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ASTORIA FAIRFIELD

DESIGN REVIEW

PROJECT INFORMATION

Project Name:	Astoria Fairfield
Applicant:	Craig Riegelnegg – Carleton Hart Architecture 830 SW 10 th Avenue, #200 Portland OR 97205 (503) 206-3191 craig.riegelnegg@carletonhart.com
Owner:	Hollander Hospitality Contact: Mark Hollander 119 North Commercial Street Bellingham, WA 98225
Property Address:	1 2nd St. Astoria OR 97103
Zoning Designation:	C-3 – General Commercial Bridge Vista Overlay Zone
Date Submitted:	Original Submittal: April 10, 2018 Revised: June 15, 2018 Revised: September 12, 2018

Project Description

The proposed Astoria Fairfield is a 66-unit hotel established under the Marriott brand. However, the project team's goal in crafting a design for the project is to draw on the storied history of river-based industry in the City of Astoria to house a new hotel use within a classic aesthetic. The team has researched and implemented the character of the late 19th century working waterfront in the town, updating methods and materials where needed but ultimately loyal to the context of the past.

Site

The project is in a C-3 (General Commercial) Zone, on a site northwest of the intersection of Marine Drive and Second Street. The site sits between the Columbia River estuary waterfront to the north and a 76 gas station/ convenience store and Josephson's Smokehouse to the south. The former Stephanie's Cabin, owned by Hollander Hospitality, sits at the southwest corner of the block. Though there is currently no plan in place for reuse, Hollander is exploring options and discussing the Stephanie's Cabin property with potential tenants.

This structure is a part of the overall property and as such is included in any calculations involving the entire project site. Given that it is currently unknown when and for what use Stephanie's Cabin will be rehabilitated, any future renovation will be a separately permitted project and all code requirements, including parking, will be addressed for that building at that time. The existing structure that formerly housed the Ship Inn restaurant and bar will be the only architecture to be demolished to prepare the site for the new project.

The site is in the Bridge Vista Overlay Zone. This zone has additional design guidelines established to honor and preserve the working waterfront character along this portion of the Columbia River frontage. The project's responses to BVO requirements are thoroughly documented below in Article 14, and their point-by-point adherence to the codified requirements as detailed. The development's overarching design approach draws from the aesthetic character, construction methods, durable material selection and simple functionally-minded detailing of applicable context to suit a new piece of architecture built for the City of Astoria.

Design Considerations

Though Marriott is a corporate hotel chain with standard prototypes, the proposed Fairfield Inn and Suites is a site-specific design that references the spirit of the City's past and the human-scale experience of visitors to and residents of the City. As prescribed by the BVO, the scale and size of the building is smaller than typical hotels to avoid crowding the River Trail or growing out of scale with the surrounding context. The architecture considers observers from all frontages and meets them with details and architectural elements specifically designed with their vantage points and experience in mind.

The building's north elevation faces the public River Trail/Riverwalk, a pedestrian pathway elevated over the water's edge on a trestle structure. The Riverwalk is frequently used by visitors to the City passing on foot or riding on the Riverfront Trolley. The building elevation facing this route is articulated to maximize visual interest while addressing the industrial historical context through material choice and articulation. A gray v-groove siding reminiscent of cladding on the old canneries wraps the main body of the building. It is contrasted by trim, roofing and other accent elements in black to enhance their depth and visual interest.

The red board and batten found in the historic industrial Union Fishermen's Cooperative buildings appears as a secondary cladding at the east form, a single story entry and lobby area, to enliven the other neutral base colors of the exterior. A patio sits to the north of this area, for guests to dine on during fair weather months, visually connected to the activity on the Riverwalk. These guests also look onto the low pitched roof, covered in black standing seam metal roofing for a classic industrial appearance, with a small line of clerestory glazing rising up at the roof peak.

The east elevation meets the river terminus of Second Street with a generously glazed exterior frontage, with large openings articulated with mullions dividing the lites into a three-bay 2'x4' grid, separated by pilasters and surrounded by trim details directly based on working waterfront precedents in Astoria. The roof of the low street-fronting form and the larger guestroom wing of the project beyond run at the same 3:12 pitch, with a gentle 2:12 awning extending over the southeast corner entry on a trim-clad timber frame.

The south elevation applies the red board-and-batten to a circulation tower, with the color reappearing at a steel-framed exterior egress stair at the opposite west end. The stair, a pure and functional design, nevertheless acts a sculptural elements and densely detailed anchor to the long south frontage on this side. Guestrooms span this middle section, with a similar trim composition to the storefront glazing, adapted from researched examples and painted black in a unique, site-specific touch.

The west elevation celebrates the steel stair, as well as the simple rectangular geometry of the building as it steps back from the Riverwalk to create deck elements for guests, while abiding by the requirements of the Development Code to allow relief and view clearance along the trestle. This elevation also clearly shows the board-formed concrete shell of the ground floor, a nod to industrial construction that merges the structural and

the aesthetic as it concealed covered parking behind. Black steel grates screen this parking area where openings are distributed in alignment with the windows above, for ventilation, light, and visual dialogue with the observer that recalls the same feeling of attractive and functional simplicity created on the floors above.

The project site is gracefully managed in order to provide for the building's parking needs while screening and buffering paved areas with vegetation. Green space is interspersed throughout the site to divide and accentuate the new hotel, the existing restaurant to remain, parking area, drives, streets, and the Columbia River. Sitework for the project is designed to facilitate the pedestrian connection to and across the hotel's lot, to introduce veins of natural growth to the riverfront block and to enhance the relationship of the project to the City.

ARTICLE 2: ZONING

Note: Citations from the Astoria Development Code are referenced as they are relevant to the proposed project. Where code sections are not relevant, they are omitted for brevity.

C-3: GENERAL COMMERCIAL ZONE

Citation: 2.385. PURPOSE. This zone is primarily for a wide range of commercial businesses, including most of those allowed in other commercial zones. Compared to the C-4 Zone, the C-3 Zone is more appropriate for uses requiring a high degree of accessibility to vehicular traffic, low intensity uses on large tracts of land, most repair services, and small warehousing and wholesaling operations. Unlike the C-4 Zone, there are maximum lot coverage, landscaping, and offstreet parking requirements for all uses.

Response: The proposed use is a commercial business, meeting all requirements for lot coverage, landscaping, parking, and all other general and zone-specific requirements. Reference design documents in Part 2 and responses below.

Citation: 2.390. USES PERMITTED OUTRIGHT. The following uses and their accessory uses are permitted in a C-3 Zone if the Community Development Director determines that the uses will not violate standards referred to in Sections 2.400 through 2.415, additional Development Code provisions, the Comprehensive Plan, and other City laws:

[Only applicable listings shown]

10. Motel, hotel, bed and breakfast, inn, or other tourist lodging facility and associated uses.

Response: Number 10 on the list of uses permitted outright includes "hotel" as the use.

Citation: 2.400. LOT COVERAGE. Buildings will not cover more than 90 percent of the lot area.

Response: The project site includes six separate taxlots, or parcels. The Owner intends to consolidate parcels in conjunction with permitting for the Astoria Fairfield, and for the purposes of this submittal the property is addressed as one taxlot. Any work at Stephanie's Cabin will be permitted separately, but design and permitting will be coordinated as needed to satisfy permit

requirements for the Astoria Fairfield. Any renovation of Stephanie's Cabin will not modify the building footprint from the existing 4,573 square feet.

The footprint of the proposed project is 11,798 square feet. Lot coverage has been calculated based on the six parcels taken together as the Project site, at 56,140 square feet, as the combined lot coverage of the Astoria Fairfield and the former Stephanie's Cabin. This yields 21.0%.

Citation: 2.405. LANDSCAPED OPEN AREA. A minimum of 10 percent of the total lot area will be maintained as a landscaped open area.

See also, from Section 1.400. DEFINITIONS:

LANDSCAPING: Preservation, planting and maintenance of trees, shrubs, groundcovers, and lawns, and associated walkways, benches, decks, fences, fountains, sculptures, courts or plazas in the proportions specified by the landscaping Code.

Response: 10% of the total site area is 5,614 square feet. Landscaped open area along the Astoria Fairfield and associated parking, including only vegetated area and excluding curbs, is 5,524 square feet (using the most conservative alternate). Landscaped open area along Stephanie's Cabin is not yet fully designed, but is estimated at 1,596 square feet. Reference Part 2, pp. 66. The existing landscaped area will be preserved in the interim, to ensure that this requirement is met at the time of permitting, and the Owner understands that future development will have to abide by the same open area requirements.

Landscaped open area coverage is 12.43%. Note that two configurations for the northeast patio are presented in the material. Landscape calculations are given for the more conservative scenario, with the patio boundary 5' from the property line, not the scenario that uses the existing stem wall of the Ship Inn as the patio boundary.

Citation: 2.410. HEIGHT OF STRUCTURES. No structure will exceed a height of 45 feet above grade.

See also, from Section 1.400. DEFINITIONS:

HEIGHT, BUILDING: The vertical distance above a reference datum measured to the highest point of the coping of a flat roof, to the deckline of a mansard roof, or to the average height of the highest gable of a pitched or hipped roof. The height of a stepped or terraced building is the maximum height of any segment of that building. The reference datum shall be whichever of the following two measurements results in the greater building height (see Figure 1):

a. The reference datum is the lowest grade when the highest ground surface within a five (5) foot horizontal distance of the exterior wall of the building is not more than ten (10) feet above that lowest grade. (Note: Also see definition of "Grade".)

b. The reference datum is ten (10) feet higher than the lowest grade when the ground surface described in Item A above is ten (10) feet or more above that lowest grade. (Note: Also see definition of "Grade".)

Response: The average height of the highest gable (the main gable above the fourth floor of pitched roof of the building will be maximum 44'-6" above the grade datum per the definition above. Note that Scenario (a) in the Definitions will govern in determining building height. Therefore the maximum building height will represent the measurement from 15.5' spot elevation indicated along the west end of the building. Reference Grading Plan, Part 2 pp. 30.

Citation: 2.415. OTHER APPLICABLE USE STANDARDS. (Only applicable standards are addressed.) 1. Landscaping shall meet the requirements of Sections 3.105 through 3.120.

Response: Landscaping meets all applicable standards. Reference responses to Article 3.

Citation: 2.415.3. Outdoor storage areas will be enclosed by appropriate vegetation, fencing, or walls. This requirement does not apply to outdoor retail sales areas. City of Astoria Development Code C-3 Zone Article 2 – Page 27 (Adopted 10-8-92)

Response: Only one outdoor area for trash collection is present at the site. It is enclosed as shown in Part 2, pp. 63.

Citation: 2.415.4. Where feasible, joint access points and parking facilities for more than one use should be established. This standard does not apply to multi-family residential developments.

Response: An existing curb cut drive entry off Marine Drive near the southwest corner of the site will be used as an access point for both the hotel and any future renovation of Stephanie's Cabin. Reference Site Plan and Parking Plan in Part 2, pp. 26 and 32.

Citation: 2.415.5. All uses will comply with access, parking, and loading standards in Article 7.

Response: The project will meet all access, parking and loading standards. Reference responses to Article 7.

Citation: 2.415.7. Signs will comply with requirements in Article 8.

Response: All signage will comply with code requirements. Reference responses to Article 8.

Citation: 2.415.8. All structures will have storm drainage facilities that are channeled into the public storm drainage system or a natural drainage system approved by the City Engineer. Developments affecting natural drainage shall be approved by the City Engineer.

Response: The project will have connections to public storm drainage as well as engineering for erosion control to direct all site runoff into the public system or as approved into the river watershed along the riprap. See preliminary civil engineering documentation, Part 2 pp. 30 and 31.

ARTICLE 3: ADDITIONAL USE AND DEVELOPMENT STANDARDS

Note: Citations from the Astoria Development Code are referenced as they are relevant to the proposed project. Where code sections are not relevant, they are omitted for brevity.

Citation: 3.005. ACCESS TO STREETS. Every lot shall abut a street, other than an alley, for at least 25 feet. (Section 3.005 amended by Ordinance 14-03, 4-21-14)

Response: The proposed project lot is 100 feet in length along the east side, where it abuts Second Street for approximately 80 feet until the street terminates. The lot abuts Marine Drive for 190 feet, including Stephanie's Cabin frontage.

