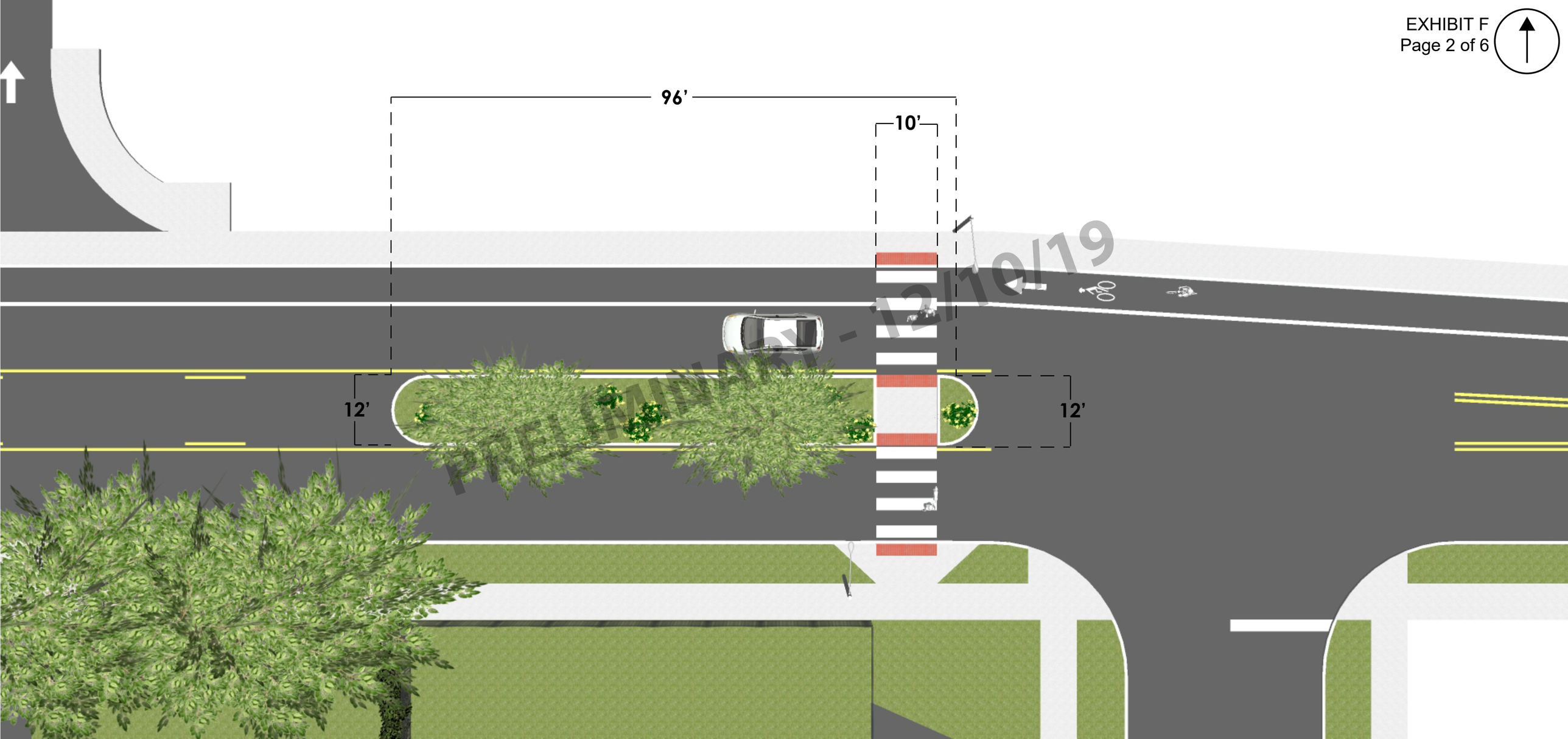
Please feel free to contact me on this should you like to discuss further.