Citation: 3.008.C. Traffic Study Requirements. The City in reviewing a development proposal or an action requiring an approach permit may require a Traffic Impact Study, pursuant to Subsection 3.015.A.5, to determine compliance with this code.

Response: Nathan Crater with City of Astoria Public Works confirmed in an email from 1/4/2018 that a Traffic Study is required. The Traffic Study is included as Appendix E.

Citation: 3.008.D.1. The number of approaches on higher classification streets (e.g., collector and arterial streets) shall be minimized; where practicable, access shall be taken first from a lower classification street.

Response: Reference response to 3.008.D.2 below. Two drives are being provided at the same location as existing entries, one at the arterial Marine Drive and one at the local Second Street. Signage will direct drivers primarily onto Second Street and its drive entry. The Marine Drive entry is being left in place in order to satisfy the local fire code, to preserve existing access to Stephanie's Cabin and for the convenience of users.

Citation: 3.008.D.2. Approaches shall conform to the spacing standards of Subsections E and F below, and shall conform to minimum sight distance and channelization standards of the roadway authority.

See also, from Section 3.008.E, Approach Separation from Street Intersections:

Except as provided by Section 3.008.G, approach, driveway, and intersection spacing shall comply with the minimum distance standards provided in Table 1 (Spacing Standards) of the Astoria Transportation System Plan.

Response: Per Table 1 of the 2013 Astoria Transportation System Plan, Maximum block sizes are 530 feet. Minimum sizes are 150 feet for local streets (such as Second Street) and 300 feet for collector streets (such as Marine Drive, which is an arterial but will observe collector standards). The existing block sizes are compliant. Minimum driveway spacing, public street to driveway and driveway to driveway, is 150 feet for collector and 25 feet for local. The Second Street drive (local) is 87 feet from the 76 station drive to the south, and the Marine Drive drive

(collector/arterial) is 132 feet from the Stephanie's Cabin lot. This is less than the required 150 foot maximum, however:

See also, from Section 3.008.G, Exceptions and Adjustments to Approach Separation from Street Intersections:

The City decision body may approve adjustments to the spacing standards of Subsection E above, where an existing connection to a City street does not meet the standards of the roadway authority and the proposed development moves in the direction of code compliance.

Response: The proposed development is not creating new drive entries, but is repairing/maintaining existing curb cuts and drive entries, and will improve them as needed for right-of-way work. It is also allowing two separate entries to the site to divide the amount of traffic and trips borne by one drive entry, reducing potential congestion. Given these considerations we request that the City waive the requirement for an additional 18 feet of drive separation and permit the existing separation along Marine Drive to remain at 132 feet.

See also, from Section 3.008.F, Vision Clearance:

Refer to Section 6.100 (Vision Clearance Area) of the City code.

Response: Site features adjacent to drive entries will observe all the restrictions noted in City Code 6.100, which is omitted here for brevity, but which may be found in Appendix D. There is a proposed monument sign on the west side of the Marine Drive entry which will be placed outside of the 10'x20' vision clearance triangle. Along the north side of the Second Street entry, the new structure does not encroach on the 10'x20' triangle. Reference Parking Plan in Part 2, pp. 32.

Citation: 3.008.D.3. Driveways shall be paved and meet applicable construction standards in the Astoria Engineering Design Standards (Chapter 4 - Roadways).

Response: Driveways shall be constructed to meet all criteria in these standards.

Citation: 3.008.D.6. Where applicable codes require emergency vehicle access, approaches and driveways shall be designed and constructed to accommodate emergency vehicle apparatus and shall conform to applicable fire protection requirements. The City Engineer may restrict parking, require signage, or require other public safety improvements pursuant to the recommendations of an emergency service provider.

Response: Approaches and driveways shall be designed and construction to meet requirements for emergency personnel. Any special direction provided by the City Engineer will be followed.

Citation: 3.008.D.7. As applicable, approaches and driveways shall be designed and constructed to accommodate truck/trailer-turning movements.

Response: Trailer truck deliveries are not anticipated for this use, but will be accommodated for exceptional cases. Smaller delivery trucks will be accommodated in the loading space to the south of the one-story Lobby/Entry part of the building on the east end, and such trucks should be able to easily negotiate this drive and loading space. Reference Parking Plan in Part 2 pp. 32.

Citation: 3.008.D.9. Driveways shall be designed so that vehicle areas, including but not limited to driveup and drive-through facilities and vehicle storage and service areas, do not obstruct any public right-ofway and do not result in vehicles stacking or backing up onto a street.

Response: Drive entries for the proposed project are matching existing drive locations, and as noted above the design intent is to reduce backup and congestion on the site, and along the Marine Drive arterial, by providing two entries.

Citation: 3.008.D.10. Approaches and driveways shall not be wider than necessary to safely accommodate projected peak hour trips and turning movements, and shall be designed to minimize crossing distances for pedestrians.

Response: Driveway widths are designed to be only slightly larger than code minimums. Drive entries will only be increased in size over their existing widths if modifications are required to meet code, and as coordinated with the City.

Citation: 3.008.D.13. Approaches and driveways shall be located and designed to allow for safe maneuvering in and around loading areas, while avoiding conflicts with pedestrians, parking, landscaping, and buildings.

Response: The dedicated loading area for the building, along the south side east end, is a parallel pull-off from the east-west drive to emphasize visibility, convenience, and speed so that use of the space may happen unobtrusively and quickly during off-hours.

Citation: 3.008.D.14. Where an accessible route is required pursuant to the Americans with Disabilities Act, approaches and driveways shall meet accessibility requirements.

Response: The project site will be designed and constructed to meet all ADA requirements, including but not limited to connections and pathways across the site, drive crossings, sidewalks, curb cuts, approaches and entries.

Citation: 3.008.D.16. Where a new approach onto a State highway or a change of use adjacent to a State highway requires ODOT approval, the applicant is responsible for obtaining ODOT approval. The Community Development Director or Planning Commission, as applicable, may approve a development conditionally, requiring the applicant first obtain required ODOT permit(s) before commencing

development, in which case ODOT will work cooperatively with the applicant and the City to avoid unnecessary delays.

Response: The drive entry off of Marine Drive / Route 30 is not a "new approach," but an existing approach that will be improved only as directed by the jurisdiction and the State. It is not anticipated that ODOT approval will be required, but the Architect will verify as design and permitting progress. Note that ODOT has made a preliminary review of the project and has not raised any concerns.

Citation: 3.008.D.19. Except as otherwise required by the applicable roadway authority or waived by the City Engineer, temporary driveways providing access to a construction site or staging area shall be paved or graveled to prevent tracking of mud onto adjacent paved streets.

Response: All temporary drives and parking areas on the project site will be topped with temporary paving or stone during the construction process.

3.010. ON-SITE PEDESTRIAN AND BICYCLE ACCESS AND CIRCULATION

Citation: 3.010.C. Standards. Applicable development shall conform to all of the following standards for pedestrian access and circulation:

1. Continuous Walkway System. A walkway system shall extend throughout the development site and connect to adjacent sidewalks, if any, and to all future phases of the development, as applicable.

Response: A pedestrian walkway links the west egress stair and parking lot and the east entries into the building across the south side of the building. The walkway and hardscape at the east lobby entry adjoin the public walk along Second Street. A walkway currently passes along the west side of Stephanie's Cabin from the Marine Drive public walk; this walkway would be preserved and improved as needed in any future development, providing a pedestrian pathway to the hotel from Marine Drive. A crossing and curb cuts will be provided to connect the Stephanie's Cabin walks to the hotel walk. Reference the Site Plan, Part 2 pp. 26.

Citation: 3.010.C.2. Safe, Direct, and Convenient Walkways. Walkways within developments shall provide safe, reasonably direct, and convenient connections between primary building entrances and all adjacent parking areas, open spaces, recreational areas/playgrounds, and public rights-of-way based on all of the following criteria:

a. The walkway is designed primarily for pedestrian and bicycle safety and convenience, meaning it is reasonably free from hazards and obstructions, and provides a reasonably smooth and consistent surface and direct route of travel between destinations. The Community Development Director or Planning Commission as applicable may require landscape buffering between access ways and adjacent parking lots or driveways to mitigate safety concerns.

b. The walkway is reasonably direct. A walkway is reasonably direct when it follows a route that does not deviate unnecessarily from a straight line or it does not involve a significant amount of out-of-direction travel.

c. The walkway network connects to primary building entrances and, where required, meets Americans With Disabilities Act requirements.

Response: The previous Response details the connections between various points on the site. The minimum width of the east-west drive does not allow space for a landscape buffer between it and the walkway, but the walkway shall be elevated on a curb to provide protection for users, with a smooth and accessible route provided. Reference the Site Plan, Part 2 pp. 26.

Citation: 3.010.C.3. Vehicle/Walkway Separation. Except as required for parking area and driveway crossings, per Subsection 4 below, where a walkway abuts a driveway it shall be raised six (6) inches and curbed along the edge of the driveway/street. Alternatively, the Community Development Director or Planning Commission may approve a walkway abutting a driveway at the same grade as the driveway if the walkway is physically separated from all vehicle-maneuvering areas; for example, a row of bollards designed for use in parking areas, with adequate minimum spacing between them to prevent vehicles from entering the walkway.

Response: Walkways will be raised minimum 6" above the elevation of the roadways and drives. A few exceptions will exist where the walkways must cross entries to the site or the covered parking and the walkway must taper down to meet the road for accessibility. The curb along the walkway to the south of the building will be mountable in order to satisfy Fire Code requirements established in correspondence with the local jurisdiction.

Citation: 3.010.C.4. Parking Area and Driveway Crossings. Where a walkway crosses a parking area or driveway, it shall be clearly marked with contrasting paving materials (e.g., pavers, light-color concrete inlay between asphalt, or similar contrast). The crossing may be part of a speed table to improve driver-visibility of pedestrians. Painted or thermoplastic striping and other types of non-permanent applications are discouraged, but may be approved for lesser-used crossings not exceeding 24 feet in length.

Response: A compliant contracting material will be used when walkways cross drive entries, drives and covered parking entries.

Citation: 3.010.C.5. Walkway Width and Surface. Walkways shall be constructed of concrete, asphalt, brick/masonry pavers, or another durable surface, as approved by the City Engineer and meeting Americans With Disabilities Act requirements, with a surface not less than six (6) feet wide. The Community Development Director or Planning Commission as applicable may require a wider walkway where pedestrian traffic warrants.

Response: Minimum six (6) foot walkways are provided within the site; walkways outside the property lines will remain their current width. All walkways will be constructed of concrete.

Citation: 3.010.C.6. Mid-Block Walkways. Walkways through blocks for pedestrian and bicycle access shall be provided at least every 330 feet for blocks that exceed the spacing standards in Table 1 of the Transportation System Plan. Road crossings shall be similarly provided and these are addressed in the Transportation System Plan and the Astoria Engineering Design Standards for Roadways (Chapter 4).

Response: The block size is 400 feet east-west by 185 feet north-south. Both dimensions fall within the 530-foot maximum listed in Table 1. An additional north-south walk connects Marine Drive to the River Trail directly to the west of the project site.

Citation: 3.015.A.5. Traffic Impact Studies

In order to comply with and implement the State Transportation Planning Rule, the City shall adopt a process to coordinate the review of land use applications with roadway authorities and apply conditions to development proposals in order to minimize impacts and protect transportation facilities, which can be done by establishing requirements for Traffic Impact Studies.

Response: Based on a preliminary trip generation calculation provided by the Architect, Nathan Crater with City of Astoria Public Works confirmed in an email from 1/4/2018 that a Traffic Study is required. The Traffic Study has been prepared in accordance with 3.015.A.5.d and all other code requirements and can be found in Appendix E.

Pending review and decision by the City of Astoria per 3.015.A.5.d, the project will incorporate Traffic Impact Study Mitigation measures as deemed necessary into the design and construction scope.

Citation: 3.015.B.6. Existing street-ends that abut a proposed development site shall be extended with the development, unless prevented by environmental or topographical constraints, existing development patterns, or compliance with other standards in this Code; in such situations, the applicant must provide evidence that the environmental or topographic constraint precludes reasonable street connection.

Response: The current end of Second Street is directly adjacent to the riprap slope at the Columbia River Edge. It is currently assumed that this street is not to be extended as part of the Work, unless otherwise directed by the City.

Citation: 3.070. EXCEPTIONS TO YARDS. A. Projections From Buildings. Cornices, eaves, canopies, gutters, chimneys, flues, and other similar architectural features shall not project more than 24 inches into a required yard.

Response: All permitted projections will be kept within the 24 inch maximum projection. This is only applicable at the north elevation, where a 24 inch eave overhang projects into the River Trail stepback.

Citation: 3.075. EXCEPTIONS TO BUILDING HEIGHT LIMITATIONS.

A. The features listed in this Section shall be exempt from the height limits established by the Code, provided the limitations indicated for each are observed.

1. Mechanical equipment and appurtenances necessary to the operation or maintenance of the building or structure itself, including chimneys, ventilators, plumbing vent stack, cooling towers, water tanks, panel

or devices for the collection of solar or wind energy, and the window-washing equipment, together with visual screening for any such features.

Response: Several roof top mechanical units will be installed over the single-story structure on the east end of the building. (3 units anticipated) and hotel guestroom roofs (1 unit anticipated). Reference Part 2, pp. 65. The unit on the hotel roof is situated on a "tower" form with a parapet 47'-11" feet in height, in order to properly screen the mechanical equipment.

2. Elevator, stair, and mechanical penthouses, fire towers, skylights, flag poles, aerials, and similar objects.

Response: The elevator penthouse will project above the 45-foot height limit. Reference Part 2, pp. 43.

3. Ornamental and symbolic features not exceeding 200 square feet in gross floor area including towers, spires, cupolas, belfries, and domes, where such features are not used for human occupancy.

Response: The proposed project does not claim this exception.

B. The total area covered by these features shall not exceed 30% of the roof area on which they are located.

Response: The total area of such features shall be much less than 30% of the fourth floor roof area.

3.105. LANDSCAPING

Citation: 3.105.A. Purpose. The purpose and intent of this section is to enhance the appearance of the City by requiring landscaping as part of commercial developments, including parking areas. These developments shall include all uses except those associated with single-family and two-family dwelling.

Response: The proposed project includes landscaped areas, meeting all code requirements, at site perimeters, within parking areas, and at all other locations required by, and design in conformance with, the City code.

Citation: 3.110. LANDSCAPING REQUIRED. At the time a building permit is requested for new construction, or for remodeling with a value of at least 33% of the assessed value of the structure, or in the event of a change of use or installation of new parking areas, the property shall come into compliance with the landscape requirements and a landscaping plan shall be submitted to the Community Development Director. Such landscaping plan may also be used as a site or plot plan for the development, provided all information necessary for the site or plot plan is provided. The plan shall be of sufficient scale to show existing and proposed features, proposed materials, contours (where appropriate) and other features.

Response: Reference Part 2, pp. 28 and 30, for a Planting Plan and a preliminary Grading Plan for the site. Complete versions of both documents will be signed, stamped, and submitted with the project Permit Set to the City of Astoria. These plans are specific to the current development of the Astoria Fairfield. Landscaping has not yet been fully developed for the renovation of Stephanie's Cabin, a future project, but any intended work at this structure is to fall below 33% of the assessed value of the Property.

Citation: 3.115. REVIEW OF LANDSCAPING PLANS. The landscaping plan shall be reviewed by the Community Development Director to determine if it meets the quantitative requirements of the Code. Landscaping in conjunction with Uses Permitted Outright may be approved by the Community Development Director. Landscaping in conjunction with Conditional Uses shall be reviewed by the Planning Commission as part of the review under Section 11.010. In such cases, the Planning Commission may review schematic plans and the final plans may be reviewed by the Community Development Director. No Certificate of Occupancy or other final approval shall be issued by the building official or the City until the landscaping is installed as specified by the Planning Commission or Community Development Director, so long as they do not alter the overall character of the development.

Response: See previous response. Any changes made to the landscaping following design review and approval will be minor, and will not impact designated planting areas, visual screening or the aesthetic character of the site landscape. Landscaping revisions to the areas surrounding Stephanie's Cabin will be coordinated with all City requirements at the time of or prior to permitting as directed by the City.

Citation: 3.120. LANDSCAPING REQUIREMENTS. A. Specific requirements governing the placement and maintenance of landscape materials are as follows: 1. Landscape plant materials shall be installed to ensure health and survivability.

Response: The proposed project has retained a licensed landscape architect that will abide by this and all following requirements, and the documents shall specify the work of the Contractor accordingly.

Citation: 3.120.2. Landscape plant materials will be properly guyed and staked so as to not interfere with vehicular or pedestrian traffic.

Response: See previous response.

Citation: 3.120.A.3. Deciduous trees shall have a minimum caliper of one and one half (1.5) inches, and a minimum height of eight (8) feet at the time of planting, unless it is determined by the Community Development Director that a lesser caliper will provide the bulk and scale necessary to substantially cover the landscaped area.

3.120.A.4. Evergreen trees shall be a minimum of six (6) feet in height, fully branched, at the time of planting.

3.120.A.5. Shrubs shall be supplied in one (1) gallon containers minimum, or eight (8) inch burlap balls with a minimum spread of 12 inches.

3.120.A.6. Ground cover plantings shall be planted on a maximum of 18 inches on center and 18 inches between rows. Rows of plantings shall be staggered for a more effective covering. Ground cover shall be supplied in a minimum four (4) inch size container or a two and one quarter (2.25) inch size if planted on 12 inch centers.

Response: All plantings have been designed in accordance with these requirements for size and spacing, and all other parameters. Reference Planting Plan in Part 2, pp. 28.

Citation: 3.120.A.7. Planting areas shall be designed to separate parking lots from the sidewalk and street and shall contain a mixture of trees and shrubs, except where the presence of chairwalls or public utilities makes the planting infeasible, as determined by the City Engineer, in which case concrete, stone, or other manufactured containers may be used.

Response: The parking lot for the site is located in the northwest corner, and is not adjacent to any streets. Still, landscape buffers are provided along the north, west and south boundaries of the lot. Along the drive at the west edge of the site there is a row of parallel parking spaces. The southernmost space is separate from Marine Drive by a landscape buffer approximately 13'-3" in depth.

Citation: 3.120.8. Parking areas with 20 spaces or more shall have a minimum of one landscaping divider per ten (10) parking spaces. Each ten (10) parking spaces shall be bordered by a landscaped

area. Such area shall consist of a curbed planter of at least three (3) feet by 16 feet, or at least 48 square feet. Each planter shall contain at least one (1) tree, along with hedge or shrub material.

Response: Parking spaces in the parking areas at both the northwest lot and along the drive are separated from each other by landscaped areas such that no more than nine spaces occur without this division. Where small curbed planters occur they are three (3) feet by 17.5 feet in dimension, not including 6" curbs on all sides, with a radiused end, at a total square footage of 52 square feet.

Citation: 3.120.9. For new construction, parking areas shall be separated from the exterior wall of a structure, exclusive of paved pedestrian entranceways or loading areas, by a strip of landscaping material. All planting areas shall be protected by the use of concrete bumper blocks affixed to the paving.

Response: The northwest parking lot is adjacent to the covered parking area below the hotel structure, and made contiguous with it by the provision of the 20 foot wide entry. The lot is separated on the northeast corner from the west exterior wall of the project by a landscape strip the also houses the transformer and accompanying vault. On the southeast corner the open egress stair and the hardscape walkway and pad below it separate the lot from the building wall.

Wheel stops will be provided as needed to protect planting areas in conformance with the code. However, as the non-covered spaces in the northwest lot will overhang the landscape strips 2.5 feet per Development Code 7.110 (further detailed below), no wheel stops will be required or provided at exterior spaces, only those in the covered parking area.

Citation: 3.120.10. Existing trees may be used as required landscaping. To the extent possible and practicable, required landscaping shall be within reasonable view from an improved City right-of-way.

Response: Due to the site constraints and provisions needed to satisfy other requirements of the Development Code, no trees within the property line will be able to be preserved. Trees along the lot to the west and the ROW areas around the site, outside of the property boundary, will remain in place.

Citation: 3.120.11. All landscaping shall be maintained and kept free from trash, noxious growth, and weeds. Unkempt landscaped areas shall be considered a nuisance and shall be enforced under the applicable City code.

Response: Ownership and maintenance personnel for the hotel will abide by this code requirement as part of basic operations.

Citation: 3.120.12. Seating areas and street furniture shall be considered part of the landscaping requirement, and shall be encouraged by the Community Development Department.

Response: Based on the layout of site parking, walkways and other features as required by the code, few good opportunities for furniture exist within the property lines. The project does take advantage of the view corridor setback on the east end of the property to create a small paved area with two benches, matching the traditional River Trail design. Reference Site Plan, Part 2, pp. 26.

Citation: 3.120.13. Up to 50% of the landscaping requirement may be satisfied by the use of City right-ofways for landscaping, as approved by the City Engineer. The property owner shall be responsible for the maintenance of such landscaping. (See City Code 2.350 through 2.353.)

Response: Rights-of-way are not being utilized to meet landscape requirements. All requirements are met by area within the lot lines of the project. Some hardscape installation at the terminus of Second Street has been proposed near the existing connection to the River Trail. Final design and amenities for this space are to be coordinated with the City.

3.300. EROSION CONTROL AND STORMWATER MANAGEMENT

Citation: 3.300. REGULATION OF EROSION CONTROL AND STORMWATER MANAGEMENT.

A. Purpose. The purpose of this ordinance is to:

1. Minimize impacts associated with excavation and grading,

2. Minimize the erosion of land during clearing, excavation, grading, construction and post-construction activities,

3. Prevent the transport of sediment and other soil borne pollutants into the Columbia River estuary and its tributaries, wetlands and riparian areas,

4. Prevent the transport of sediment onto adjacent property and into City rights of way and storm systems,

- 5. Prevent the unnecessary clearing, excavation, and stripping of land; and
- 6. To reduce the amount of soil exposure during construction.

Additional detail on requirements and submittals is provided in the code, but is omitted here for brevity.

Response: The project team recognizes the importance of Erosion Control and Stormwater Management, particularly on this site adjacent to the Columbia River. The team has reviewed the goals above and will demonstrate compliance through the construction process, beginning with the pending provision, at the appropriate time for permitting, of the following required documents:

3.310.A. Site Plan – A Stormwater and Erosion Control Plan will provide required information on "property line locations, roads, areas where clearing, grading, excavating, stripping, or filling is to occur, the area where existing vegetative cover will be retained, the location of any springs, streams or wetland areas on or immediately adjacent to the property, the general direction of slopes with slope arrows showing direction of water flow on existing slopes and graded slopes, construction access, the location of the proposed development, and the location of soil stock piles, if any."

3.310.B. Erosion Control Methods – Will be clearly noted on the Stormwater and Erosion Control Plan, both short term and post construction.

3.310.C. Stormwater Management Methods – Will also be provided in the Stormwater and Erosion Control Plan and other Civil documents. Licensed civil engineer will perform stormwater calculations as required.

3.310.D. A Grading Plan will be provided as part of the Civil documents for the project. It will address slopes for stormwater drainage as well as shoreline riprap where grades drop beyond 35%.

3.310.E. Sedimentation and Erosion Control Plan – will be provided as required, as total disturbed area of the site exceeds 20,000 square feet (disturbed area roughly entire site, over 42,000 square feet.)

3.310.F. Development Plan – Will be provided as required, as total disturbed area of site is greater than 2,000 square feet. Will include information as needed from previous documents on the list.

3.310.G. Ground and Surface Water Diversion Plan – Not required. Stormwater and Erosion Control Plan will ensure that drainage, erosion, and other considerations pertinent to the neighboring property or to the Columbia River are dealt with on site during construction, and do not affect any of these neighboring areas.

Citation: 3.315. Grading Standards. A. Cuts. The following Grading Standards shall be required for cuts:

1. The design shall minimize the need for cuts. The proposed grading plan shall be designed to blend with the existing topography as much as possible without the use of retaining walls.