Sincerely,
Frank M. Schmidt AIA

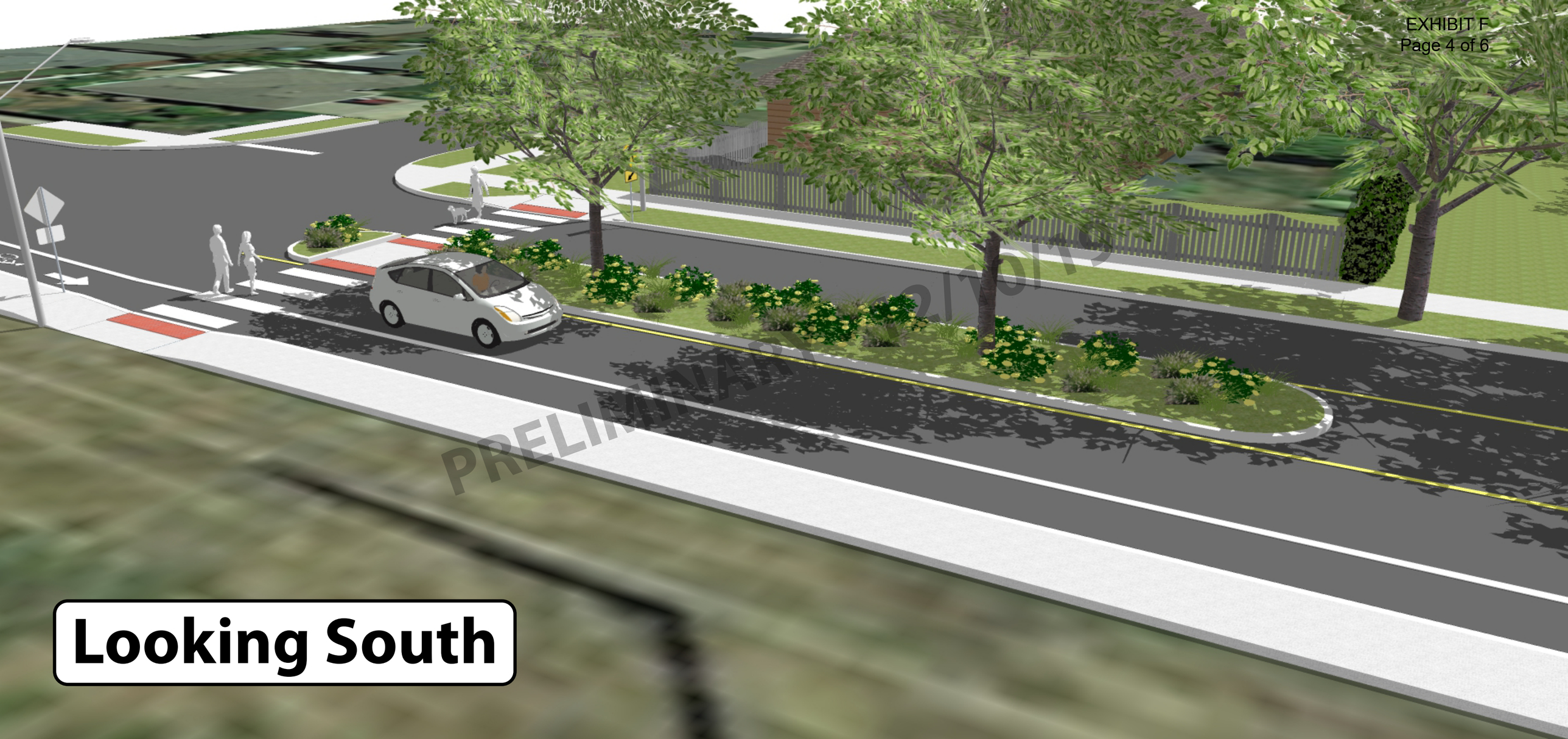
Tiland/Schmidt Architects PC
3611 South Hood Avenue
Suite 200
Portland, OR 97239
503-220-8517