Response: Existing grade shall be utilized wherever possible. Cuts will be minimized. The building is a slab-on-grade design, with a parking structure and partial basement slab set three (3) feet below the floor elevation of the Entry/Lobby area on the east side. Cuts are designed only as needed to ensure smooth grading and entry into the covered parking area. Reference Grading Plan, Part 2 pp. 30.

Citation: 3.315.A.2. Long, steep cut and fill slopes shall be avoided.

Response: No such slopes shall be constructed, except as needed for maintenance on existing grading near the river's edge. Reference Grading Plan, Part 2 pp. 30.

Citation: 3.315.A.3. The slope of cut surfaces shall not be steeper than is necessary for the intended use and shall not be steeper than two horizontal to one vertical (2:1) unless an engineering geology report determines that a cut at a steeper slope will be reasonably stable and not create a hazard to public or private property.

Response: No new slopes will be created to greater than a 2:1 ratio.

Citation: 3.315.A.4. Cuts shall not remove the toe of any slope where a known potential or historic land slide exists as determined by the City Engineer.

Response: No cuts will be made to the toe of any slope.

Citation: 3.315.A.5. Cuts shall be set back a minimum of five (5) feet from property lines so as to minimize danger and disturbance to adjoining property.

Response: No cuts shall be made within five (5) feet of the property line. Note that the project is proposing an alternate boundary for the northeast patio, that uses the existing stem wall of the the Ship Inn as the boundary and structural support for the patio. The project team believes that this will be less invasive than constructing a new wall two feet south of the existing stem wall, and is requesting that the DRC allow this alternate if the existing wall is deemed adequate upon review by a structural engineer.

Citation: 3.315.A.6. Retaining walls shall be constructed in accordance with the Structural Specialty Codes as adopted by the City.

Response: The retaining wall required south of the river's edge for the planting strip and patios to the north of the building shall be constructed in accordance with this code.

Citation: 3.315.B. Fills. The following Grading Standards shall be required for fills:

1. The design shall minimize the need for fills.

Response: Existing grade shall be utilized wherever possible. Some site fill will be included in the project scope due to the need to establish a level slab with entries onto drives in proximity to neighboring and already developed sites. Regions of fill will transition to existing topography to the maximum extent possible after accounting for grading needs for interior slabs, parking areas, and other site features. Reference Grading Plan, Part 2 pp. 30.

Citation: 3.315.B.2. The slope of fill surfaces shall not be steeper than two horizontal to one vertical (2:1) unless an engineering geology report determines that a steeper slope will be reasonably stable and not create a hazard to public or private property. Fill slopes shall not be constructed on natural slopes steeper than two horizontal to one vertical.

Response: Fill slope surfaces will not exceed 2:1. At any locations adjacent to the river where a greater grade change is present and not currently provided for by shoreline riprap, a retaining wall will be used. Reference Grading Plan, Part 2 pp. 30.

Citation: 3.315.B.3. Fills shall be set back from property lines a minimum of five (5) feet so as to minimize impact on adjoining property. Retaining walls shall be required by the City where the City Engineer deems it necessary.

Response: See two previous responses. No fills will be added adjacent to neighboring lots within five (5) feet. Where soil disturbances associated with construction along the river require retaining walls or other provisions per the City Engineer or project civil engineer (as coordinated with City Engineer), Work will be performed in accordance with City requirements.

Citation: 3.315.B.4. The ground surface shall be prepared to receive fill by removing vegetation, inappropriate fill, topsoil, and other unsuitable materials, and shall be scarified to provide a bond with the new fill.

Response: The proposed project will comply with all of these requirements, which will be reflected in the construction documents.

Citation: 3.315.B.5. Any structural fill shall be designed by a Registered Professional Engineer, in accordance with standard engineering practices.

Response: The project team includes a licensed civil engineer, who has prepared the Grading Plan in Part 2, pp. 30, and who is designing all grading for the project, including structural fill.

Citation: 3.315.B.6. Fill material shall be broken into pieces no larger than 12 inches to assure proper compaction.

Response: The proposed project will comply with this requirement, which will be reflected in the construction documents.

Citation: 3.315.B.7. The following items are unsuitable materials and shall not be used for fill: a. Roofing material, fiberglass, metals, asphalt, or large slabs of concrete, and other man-made construction debris inappropriate for fill b. Stumps, organic materials, and other natural debris inappropriate for fill

Response: The proposed project will comply with all of these requirements, which will be reflected in the construction documents.

Citation: 3.315.B.8. A compaction report shall be required for any area with fill prior to any construction on the site.

Response: The proposed project will comply with this requirement, which will be reflected in the construction documents.

Citation: 3.315.C. Drainage. The following Grading Standards shall be required for drainage:

1. Proposed grading, cuts or fills shall not alter drainage patterns so that additional stormwater is directed onto adjoining property.

Response: Site grading shall be designed such that no additional stormwater is directed on adjoining property. Reference Grading Plan, Part 2 pp. 30 and Utility Plan, pp. 31.

2. All cut and fill slopes shall be provided with subsurface drainage as necessary for stability.

Response: The proposed project will comply with this requirement, which will be reflected in the construction documents.

Citation: 3.320. EROSION AND SEDIMENTATION CONTROL STANDARDS. C. General Erosion and Sedimentation Control Standards.

1. Natural vegetation shall be retained and protected wherever possible.

2. Stream and wetland areas shall only be disturbed in accordance with US Army Corps of Engineers and Oregon Division of State Lands permits, as well as riparian preservation requirements in Astoria Development Code Article 4, "Columbia River Estuary and Shoreland Regional Standards".

3. Sedimentation barriers, as described in the DEQ "Best Management Practices for Stormwater Discharges Associated with Construction Activities" document shall be placed to control sedimentation from entering the river, bay, streams, wetlands, adjacent property or City streets and storm sewers. The barriers shall be installed prior to site clearance or grading activities.

4. The City Engineer or Building Official may require areas to be temporarily stabilized with straw mulch, sod, mat or blanket in combination with seeding, or other acceptable sediment control method. Prior to the completion of construction, such areas shall be permanently stabilized by seeding or other vegetative ground cover.

5. Stormwater catch basins, inlets or culverts shall be protected by sediment traps or filter barriers such as "bio bags".

6. Soil storage piles or fill shall be located so as to minimize the potential for sedimentation of streams, wetlands, adjacent property or City streets or storm sewers. The City Engineer or Building Official may require temporary stabilization of soil storage piles or fill.

7. Temporary sedimentation control, not in conjunction with a structure, shall be required in any situation where the City Engineer or Building Official determine that sedimentation or erosion may affect streams, wetlands, adjacent property, City streets or storm sewers.

8. Erosion and sedimentation control measures shall be continually maintained during the period of land disturbance and site development in a manner that ensures adequate performance. Soil that has been transported by any means to a street or any area where stormwater flows to a storm drain or surface water, shall be cleaned up to prevent transport to the drain or surface water. All temporary erosion and sedimentation control measures shall remain in place until the disturbed area is stabilized with permanent vegetation.

9. The City shall require a graveled construction road or access of sufficient length, depth, width, and rock size to prevent sedimentation from being tracked onto City streets.

10. Sediment trapped by sediment control methods shall be redistributed on-site, removed, or permanently stabilized to prevent further erosion and sedimentation.

11. The City Engineer shall require the cleanup of any streets, catch basins or storm sewers affected by regulated activities on a site at the expense of the person responsible for those regulated activities. Measurable amounts of sediment that leave the site shall be cleaned up and placed back on the site or disposed of in an approved manner.

12. Under no conditions shall soil on sidewalks, streets, or equipment be washed or hosed into storm sewers, drainage ways, streams or other water bodies.

13. The City shall make periodic inspections to ascertain that erosion and sediment control measures as proposed have been implemented and are being effectively maintained. The City Engineer or the Building Official are authorized to place an immediate "stop work" order on any project that does not meet the standards imposed in this ordinance.

Response: The proposed project will comply with all of these requirements, which will be reflected in the construction documents. All listed standards will be followed as noted. Direction from the City Engineer or Building Official regarding temporary stabilization of soil, temporary sedimentation control, cleanup of runoff, or any other measures concerning erosion and sedimentation control shall be followed.

Citation: 3.325. STORMWATER MANAGEMENT STANDARDS. Projects that are 40,000 square feet (land area) or larger shall install a stormwater management system as part of the landscaping requirements. Such a system shall be designed by a Registered Professional Engineer and/or Registered Landscape Architect and shall be capable of meeting the standards in the DEQ "Best Management Practices for Stormwater Discharges Associated with Construction Activities", or other guidelines acceptable to the City Engineer.

Response: The proposed project is on a site 56,140 square feet in area. This exceeds the 40,000 square foot threshold lists, and as such a stormwater management system will be provided by a licensed landscape architect and/or civil engineer. The system will be designed in compliance with the listed DEQ standard or other as coordinated with and accepted by the City Engineer.

ARTICLE 7: OFF-STREET PARKING AND LOADING

Note: Citations from the Astoria Development Code are referenced as they are relevant to the proposed project. Where code sections are not relevant, they are omitted for brevity.

Citation: 7.010. PARKING AND LOADING AREAS REQUIRED. A. Off-street parking areas and off-street loading areas meeting the applicable requirements of this Section shall be provided and maintained:

1. For each separate use in any building or structure erected after the adoption of this ordinance.

2. For additional seating capacity, floor area, guest rooms, or dwelling units added to any existing structure or lot.

3. When the use of the structure or portion thereof is changed.

Response: The proposed project will provide parking for the hotel, calculated per guestroom, in conformance with all requirements below. Parking is not being provided for Stephanie's Cabin at this time, since property is not currently operating, and the anticipated future renovation of this property will involve a reallocation of parking with the hotel, including supplemental off-site stalls to be leased at a future date.

Citation: 7.020. REDUCTION OF PARKING AREA PROHIBITED; EXCEPTION. Off-street parking and loading areas which existed on the effective date of this ordinance or which are provided as required by this Section shall be maintained, or equivalent parking and loading areas provided; except that if this ordinance reduces the number of required off-street parking or loading spaces, an affected use may diminish its parking and loading area to the new requirements.

Response: The proposed project is a full redevelopment of the portions of the current project site with minor site modifications to Stephanie's Cabin and its current lot. The design therefore eliminates all current parking spaces that are present along the west edge and north half of the site. These spaces are replaced by parking included in the new lot (Reference Parking Plan, Part 2 pp. 32) as needed to provide for the calculated requirements. The Stephanie's Cabin lot is being modified to create a radius for emergency vehicle entry along the north east corner of the lot, and to address minor accessibility nonconformance issues only. Parking requirements are being recalculated for the new uses; so prior parking shall have no determination over the number of spaces required.

Citation: 7.030. LOCATION. A. Off-street parking and loading areas required by this ordinance shall be provided on the same lot with the use except that:

1. In any residential zone, up to 50% of vehicle parking spaces for dwellings and other uses permitted in a residential zone may be located on contiguous lots or on a lot across a street or other right-of-way from the lot with the primary use.

2. In non-residential zones, up to 50% of the required parking area may be located off the site of the primary use or structure provided it is within 300 feet of such site.

B. Off-street parking is incidental to the use which it serves. As such, it shall be located in a zone appropriate to that use, or where a public parking area is a specific permitted use.

Response: None of these exceptions are being claimed at this time. The Owner anticipates claiming Exception 7.030.A.2, and locating spaces off-site for a future reallocation at the time of the renovation of Stephanie's Cabin.

Citation: 7.050. OWNERSHIP OF PARKING AND LOADING AREAS. A. Except as provided for joint use parking in Section 7.070, the land to be provided for off-street parking and loading areas, including driveways, aisles, and maneuvering areas shall be:

1. Owned by the owner of the property served by the parking; or

2. In commercial and industrial zones, the parking may be provided by a permanent and irrevocable easement appurtenant to the property served by the parking; or

3. Be leased for a minimum term of five (5) years, provided that upon expiration or termination of the lease, the parking requirements of this ordinance shall otherwise be fully met within 90 days or the use discontinued until such requirements are met.

Response: See Response to 7.030 above. All parking currently being provided shall be on site and on the property of the Owner.

Citation: 7.060. OFF-STREET VEHICLE PARKING REQUIREMENTS. A. Except as otherwise specifically provided in this ordinance, off-street parking spaces shall be provided in amounts not less than those set forth in Section 7.100.

See also, from 7.100. MINIMUM PARKING SPACE REQUIREMENTS.

Table 7.100 – Off-Street Parking Space Requirements by Use (excerpted as appropriate for calculations)

Required Parking	Quantity	Multiplier per Code	Response – Required Spaces
Hotel	66 guestrooms	1 space per guestroom	66 spaces
Restaurant (in-hotel dining, gross)	N/A	N/A, serving guests only	
Restaurant (Stephanie's Cabin gross)	4,573 SF	N/A, not part of this Project, anticipated future renovation to be reallocated with hotel parking and supplemental off-site parking conformant with code	
Total Required			66 spaces
Parking Provided On Site			70 spaces

Response: See the right column of the adapted Table 7.100 above for calculations for total required parking.

Citation: 7.090. OFF-STREET LOADING. A. Except as otherwise specifically provided in this ordinance, off-street loading shall be provided in amounts not less than those set forth in Section 7.160.

B. A parking area meeting the requirements of Sections 7.100 through 7.110 may also be used for loading when the use does not require a delivery vehicle which exceeds a combined vehicle and load rating of 20,000 pounds, and when the parking area is within 25 feet of the building or use which it serves.

See also:

Citation: 7.160. MINIMUM LOADING SPACE REQUIREMENTS (excerpted as appropriate for calculations)

Use and Gross Square Footage of Floor Area	Minimum Number of Spaces	Min. Width	Min. Length	Min. Height
B. for Buildings Used Entirely for Office Occupancy, 5,000-59,999 sq. ft.	1	12 ft	30 ft	14 ft
C. Commercial, Non-Office, Public and Semi-Public, 5,000-59,999 sq. ft.	1	12 ft	55 ft	14 ft

Response: Reference Parking Plan, Part 2 pp. 32. The Code includes separate listings for a commercial building of this square footage. The first listing is for a building of entirely office use, requiring a 12'x30' plan dimension loading space. The second is for "commercial, non-office, public and semi-public" and requires a 12'x55' loading space, sized for a trailer truck.

The proposed use fits more accurately into the second category. However, this hotel with its ancillary uses will not require trailer trucks to make deliveries on site. A smaller truck, able to fit into the 12'x30' loading space will be the largest vehicle required for on-site deliveries. With this in mind, the project team has confirmed by email with the City that Exception 7090.B may be claimed to satisfy this criterion. A truck loading space will be provided, but will claim this exception to allow the smaller delivery truck size in compliance with the Code. This loading spot is approximately seven (7) feet from the building, and will serve combined vehicle and load ratings of 20,000 pounds or less only.

For the future renovation of Stephanie's Cabin there will be no change. This building is below 5,000 square feet and does not require a loading space.

Citation: 7.105. BICYCLE PARKING. A. Standards. Bicycle parking spaces shall be provided for new development, change of use, and major renovation, at a minimum, based on the standards in Table 7.105. Major renovation is defined as construction valued at 25% or more of the assessed value of the existing structure. Where an application is subject to Conditional Use Permit approval or the applicant has requested a reduction to an automotive parking standard, pursuant to Section 7.062, the Community Development Director or Planning Commission, as applicable, may require bicycle parking spaces in addition to those in Table 7.105.

Table 7.105: Minimum Required Bicycle Parking Spaces (excerpted as appropriate for calculations)

Use	Min. Spaces per Code	Long Term	Short	Total Long	Total Short
		%	Term %	Term	Term

Commercial	1 bike spaces per primary use or 1 per 10 vehicle	50%	50%	4 spaces required, 4	4 spaces
	spaces, whichever is greater			additional	
				spaces	
	Vehicle spaces used.			provided	
	70/10=7.0.				

Response: See the right two columns of the adapted Table 7.105 above for calculations for total required bicycle parking. Long term bike parking is provided on wall-mounted lockable hooks in the covered parking area on the ground floor. Short term bike parking is provided adjacent to the lobby entry, east of the building. Four (4) additional spaces are provided in the long term parking area, that may be used for short- or long-term parking as needed.

Any future Stephanie's Cabin renovation is excluded from this calculation, as it 1) is a separate development and 2) is not anticipated to exceed the 25% of assessed value threshold requiring these improvements. It is understood that if work exceeds this threshold site improvements listed here and elsewhere will be required.

Citation: 7.105.B. Design and Location. 1. All bicycle parking shall be securely anchored to the ground or to a structure.

Response: Bicycle parking will be provided with "staple" style racks bolted securely to concrete slabs at outdoor locations, and with lockable wall-mounted hooks bolted to walls within the covered parking area. Reference proposed products and fastening method in Part 2, pp. 34.

Citation: 7.105.B.2. All bicycle parking shall be designed so that bicycles may be secured to them without undue inconvenience, including being accessible without removing another bicycle.

Response: The racks designed for the site, and the approaches and clearances around them, are common in urban applications, and allow for ease of use with multiple bicycles. Typical manufacturer's guidelines and past projects have been referencing in the determination of clearances and spacing.

Citation: 7.105.B.3. All bicycle parking should be integrated with other elements in the planter strip when in the public right-of-way.

Response: Short-term bicycle parking is proposed along the concrete sidewalk at the east end of the building, but is within the project property and is not in the right-of-way. The racks will be next to a planting strips, but will be bolted to the concrete walk as shown. Reference Parking Plan, Part 2 pp. 32 and 34.

Citation: 7.105.B.4. Direct access from the bicycle parking area to the public right-of-way shall be provided at-grade or by ramp access, and pedestrian access shall be provided from the bicycle parking area to the building entrance.

Response: Short-term bicycle parking will be most easily and directly accessible from the curb cut provided at the crossing over the east drive entrance. Long-term bicycle parking shall generally be accessed through the south elevation entry into the covered parking area. At both locations the rider can move from the public-right-of-way to parking, and back, without getting off the bicycle.

Citation: 7.105.B.5. Bicycle parking shall not impede or create a hazard to pedestrians or vehicles, and shall not conflict with the vision clearance standards of City Code Section 6.100.

Response: Bike parking sits outside all required vision clearance areas, and meets all other safety requirements listed.

Citation: 7.105.B.6. Short-term bicycle parking.

a. Short-term bicycle parking shall consist of a stationary rack or other approved structure to which the bicycle can be locked securely.

b. If more than 10 short-term bicycle parking spaces are required, at least 50% of the spaces must be sheltered. Sheltered short-term parking consists of a minimum 7-foot overhead clearance and sufficient area to completely cover all bicycle parking and bicycles that are parked correctly.

c. Short-term bicycle parking shall be located within 50 feet of the main building entrance or one of several main entrances, and no further from an entrance than the closest automotive parking space.

Response: Short-term bicycle parking complies with all listed requirements. Stationary racks are provided and secured as noted above. Fewer than 10 spaces are required, so all four (4) spaces are uncovered. The furthest space is less than a 50-foot travel distance from the southeast lobby entry.

Citation: 7.105.B.7. Long-term bicycle parking. Long-term bicycle parking shall consist of a lockable enclosure, a secure room in a building on-site, monitored parking, or another form of sheltered and secure parking.

Response: Long-term bicycle parking is provided within the covered parking area, adjacent to the building entry accessed from this covered parking area. The area will be within view of one of the building's security cameras. Lockable bike racks will be provided and secured to the wall as discussed above. Long-term parking will thus meet requirements for being "sheltered" and "secure."

Citation: 7.110. PARKING AND LOADING AREA DEVELOPMENT REQUIREMENTS. All parking and loading areas required under this ordinance, except those for a detached single-family dwelling on an individual lot unless otherwise noted, shall be developed and maintained as follows:

A. Location on site. Required yards adjacent to a street, shall not be used for parking and loading areas unless otherwise specifically permitted in this ordinance. Side and rear yards which are not adjacent to a street may be used for such areas when developed and maintained as required in this ordinance.

Response: No required yards adjacent to a street are used for parking and loading.

Citation: 7.110.B. Surfacing. All parking and loading areas and driveways thereto shall be paved with asphalt, concrete or other hard surface approved by the City Engineer. Parking and loading areas shall be adequately designed, graded, and drained.

Response: The proposed project will comply with this requirement.

Citation: 7.110.C. Bumper guards or wheel barriers. Permanently affixed bumper guards or wheel barriers are required and shall be so installed that no portion of a vehicle will project into a public right-of-way or over adjoining property. The area beyond the wheel barriers or bumper guards shall be surfaced as required in Section 7.110(B) or landscaped.

Response: The proposed project will comply with this requirement. See Response to 3.120.9 for more information regarding wheel stops, and reference Site Plan and Parking Plan.

Citation: 7.110.D. Size of parking spaces and maneuvering areas. The parking area, each parking space, and all maneuvering areas shall be of sufficient size and all curves and corners of sufficient radius as determined by the City Engineer to permit the safe operation of a standard size vehicle subject to the following minimum requirements:

1. Full size parking spaces shall be nine and one half (9.5) feet wide and 20 feet long.

2. Compact parking spaces shall be eight and one half (8.5) feet wide and 16 feet long for no more than 50% of the parking spaces required. An increase to 75% compact may be approved administratively by the Community Development Director upon a finding that anticipated use would not require compliance. An increase greater than 75% may be approved by the Community Development Director as a Class 1 Variance in accordance with Article 9.

3. Where a landscaped area, fence, or wall is adjacent to a parking space, the parking space shall be ten (10) feet wide.

4. A maximum of 2.5' of a parking stall required length may extend beyond the wheel barrier into a landscaped area. The parking stall shall not extend into a pedestrian walkway area.

Response: The Site Plan and Parking Plan (Part 2 pp. 28 and 34) indicate parking spaces designed in conformance with the dimensional requirement above.

Numbers of full-size and compact spaces for each area of parking are indicated in tags, and dimensions are provided, to demonstrate compliance with the 50% maximum for compact spaces. 33 of the 70 spaces provided on site are compact, representing 47% of the on-site total.

Note that all parking spaces in the north and south row of the open lot in the northwest portion of the site claim the 2.5' maximum extension into landscaped strips, reducing total depth to 17'-6" for these full-size spaces.

Citation: 7.110.E. Access. Parking or loading areas having more than four (4) spaces shall be designed so that vehicles do not back into public streets, or do not use public streets for maneuvering. All entrances and exits onto public streets shall first have a Driveway Permit from the Engineering Department and shall be designed and constructed to City standards.

Response: All parking spots are sufficiently clear of public streets so as no parking vehicles will be forced to maneuver on or back up into public streets. All drive entries, which are existing drive entries with improvements as deemed necessary, will meet the requirements listed, as coordinated with the City. The entry into the Stephanie's Cabin lot, which is currently a one-way entry, will remain so with posted signage.

Citation: 7.110.F. Lighting. Parking or loading areas that will be used at nighttime shall be lighted. Outdoor lighting shall be directed away from any adjacent residential zone or public street.

Response: Lighting will be provided for parking and loading areas with the appropriate and required lumen levels and cutoffs. Reference Site Lighting Plan, Part 2 pp. 35.

Citation: 7.110.G. Landscaping. 1. Landscaping shall be provided as required in Section 7.170 and Section 3.105 through 3.120. 2. Required landscaped yards shall not be used for parking.

Response: Landscaping and parking shall meet all listed requirements.

Citation: 7.110.H. Additional Requirements. 1. Directional signs and pavement marking shall be used to control vehicle movement in parking area.

Response: Directional markings shall be provided at all three drive entries (2 of them also exits), and entries into covered parking and open parking lots. All of these entries shall be bi-directional, except for the Stephanie's Cabin lot, where directional markings and posted signage shall direct for entry only.

"No Parking" signs shall also be installed along the sidewalk to the north of the east-west drive, to ensure that this long, straight driveway is not obstructed.

Citation: 7.110.*I.* Aisle Widths. Aisles with parking adjacent on one or both sides, depending on angle of parking spaces:

(excerpted as appropriate for calculations)

0 - 40 degrees	12 feet
71 - 90 degrees	24 feet

Response: Parking is designed along a 90 degree orientation. 24-foot widths are therefore observed for all drive aisles adjacent to parking. The aisle for parallel parking along the west edge of the site, which doubles as a driveway, is also 24' to allow for two-way traffic.