Cc: file

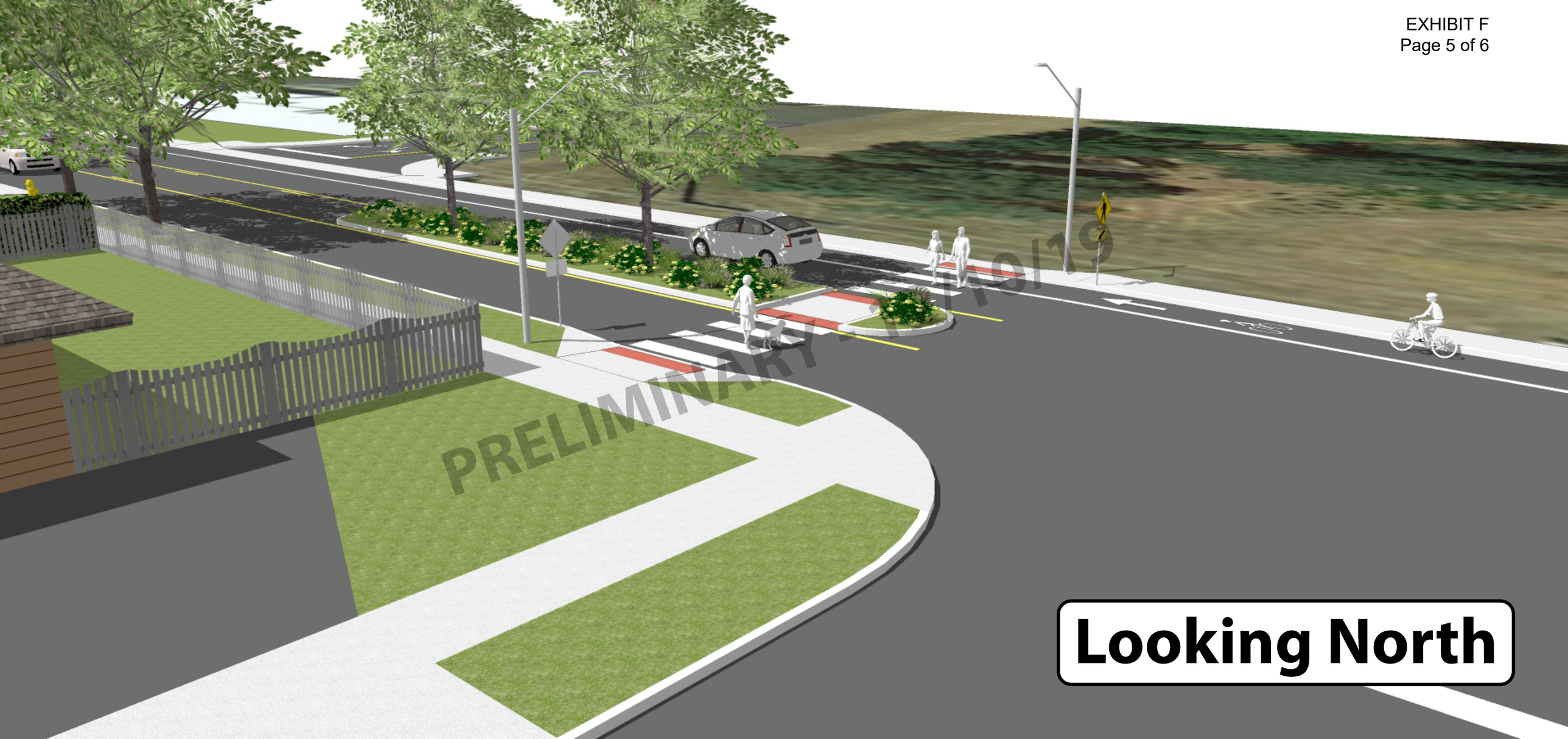
BOONE RD SE
CULTUS AV SE
RILEY CT SE
BOW CT SE
BATTLE CREEK RD SE
FORT ROCK AV SE
CULTUS CT SE
FOXHAVEN DR SE
OBSIDIAN CT SE
LAVA CT SE


96’
10’
12’
12’
PRELIMINARY - 12/10/19


PRELIMINARY 12/10/19
Looking West



Looking South


PRELIMINARY - 10/30/19
Looking North

Looking East

PACTRUST

15350 SW Sequoia Parkway, Suite 300
Portland OR 97224
503.624.6300
pactrust.com

June 15, 2020

VIA EMAIL

City Council
City of Salem
555 Liberty St SE, RM 220
Salem, OR 97301
citycouncil@cityofsalem.net

Re: Kuebler Gateway Shopping Center
Salem, Oregon

Dear City Council Members:

I am a Vice President, Asset Manager at PacTrust. My real estate portfolio includes the Kuebler Gateway Shopping Center. In my capacity as an Asset Manager, I have direct responsibility for overseeing the financial aspects of this property including but not limited to financial knowledge of all expenditures including operating expenses and development costs.