The opening into the enclosed parking lot on the west elevation of the building is reduced to 20 feet for structural reasons. However, as all parking access is bi-directional, this opening is provided for convenience only, and would not be subject to the code minimum.

Citation: 7.120. DRIVEWAY DEVELOPMENT STANDARDS. All driveways providing access to parking spaces and loading areas required under this ordinance, including those for a single-family dwelling on a lot, shall conform to the Astoria City Code Sections 2.050 through 2.100 and Development Code Section 3.008.D, in addition to requirements in the Astoria Engineering Design Standards for Roadways (Chapter 4).

Response: The proposed project will comply with this requirement.

Citation: 7.140. PARKING PLAN REQUIRED. Plans, at a workable scale, for all parking and loading areas required under this Section, shall be submitted to the Community Development Director for approval prior to issuance of a permit; or, if no building permit is required, at the time of application for a driveway permit; or, if no such permit is required, prior to commencing any paving or use of the parking or loading area. No such work or use shall commence prior to approval by the City of the plans required by this Section.

Response: Parking will be clearly indicated on the Site Plan to be included with the Permit Set for the project. A separate Parking Plan has also been included with this submittal, and may be found in Part 2, pp. 32.

Citation: 7.150. ACCESSIBLE PARKING SPACES. A. Effective September 1, 1990, existing and new parking spaces for disabled persons shall be required by law at all public and government buildings.

B. The size, location, dimension, and marking for accessible parking spaces shall be in accordance with current State and Federal regulations for accessible parking facilities.

Response: (1) van-accessible space and (2) standard accessible spaces are provided in the enclosed parking area in the Astoria Fairfield, in compliance with State and Federal requirements. These spaces satisfy requirements for the hotel. (1) van-accessible space and (1) standard accessible space are also provided at the Stephanie's Cabin lot, for future use.

Citation: 7.170. LANDSCAPING OF OUTDOOR STORAGE OR PARKING AREAS. A minimum of 5% of the gross parking lot area shall be designed and maintained as landscaped area, subject to the standards in Sections 3.105 through 3.120. This requirement shall apply to all parking lots with an area of 600 square feet or greater. Approved sight obscuring fences or vegetative buffers shall be constructed where commercial parking lots abut Residential Zones. The minimum 5% landscaping shall be counted as part of the total landscaping required for the property.

Response: Landscaped area within parking is calculated below, for component projects and the total site. Only vegetated landscaped area has been calculated, to provide the most conservative estimate. Percentages are conformant with requirements above in all cases. Reference Site Diagram in Part 2, pp. 66.

Project	Parking Area	Landscape in Parking	Area %
Hotel	13,375 SF	2,758 SF	20.62%
Stephanie's Cabin	5,342 SF	664 SF	12.43%
TOTAL	18,717 SF	3,422 SF	18.28%

ARTICLE 8: SIGN REGULATIONS

Note: Citations from the Astoria Development Code are referenced as they are relevant to the proposed project. Where code sections are not relevant, they are omitted for brevity.

Citation: 8.010. PURPOSE. The purpose of this Section is to regulate the number, size, placement and physical characteristics of signs in order to achieve the following objectives:

1. The maintenance of public safety and traffic safety by ensuring that signs are appropriately designed, constructed, installed and maintained.

2. The enhancement of the operation of businesses in the City by promoting the reasonable, orderly and effective display of signs.

3. The enhancement of the City's physical appearance by promoting signs which are visually compatible with their surroundings and preserve the visual integrity of the area.

Response: Signage for the proposed project will take into account all of these guidelines in implementing signage for the building and the site. Signage for traffic and parking will be provided in conformance with Articles 3 and 7 and those sections' previous responses. Other signage for building identification, wayfinding, and other non-safety-related purposes will be designed with their impact on the surroundings and city in mind.

Citation: 8.020. ADOPTION OF UNIFORM SIGN CODE. The City of Astoria enforces the State building code per ORS Chapter 455 and the rules adopted there under by reference, except as modified in this Code.

Response: Proposed project signage will observe all requirements listed therein.

Citation: 8.030. CONFORMANCE. No sign may be erected or allowed to remain unless it conforms with the regulations of Sections 8.010 through 8.180. Sign permits, as required by 8.060, must be approved prior to the placement of a sign. All signs in historic districts, or in conjunction with historic buildings or sites subject to the Historic Landmarks Code must be approved through the review process outlined in Sections 6.050 and 6.090.

Response: All signage for the proposed project will conform to the listed requirements and will be submitted for approval by sign permits as needed. Building signage and monument signage are illustrated on pp. 61 and pp. 62.

Citation: 8.040. EXEMPT SIGNS. A. The following signs are permitted and are exempt from the requirements of this Code:

[Only applicable listings shown]

- 4. Official informational signs, traffic signs, kiosks, signals, notices, and decorative and event banners.
- 5. Historical markers erected or maintained by public authority or by a recognized historical organization.

11. Informational signs, such as hours of operation, accepted cards, and similar signs not exceeding one (1) square foot for groups of related signage. Open and closed signs not exceeding 1.5 square feet.

Response: The project team understands that these excerpted categories, and all categories of signage in 8.040, are not required to demonstrate conformance to the code requirements. These signs have not be submitted for approval by Design Review or Historic Design Review. No signage has been submitted for Stephanie's Cabin at this time; signage will be coordinated with required review and permitting for that project.

Citation: 8.050. PROHIBITED SIGNS. A. The following signs are prohibited: [list omitted for brevity]

Response: The project team has read, understands, and will abide by all prohibited sign types listed in the Code.

Citation: 8.060. SIGN PERMITS. A. Sign Permit Required. A sign permit is required for the erection of any new sign or the structural alteration of an existing sign, except those signs that are exempt in Section *Citation:* 8.040. A sign permit is required for modification or alteration of the sign face, or any portion of the sign or supporting structure.

Response: The project team understands the required submittals for a sign permit, and will submit all those listed in this section at the time of application.

Citation: 8.070. GENERAL SIGN REGULATIONS. The following general provisions shall govern all signs, in addition to all other applicable provisions pertaining to signs: [only pertinent regulations are listed here:]

Citation: A. Sign Face Area.

2. When signs are constructed of individual elements attached to a building wall, the sign area is determined by calculating the area of an imaginary rectangle drawn around the sign elements.

4. The area of sign faces for round or three dimensional signs is determined by the maximum sign face area visible at one time.

7. Sign area square footage is based on frontage. Freestanding and monument signs are based on the site frontage, all other signs are based on the building frontage.

Response: Signage area has been calculated as noted above. See following responses specific to signage size by type and locations, and reference signage details in Part 2, pp. 61 and 62.

Citation: 8.070.B. Height of Signs. The overall height of a sign or sign structure is measured from the existing grade directly below the sign to the highest point of the sign or sign structure.

Response: Signage height has been calculated as noted above. See following responses specific to signage size by type and locations, and reference signage details in Part 2, pp. 61 and 62.

Citation: 8.070.C. Clearances. Clearances are measured from the existing grade directly below the sign to the bottom of the sign structure enclosing the sign face.

Response: Signage clearances have been calculated as noted above. See following responses specific to signage size by type and locations, and reference signage details in Part 2, pp. 61 and 62.

Citation: 8.070.D. Corner Signs. Corner signs facing more than one (1) street shall be assigned to a frontage by the applicant. The sign must meet all provisions for the frontage it is assigned to.

Response: No corner signs are included in the proposed project.

Citation: 8.070.E. Sign Placement.

1. Placement. All signs and sign structures shall be erected and attached totally within the site except when allowed to extend into the right-of-way.

2. Frontages. Signs allowed based on the length of one (1) site frontage may not be placed on another site frontage.

a. Exception. If a portion of a building facade or site line is more suited for signage than the allowable frontage, an applicant may choose to use that building facade or site line in lieu of the allowable frontage. The square footage of the sign shall be calculated on the length of the newly selected building facade or site line or on the allowable frontage, whichever is smaller. In choosing this exception, the applicant shall relinquish the right to install signage on the other allowable frontage unless a variance is granted.

3. Vision Clearance Areas. No sign may be located within a vision clearance area as defined in Section 3.045. No support structure(s) for a sign may be located in a vision clearance area unless the combined total width is 12 inches or less and the combined total depth is 12 inches or less.

4. Vehicle Area Clearances. When a sign extends over a private area where vehicles travel or are parked, the bottom of the sign structure shall be at least 14 feet above the ground. Vehicle areas include driveways, alleys, parking lots, and loading and maneuvering areas.

5. Pedestrian Area Clearances. When a sign extends over sidewalks, walkways or other spaces accessible to pedestrians, the bottom of the sign structure shall be at least eight (8) feet above the grade except for pedestrian signs located below marquees, canopies, or awnings which shall be at least seven and one half (7.5) feet above the grade.

6. Required Yards and Setbacks. Signs may be erected in required yards and setbacks.

Response: All project signage shall observe the requirements above. The wall signs on the south elevation is 51 square feet in area, when calculated as outlined above. The south frontage is 212 feet in length—more than four times as long as required for the south-facing wall sign.

All other listed requirements for clearances and setbacks, and other requirements detailed above, are observed by proposed signage.

Citation: 8.070.F. Signs Not to Constitute a Traffic Hazard. Signs or sign supporting structures shall not be located so as to detract from a motorist's view of vehicular or pedestrian traffic or a traffic sign.

Response: Proposed project signage will conform to these requirements.

Citation: 8.070.G. Glare. All signs shall be so designed and located so as to prevent the casting of glare or direct light from artificial illumination upon adjacent publicly dedicated roadways and surrounding property.

Response: Proposed project signage will conform to these requirements.

Citation: 8.070.H. Removal of Abandoned Sign. It is the responsibility of the property owner to remove any abandoned sign within 90 days of cessation of use.

Response: Proposed project operations will conform to these requirements.

Citation: 8.070.1. Materials. A sign subject to a permit shall meet the material and construction methods requirements of the Uniform Sign Code.

Response: Proposed project signage will conform to these requirements.

Citation: 8.070.J. Maintenance. All signs, together with their supporting structures, shall be kept in good repair and maintenance. Signs shall be kept free from excessive rust, corrosion, peeling paint, or other surface deterioration. The display surfaces and vegetation surrounding all signs shall be kept in a neat appearance.

Response: Proposed project operations will conform to these requirements.

Citation: 8.070.K. Through the Block Signage. Buildings which contain frontage on two parallel arterial streets, or on an arterial street and a waterway, shall be entitled to twice the allowable total square footage for the zone in which it is placed. [See 8.070(E.2)]. This double allowance affects only the overall total square footage for the site. The maximum square footage of each individual sign, the square footage for the frontage, the number of signs, location, and other attributes of the sign are not affected by this allowance.

Response: This allowance does not apply to the proposed project.

Citation: 8.080. SPECIFIC SIGN REGULATIONS (Applicable to All Zones).

A. Wall or Roof Signs.

1. Projection. Signs may project a maximum of 12 inches from the face of the building to which they are attached, provided the lowest portion of the sign is at least eight (8) feet above grade. Any portion lower than eight (8) feet may only project four (4) inches.

2. Extension above roof line. Unless otherwise specified, signs may not project more than four (4) feet above the eaves of the primary roof structure of a pitched roofed building, or more than two (2) feet above the eave or parapet of the primary roof structure of a flat roofed building.

Response: A wall sign will be included at the project and is elaborated on in the Response to 8.130.C below. The wall sign will be included on the south elevation of the stair tower and will be approximately centered on the fourth floor line, 26'-6" above grade. It will not extend above the roof line. Final signage design will be by project bidders, but documents will specify that wall signage is not exceed 12" in depth from the wall face. Approximately 6" of projection is currently detailed.

Citation: 8.080.F. Removal of Signs. When a sign is proposed, or when roadways are widened, or other improvements made in the right-of-way, which create unsafe conditions due to a sign extending into the right-of-way, the City Engineer may protect the public safety by requiring the sign to be modified or removed. The modification or removal shall be at the owner's expense.

Response: The project team understands and will observe this requirement, and will coordinate as needed with the City Engineer.

Citation: 8.130. BASE ZONE REGULATIONS. In addition to conformance with the sign regulations of Sections 8.020 through 8.180, all uses and sites within a specific zone shall conform to the types, numbers, sizes, and features of signs allowed in that specific zone. [only Zone C-3 regulations listed].

8.150. C-2, C-3, GI, S-1, S-2, A-1, A-2, A-2A, LS, HR, CA, HC, AH-HC, FA ZONE SIGN REGULATIONS. For all uses and sites in the C-2 (Tourist Commercial), C-3 (General Commercial), S-1 (Marine Industrial Shorelands), S-2 (General Development Shorelands), A-1 (Aquatic One Development), A-2 (Aquatic Two Development), A-2A (Aquatic Two A Development), LS (Local Service), HR (Hospitality/Recreation), CA (Education/Research/Health Care Campus), HC (Health Care), AH-HC (Attached Housing - Health Care), and FA (Family Activity) Zones, the following types, numbers, sizes and features of signs are allowed. All allowed signs must also be in conformance with the sign regulations of Sections 8.070 through 8.080.

Citation: 8.130.A. Total Square Footage Permitted. The total square footage of all signage associated with a business site, use, or activity shall not exceed 150 square feet, with no single sign exceeding 100 square feet.

Response: The total signage included above consists of one wall sign of 51 square feet and one monument sign 30 square feet in area. Total area of signage is 81 square feet, less than the 150 square foot maximum.
Citation: 8.150.C. Wall, Roof Mounted, or Projecting Signs.

1. Area. The total allowable area for all permanent signs attached to the building is determined as follows:

a. A wall, roof mounted, or projecting sign of one (1) square foot per lineal foot of building frontage is allowed.

b. Individual sign face area. The maximum size of an individual sign within the total allowable area limits is 100 square feet.

Response: Wall signage meets these area requirements. Reference responses above and Part 2, pp. 61.

Citation: 8.150.D. Number of Signs. The number of signs within the total allowable area is limited to two (2) signs per building frontage.

Response: One (1) wall mounted sign is included on the south elevation of the proposed project. No wall signage is proposed for the north, east or west elevations.

Citation: 8.130.H. Monument Sign.

1. Number. One (1) sign shall be permitted for each site devoted to a single business, building, use or activity with a street frontage of up to 200 lineal feet. Lots with frontage in excess of 200 lineal feet may have a maximum of two (2) monument signs. Corner lots can count two (2) street frontages.

2. Area. Total sign area shall not exceed one (1) square foot of sign area for one (1) lineal foot of site frontage that is not already utilized by other signs on the site or attached to buildings. Monument signs are allowed up to a maximum of 100 square feet. Allowable area on sites without buildings shall not exceed 32 square feet.

3. Height. The maximum height of a monument sign shall be 10 feet.

Response: Depending on interpretation of street frontage along Second Street, the proposed project has a total street frontage of approximately 120 feet, and qualifies for one (1) monument sign. A monument sign shall be located in the landscaped patch at the southwest corner of the site, located north of the view clearance triangle at the drive entry. Total site frontage is over 1000 lineal feet, even accounting for subtraction of other signage lineal footage, so the 100 square foot maximum will govern, as will the 10' height maximum (although the signage designed is substantially smaller). Reference Article 14 for more restrictive monument sign limits. Reference Part 2, pp. 62 for the monument sign design.

ARTICLE 14: MISCELLANEOUS OVERLAY ZONES

Note: Citations from the Astoria Development Code are referenced as they are relevant to the proposed project. Where code sections are not relevant, they are omitted for brevity.

BVO: BRIDGE VISTA OVERLAY ZONE

Citation: 14.085. PURPOSE. The purpose of the Bridge Vista Overlay Zone is to implement the land use principles of the Astoria Riverfront Vision Plan, dated December 2009, as they pertain to the Bridge Vista Area. The Bridge Vista Overlay (BVO) Zone is intended to serve objectives including supporting water-dependent and water-related uses and new uses consistent with Astoria's working waterfront; encouraging design that is compatible with the area's historic and working waterfront character; protecting views of and access to the Columbia River; enhancing open space and landscaping, particularly adjacent to the River Trail; strengthening the pedestrian orientation and gateway characteristics of the area; and allowing for commercial and residential uses that complement the Downtown core and support other planning objectives for the area. The BVO Zone extends from approximately the West Mooring Basin to 2nd Street and between West Marine Drive / Marine Drive and the northern edge of overwater parcels on the Columbia River; so and the City's Zoning Map.

Response: The proposed project is designed with sensitivity to the goals stated as part of the Purpose of the Bridge Vista Overlay. The hotel is a zone-conformant use (reference Article 2) with architecture that honors the scale and "working waterfront" character of the overlay zone. It observes all prescriptive requirements for height, floor area, and other size requirements as noted elsewhere in this document. Part 2 also includes research examples of historical working waterfront precedents in Astoria of comparable or greater height and footprint, of the same eastwest orientation and of similar massing. In addition to meeting the Development Code's prescriptive requirements to design of the building remains within the range of sizes visible in the historical precedents that the BVO code is drafted to reflect.

The hotel's aesthetic character imitates the historic detailing of working waterfront precedents as much as contemporary building methods and materials will allow. The project team has included features such as beveled cross sections at aluminum glazing frames designed by the manufacturer to imitate historic glazing profiles, and compound trim configurations based directly on precedents in Astoria cited in Part 2. The pitched roof evokes the classic simple industrial gables, with six shed roof gables to offer some visual relief to the roofline without departing from the streamlined style in the precedents, and a soffit detail exposing wood rafter tails in the same manner.

Citation: 14.090. APPLICABILITY AND REVIEW PROCEDURES. The provisions in Sections 14.085 to 14.125 apply all uses in all areas of the Bridge Vista Overlay Zone unless indicated otherwise in Table 14.090-1 and in the individual sections.

Response: The Table is not copied here; all standards and regulations identified are elaborated in the items below.

Citation: 14.105. USES PERMITTED FOR ON-LAND DEVELOPMENT. B. Commercial Zone. The following uses and activities and their accessory uses and activities are permitted outright in Commercial Zones in the Bridge Vista Overlay Zone, in addition to uses permitted outright in the base zone identified in Article 2, and subject to the other appropriate development provisions of this Section.

- 1. Manufacturing or light industrial with a retail component.
- 2. Dwellings in a new or existing structure above the first floor that has commercial or mixed uses.

Response: The hotel use for the proposed project is permitted by the base zone listing for C-3 included in Article 2.

Citation: 14.110. USES PROHIBITED FOR ON-LAND DEVELOPMENT.

B. Commercial Zone. The following uses and activities and their accessory uses and activities are prohibited in the Commercial Zone in the Bridge Vista Overlay Zone. Permitted uses are identified in the base zones in Article 2 and in Section 14.105.B of this ordinance.

- 1. Auto sales and services.
- 2. Gasoline services stations.
- 3. Manufacturing or light industrial without a retail component.
- 4 Single-family dwelling.
- 5. Two-family dwelling.

Response: None of the prohibited uses describe or are related to the proposed use of the project.

Citation: 14.113. STANDARDS FOR ON-LAND DEVELOPMENT The following development standards apply to on-land development in the Bridge Vista Overlay Zone south of the River Trail / 50 feet wide railroad line property. The Overwater Development standards shall apply to on-land development north of the River Trail / 50 feet wide railroad line property. In the event of a conflict between this Section and other Sections of the Astoria Development Code, this Section shall control.

Response: The proposed project site is located in the BVO, south of the River Trail, and is governed by this section of the Code.

Citation: 14.113.A. Height.

1. Maximum building height is 35 feet except as noted in subsection (2) of this section.

2. Building height up to 45 feet is permitted when building stories above 24 feet are stepped back at least 10 feet in accordance with Section 14.113.C.

3. Exceptions to building height restrictions may be granted through provisions in Section 3.075.

Response: The building will observe the 45-foot height limits established with associated stepback requirements in 14.113.A.2. See Response to 2.410 for further detail on the height limit. Reference Building Sections in Part 2, pp. 41.

Citation: 14.113.B. Setbacks.1. Minimum Setbacks.

a. North-South Rights-of-Way between West Marine Drive / Marine Drive and the Columbia River. A minimum view corridor width of 70 feet, centered on the right-of-way centerline, shall be provided on north-south rights-of-way between West Marine Drive / Marine Drive and the Columbia River. Buildings shall be set back in order to achieve the 70-foot view corridor.

Response: The only applicable right-of-way abutting the site is the end of Second Street to the east. The project observes this setback of 35 feet from the centerline of the street, which translates to slightly less than 10 feet from the property line. A 10-foot setback will be observed to the rake fascia (the surface projecting furthest east) in order to account for any margin of error. The taller four-floor portion of the building is set back an additional 50 feet from this wall line, preserving more views over the single-story Entry/Lobby space.

The proposed development also includes new hardscape at the terminus of Second Street, with an informational placard for the nearby White Star Cannery remains. Final design of this feature is proposed to be coordinated with the City. The area of hardscape within the property also includes two bicycle racks detailed in Article 7 responses above, and two benches designed to match those placed elsewhere along the River Trail.

Citation: 14.113.B. Setbacks.1. Minimum Setbacks.

b. Adjacent to the River Trail.

(1) The minimum setback adjacent to the River Trail shall be 10 feet on the south side of the trail and 20 feet on the north side of the trail.

(2) The setback area shall be landscaped or shall include a combination of landscaping and pedestrianoriented amenities such as walkways, seating, and plaza space.

Response: The building shall be set back 10 feet from the property line on the north side, to the south of the River Trail. This includes the building mass and adjacent exterior parking lot. The enclosures for trash/recycling and the electrical transformer also observe this 10-foot setback. Landscaping is designed within the setback, including two hardscape patios. Reference Planting Plan, Part 2 pp. 28 for further detail on landscaping.

Citation: 14.113.B. Setbacks.1. Minimum Setbacks.

c. Adjacent to West Marine Drive / Marine Drive and Other Rights-of-Way Parallel to West Marine Drive (except River Trail). The minimum setback for yards fronting West Marine Drive / Marine Drive and other public rights-of-way parallel to West Marine Drive / Marine Drive in the Bridge Vista Overlay Zone, with the exception of the River Trail, shall be zero (0) feet.

Response: Only the south end of a vehicle drive and a parking spot are present at this frontage. Both will observe the zero (0) foot minimum.

Citation: 14.113.B. Setbacks.2. Maximum Setbacks.

a. Adjacent to West Marine Drive / Marine Drive and Parallel Rights-of Way. The maximum setback for yards fronting West Marine Drive / Marine Drive and all parallel rights-of-way in the Bridge Vista Overlay Zone, with the exception of the River Trail, shall be five (5) feet.

b. Allowed Extensions of Maximum Setbacks. The maximum setback for yards fronting a public right-ofway in the Bridge Vista Overlay Zone may be extended to 20 feet for up to 50% of the building facade if the setback is used for a walkway, plaza, courtyard, or other pedestrian-oriented amenity or public gathering space.

Response: Due to the existing drive entry, which must remain in order to satisfy fire- and trafficrelated code requirements, and the existing building (Stephanie's Cabin) adjacent to the south portion of the lot, it is not possible for building mass to be organized on the site to meet this maximum setback along Marine Drive, either at the 5 foot or 20 foot benchmark. This requirement does not apply to the proposed project.

Citation: 14.113.C.Stepbacks.

1. Purpose. The purpose of a stepback is to allow for less obstructed views from above the building and to create a less imposing building scale as viewed from the street or parallel/adjacent trail. A stepback is also designed to allow more light down to the adjacent or fronting street, sidewalk, or trail.

Response: The project has utilized the required stepback to create guestroom decks overlooking the River Trail on two of the four levels, allowing guests on their decks to establish a visual link with those on the Trail below and to the river beyond. From the point of view of a passer-by on the Trail the building appears less massive, admits more sunlight from the south, and allows visual communication between building users and Trail users.

Citation: 14.113.C.Stepbacks.

2. Additional Building Height. Where the height of a building or building addition is proposed to exceed 24 feet, at least that portion of the building exceeding 24 feet, shall provide a stepback of at least 10 feet from the front plane of the proposed building or building addition that faces the street or the River Trail.

Response: Project stepbacks meet the dimensional requirements listed for building mass. Reference Building Sections in Part 2, pp. 41. The second floor steps back six (6) feet from the ground floor, and the third floor steps back another four (4) feet, for a total 10-foot stepback at the level of the third floor deck, around 21 feet in elevation.