I am familiar with the proceedings that resulted in the December 2007 City Council Decision approving development of a unified retail shopping center and related medical/office buildings. Soon after the City's zone change approval, the United States entered into the Great Recession. As such, the economic recovery was slow and PacTrust was in no position to move forward with development of this project without significant pre-leasing. The initial lease commitments in the project came from medical users rather than retailers. PacTrust eventually entered into a long-term lease with the Salem Clinic and PT Northwest, bringing the medical/office component of the project to 71% preleased, which allowed proceeding with Phase I of the development. In 2013, the two medical/office buildings were completed. Concurrently, PacTrust was actively engaged in the design process and discussions with national, regional and local retailers for the retail portion of the project. Under no circumstances would Pac Trust ever have proceeded with developing only the Salem Clinic and related medical/office buildings if we did not believe we had a vested right in developing a shopping center consistent with the shopping center concepts approved by, and included in the record of, the 2007 Decision.

PacTrust and its affiliate M &T Partners, Inc. obtained site plan review approval for the Salem Clinic and related medical/office buildings in 2012. Pac Trust/M&T then commenced work preparing the site (mass grading, etc.), completing public transportation improvements for mitigation of impacts from this phase of the project, and construction of the buildings including tenant improvements. That work was completed in late 2013. As stated above, I am very familiar with the expenditures PacTrust/M&T incurred completing the development work.

Between 2012 and 2019, Pac Trust/M&T completed preliminary work to prepare the remaining portion of the site for the development of the approved retail shopping center. PacTrust/M&T completed some mass grading and other infrastructure work, and design work for future public improvements. But, the largest expenditure was for improvements to the public transportation system, primarily improvements to Kuebler Road. That work was undertaken consistent with the conditions of approval contained in the 2007 Decision. The improvement work was not required under the 2007 Decision's conditions until development of the retail shopping center occurred. However, in 2015 at the City's request, PacTrust/M&T paid the City $3.0 Million towards the total cost of $3.21 Million (94%) for the widening of Kuebler Blvd. to accommodate the City and its funding efforts for work the City was obligated to pay for.

I have reviewed the records related to expenditures PacTrust/M&T made towards completing the development of a unified retail shopping center and related medical clinic/office buildings since the 2007 Decision. Below is the list of the expenditures actually paid by PacTrust/M&T for the approved development:

- $3,765,190 on public transportation facility improvements required as conditions of approval.
- $789,990 on mass grading to prepare the site for construction of the medical clinic and medical/office buildings and marketing the remaining portion of the site as a shopping center.
- $3,370,960 on completing the Salem Clinic medical center building.
- $1,657,956 to complete tenant improvements required for Salem Clinic.
- $2,066,320 to complete the second medical office building.
- $615,393 to complete the tenant improvements necessary to lease a portion of the second medical/office building.
- $558,952 on additional mass grading in preparation for developing a shopping center on the 18.4-acre parcel.
- $253,142 to complete waterline improvements on Kuebler Blvd.
- $78,747 on design work and application material for development of the retail shopping center.
- $210,717 on design work for remaining future public roadway improvements.

The expenditures total $13,367,367. All of the expenditures relate directly to the development of the project approved in the 2007 Decision. As I stated above, PacTrust/M&T would never have proceeded with the development of the Salem Clinic and related medical office buildings if it did not have the right to complete the retail shopping center.

Very truly yours,

Shari L. Reed
Vice President

SUMMARY TABLE

Kuebler Gateway Shopping Center East - (PacTrust Property)

SITE		BUILDING		PARKING	
Zone:	Commercial Retail	New Bldg Proposed Use:	Shopping Center	New Bldg Auto Parking:	876
Comp. Plan:	Commercial	New Total Gross Floor Area:	174,650 SF	New Handicap Parking:	18
Site Area:	20.96 acres (20.56 acres after ROW dedication)	Building Height:	35'	New Compact Parking:	0 stalls
Exist Site Impervious Area:	0.00 acres	Total Bldg. Lot Coverage:	19%	Total Parking Required	699 stalls (1/250 sf)
Exist Site Pervious Area:	895,393 SF (20.56 acres)			Total Parking Provided	894
Disturbed Site Area:	895,393 SF (20.56 acres)			Parking Lot Landscaping Required (8%)	31,248 SF
New Site Impervious Area:	727,828 SF (16.71 acres)			Parking Lot Landscaping Provided (8%)	41,520 SF
New Site Pervious/Landscape Area:	167,565 SF (3.84 acres, 18.7%) (15% or 134,309 SF required)			Interior Parking Lot Area	390,600 SF
Total Green Stormwater Area:	9840 (1)			Bicycle Parking Required	10 Bike stalls
				Bicycle Parking Provided	10 Bike stalls

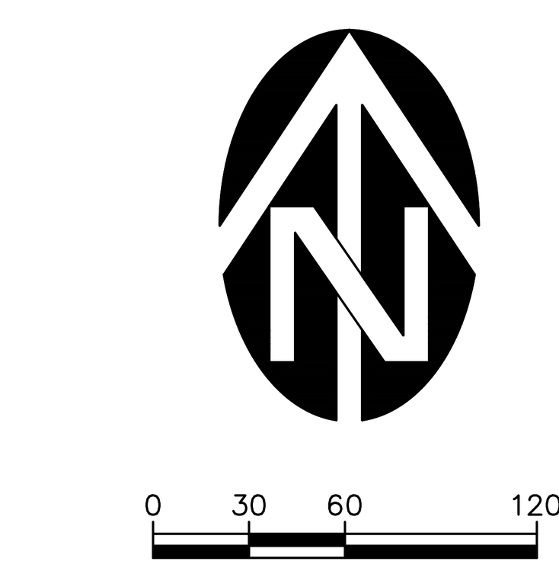
Kuebler Gateway Shopping Center West - (M&T Partners Property)

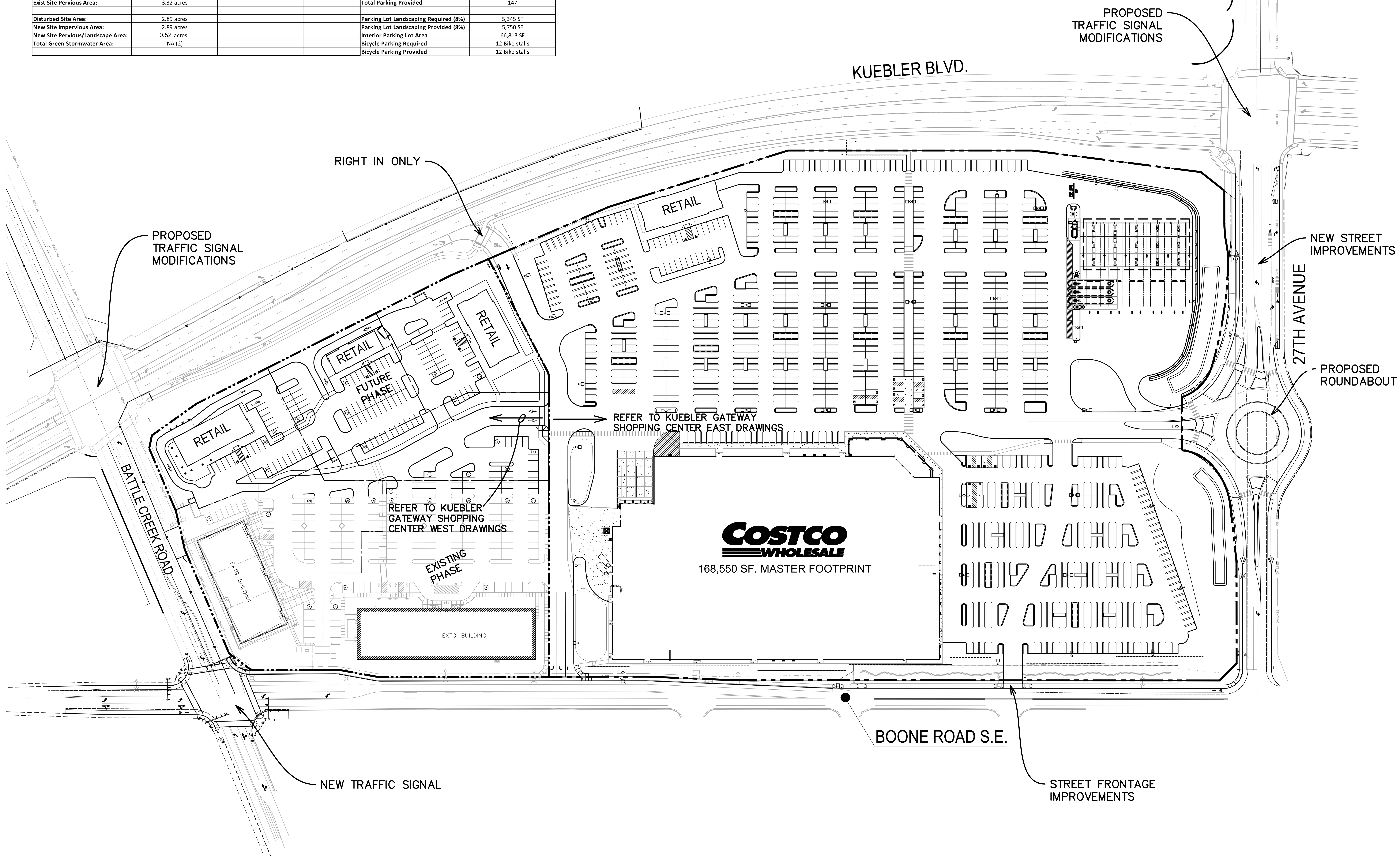
SITE		BUILDING		PARKING	
Zone:	Commercial Retail	New Bldg Proposed Use:	Shopping Center	New Bldg Auto Parking:	147
Comp. Plan:	Commercial	New Total Gross Floor Area:	14,900 SF	New Handicap Parking:	6
Site Area:	3.40 acres	Building Height:	less than 35ft	New Compact Parking:	6
Exist Site Impervious Area:	0.081 acres	Total Bldg. Lot Coverage:	5%	Total Parking Required	60 stalls (1/250 sf)
Exist Site Pervious Area:	3.32 acres			Total Parking Provided	147
Disturbed Site Area:	2.89 acres			Parking Lot Landscaping Required (8%)	5,345 SF
New Site Impervious Area:	2.89 acres			Parking Lot Landscaping Provided (8%)	5,750 SF
New Site Pervious/Landscape Area:	0.52 acres			Interior Parking Lot Area	66,813 SF
Total Green Stormwater Area:	NA (2)			Bicycle Parking Required	12 Bike stalls
				Bicycle Parking Provided	12 Bike stalls

Kuebler Gateway Shopping Center COMBINED

SITE		BUILDING		PARKING	
Zone:	Commercial Retail	New Bldg Proposed Use:	Shopping Center	New Bldg Auto Parking:	1023
Comp. Plan:	Commercial	New Total Gross Floor Area:	189,550 SF	New Handicap Parking:	24
Site Area: (after ROW Dedication)	23.96 acres	Building Height:	35'	New Compact Parking:	6
Exist Site Impervious Area:	0.081 acres	Total Bldg. Lot Coverage:	17%	Total Parking Required	759 stalls (1/250 sf)
Exist Site Pervious Area:	23.88 acres			Total Parking Provided	1053
				Maximum Parking Allowed	1328
Disturbed Site Area:	23.88 acres			Parking Lot Landscaping Required (8%)	36,593 SF
New Site Impervious Area:	19.60 acres			Parking Lot Landscaping Provided (8%)	47,270 SF
New Site Pervious/Landscape Area:	4.36 acres (18.2%) (15% required, or 3.58 acres)			Interior Parking Lot Area	457,413 SF
Total Green Stormwater Area:	9,840 SF (1)(2)			Bicycle Parking Required	22 Bike stalls
				Bicycle Parking Provided	22 Bike stalls

Notes
(1) Refer to Kuebler Shopping Center West Stormwater Report & Grading and Drainage Plans for GSI compliance.
(2) This is not applicable because there is an existing stormwater management plan for this subdivision.





NO.	1
DATE	
DESCRIPTION	
REVISIONS	
BY	

SCALE
HORIZ: AS SHOWN
VERT: AS SHOWN

DSN. JW
DRN. TN
CKD. JW
DATE: MAY 2018

REVIEW

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

M&T PARTNERS & PACIFIC REALTY ASSOCIATES
KUEBLER GATEWAY SHOPPING CENTER

OVERALL PLAN

DRAWING
C2.0

JOB NUMBER
2672.8001.0