Citation: 14.113.D. Size. The gross floor area of on-land commercial uses in the Bridge Vista Overlay Zone shall be a maximum of 30,000 square feet.

See also, from Section 1.400. DEFINITIONS:

FLOOR AREA: The sum of gross horizontal areas of the several floors of a building, measured from the exterior face of the exterior walls or from the center line of walls separating two buildings, but not including:

- a. Attic space providing headroom of less than seven feet.
- b. Basement, if the floor above is less than six feet above grade.
- c. Uncovered steps or fire escapes.
- d. Private garages, carports or porches.
- e. Accessory off-street parking or loading spaces.

Response: Floor area calculations for the building are as follows:

First Floor	5,399 square feet
Second Floor	8,437 square feet
Third Floor	7,889 square feet
Fourth Floor	7,889 square feet
Total Area	29,614 square feet

Per the Code Definition of floor area, the calculations exclude area of covered parking (Item e), the open west stair (Item c) and guestroom decks (Item d and "exterior wall" designation). The total area falls below the 30,000 square foot maximum.

Citation: 14.115. DESIGN STANDARDS AND GUIDELINES A. Applicability and Review. The following design standards and guidelines apply to all new construction or major renovation, where "major renovation" is defined as construction valued at 25% or more of the assessed value of the existing structure. Applications in the Bridge Vista Overlay Zone shall be reviewed in a public design review process subject to the standards and guidelines in Sections 14.095 to 14.125. Some of the following design standards and guidelines apply to all uses. Other standards and guidelines are differentiated by non-industrial uses and industrial uses. For the purposes of these Sections, industrial uses include the following as further defined in Section 1.400 of the Development Code: [list is omitted for brevity]

Non-industrial uses include all other uses that are allowed outright or conditionally in the S-2, A-1, A-2, A-2A, and C-3 zones in the Bridge Vista Overlay Zone.

Response: The list of industrial uses does not include use involved with the project. The proposed project is classified as a non-industrial use. Only requirements for non-industrial uses are referenced below.

Any future Stephanie's Cabin renovation is anticipated to be less than 25% of the assessed value of the structure, and these standards and guidelines will not apply. The project team understands that standards will apply if the project value exceeds this threshold.

Citation: 14.115.B. Building Style and Form. 1. Standards for All Uses. Projecting wall-mounted mechanical units are prohibited where they are visible from a public right-of-way or the River Trail. Projecting wall-mounted mechanical units are allowed where they are not visible from a public right-of-way or River Trail.

Response: No projecting wall-mounted units will be used as part of the project. Guestroom heating and cooling will be provided by packaged terminal heat pump (PTHP) through-wall units, but the units will be set such that their architectural grilles are flush with the wall and blend into the window/trim arrangement. Reference Part 2 for elevations, renderings and other illustrations.

Citation: 14.115.B.2. Guidelines for All Uses.

Citation: 14.115.B.2.a. Buildings should retain significant original characteristics of scale, massing, and building material along street facades.

Response: This guideline appears to address additions and renovations. Regardless, the Second Street frontage of the project has been designed as a low-height transition from the street to the larger building mass to the west, with ample glazing detailed to evoke the appearance of historical industrial glazed assemblies, and points of entry just around the northeast and southeast corners to activate the street.

Citation: 14.115.B.2.b. Additions to buildings should not deform or adversely affect the composition of the facade or be out of scale with the building.

Response: This guideline appears to address additions and renovations. The building is a new structure. However, the new design endeavors to fall within the range of scales and styles, including façade composition, of historical precedents along the Astoria waterfront, as illustrated in Part 2.

Citation: 14.115.B.2.c. Distinctive stylistic features or examples of skilled craftsmanship should be treated with sensitivity. All buildings should be respected and recognized as products of their time.

Response: This guideline appears to address rehabilitations and renovations. Regardless, the new design adapts available contemporary construction methods and materials to create a historic-appearing structure with clear antecedents for aesthetic detailing and material choice, as outlined in Part 2.

Citation: 14.115.B.2.d. Mid-century "slip covers" should be removed when possible.

Response: This guideline appears to address rehabilitations and renovations, and therefore does not apply. There are no mid-century cladding elements remaining from any old construction, nor is the new project designed with a mid-century modern aesthetic in mind.

Citation: 14.115.B.2.e. Solid waste disposal, outdoor storage, and utility and mechanical equipment should be enclosed and screened from view. Rooftop equipment should be screened from view by a parapet wall, a screen made of a primary exterior finish building material used elsewhere on the building, or by a setback such that it is not visible from adjacent properties and rights-of-way up to approximately 100 feet away.

Response: The proposed project includes a screened solid waste collection area and a screened exterior transformer. They are located on the northwest and northeast corners, respectively, of the exterior parking lot. Both are clad to match the building exterior, with operable gates to allow for trash collection and maintenance, and are detailed in Part 2, pp. 63 and 64.

Rooftop mechanical units are screened such that the building parapet wall screens the equipment from view up to a distance of 100 feet. Reference section sketch in Part 2, pp. 65.

Citation: 14.115.B.2.f. Building forms should be simple single geometric shapes, e.g. square, rectangular, triangular.

Response: The primary mass of the building, housing the guestrooms and parking, is a simple rectangle. Secondary formal variations are present to satisfy code requirements at the stepbacks on the north elevation facing the River Trail and at one open stair. Other smaller forms and plane breaks may be found at the shed gables, the stair/elevator tower and the lower Entry/Lobby space at the east end in order to satisfy the aesthetic intent of the BVO or to address comments raised by the Design Review Committee. All forms and spaces—beside pitched roofs—are defined by orthogonal 90 degree angles. The overall building form is simple, clear and geometrical.

Citation: 14.115.B.2.g. Incompatible additions or building alterations using contemporary materials, forms, or colors on building facades are discouraged.

Response: This guideline appears to address rehabilitations and renovations. Regardless, the new structure closely matches the appearance of historic cladding types used on working waterfront buildings, using newer materials, where necessary, to satisfy contemporary requirements for durability. The proposed high-end fiber cement v-groove siding is identical to the painted wood siding cited in working waterfront precedents in Part 2, as is the composite board-and-batten. Because dimensional wood siding is scarcer in these profiles than it was in the days of the historic waterfront, because other products have greater durability and sustainaiblity, and because matching historic types involves painting the siding anyway, more suitable contemporary materials are being proposed in lieu of wood for these applications.

Citation: 14.115.C. Roof Form and Materials.

1. Roof Form Standards for All Uses. The following roof forms are prohibited:

- a. False mansard or other applied forms; and
- b. Dome skylights.

Response: Neither of the prohibited roof forms are incorporated into the new building mass.

Citation: 14.115.C.2. Roof Materials Standards for All Uses.

a. Buildings shall be constructed or reconstructed with one of the following roofing materials:

- (1) Cedar shingle;
- (2) Composition roofing; or
- (3) Materials cited in Section 14.115.C.4 or Section 14.115.C.6.
- b. The following roofing materials are prohibited for all types of buildings:
- (1) High profile standing seam metal roof and
- (2) Brightly colored roofing material.
- c. Roofing materials shall be gray, brown, black, deep red, or another subdued color

See also, from 14.115.C.4: Roof Materials Standards for Non-Industrial Uses. Buildings for non-industrial uses shall be constructed or reconstructed with one of the following roofing materials:

a. Materials cited in Section 14.115.C.2; or

b. Built-up roofing materials.

See also, from 14.115.C.6: Roof Materials Standards for Industrial Uses. Buildings shall be constructed or reconstructed with one of the following roofing materials:

- a. Materials cited in Section 14.115.C.2; or
- b. Galvanized corrugated metal; or
- c. Low profile standing seam, metal roof (Figure 14.115-4); or
- d. Roll down.

Response: The proposed roofing material for the majority of the project is a standing seam metal roofing, 22 gauge with narrow battens, one inch in height. Per the guidelines in the Development Code this is not a high-profile standing seam metal roof prohibited in 14.115.C.2.b(1), but rather a low profile standing seam roofing per 14.115.C.6.c. The product will be coated with a durable, fade-resistant PVDF coating for a black appearance in keeping with color restrictions above, and matching the trim detailing at the exterior walls of the project. This roofing will appear on the pitched roofs over the guestroom form and the Entry-Lobby area, as well as the entry canopy and the short awning on the south side of the building.

Concealed portions of the roof on both the single-story and four-story building masses will be roofed with bituminous built-up roofing meeting criterion 14.115.C.4.b, with a cap sheet, grey in color, that will not be visible from the ground plane.

Citation: 14.115.C.3. Roof Form Standards for Non-Industrial Uses Buildings for non-industrial uses shall include one of the following roof forms:

- a. Single gable with low pitch; or
- b. Repetitive gable with steep pitch; or
- c. Flat or gable roof behind parapet wall.

Response: The roofs for the four-story and one-story forms at the project both have a primary gable at a 3:12 pitch. The four-story roof includes six shed gables detailed in a response below. The Entry/Lobby roof is broken at the top by a north-facing clerestory, but is still understood to meet the single gable requirement. There are smaller flat roof areas with both forms to

accommodate rooftop equipment and building circulation. In the case of the four-story form the roof is bounded on all four sides by a parapet wall projecting slightly above the pitched roof. In the single-story pitched roof this flat roof area drops down directly, and there is no visible headwall, to minimize the visual presence of the change.

Citation: 14.115.C.7. Roof Form Guidelines for Non-Industrial Uses. Buildings for non-industrial uses may also include the following roof forms or features:

- a. Structural skylights
- b. Shallow eaves behind parapet wall

Response: The single-story Entry-Lobby form includes a clerestory window at the roof peak, which is not technically a skylight, but which serves the same purpose and provides greater visual interest along the north elevation while drawing for historic industrial typologies. The project team proposes that this be allowed as a compliant design feature.

Citation: 14.115.C.8. Roof Form Guidelines for Industrial Uses. Buildings for industrial uses may also include one or more of the following roof forms or features:

- a. Small shed roof dormers
- b. Monitor roof on ridge line (Figure 14.115-7)
- c. Flat panel skylights or roof window

Response: The project includes six small shed roof dormers, which are allowed to extend to the eaves in order to break up the roofline and relieve the continuity of the massing along north and south lines. The project team understands that the hotel does not meet the criteria of an industrial use, but this aesthetic feature is being proposed in response to feedback from the Design Review Committee as way to break up the straight lines of the building along the north and south elevations, in a way not out of keeping with sworking waterfront references.

Citation: 14.115.D. Doors.1. Standards for All Uses. The following types of doors and door treatments are prohibited:

- a. Automatic sliding doors;
- b. Primary entry doors raised more than three feet above sidewalk level;
- c. Doors flush with building facade;
- d. Clear anodized aluminum frames; and
- e. Reflective, opaque, or tinted glazing.

Response: As a result of discussion with the City, the standard automatic sliding door typically preferred by the hotel chain will be changed to an out-swing double door on automatic controls in the southeast Lobby entry vestibule. This double leaf door and the other single leaf door connecting the dining area with the patio will be integrated with the glazing assemblies, which are recessed from the face of the wall approximately 9". Two other glazed doors along the north

concrete wall, the egress door at the south elevation at the base of the stair tower, and the egress door at the west stair, will be recessed between 3 and 5 inches from the face of cladding. Reference First Floor Plan, Part 2 pp. 36.

Otherwise exterior doors will meet all other requirements. They will be at or within six (6) inches of grade, aluminum storefront frames will be anodized or painted black, and glazing will be clear rather than reflective, opaque or tinted.

Citation: 14.115.D.2. Guideline for All Uses. Building lighting should emphasize entrances.

Response: Building lighting shall be installed along exterior walls to cast light along entrances, for convenience of visitors, safety, and to satisfy 14.115.D.2. Reference Site Lighting Plan, pp. 35.

Citation: 14.115.D.3. Standards for Non-Industrial Uses.

a. Solid metal or wood doors with small or no windows are prohibited.

b. Doors with a minimum of 50% of the door area that is glass are required.

Response: All six doors mentioned above—main entry, north patio, fitness area, whirlpool area, south egress stair and west egress stair, and egress stair doors, all on the south elevation, shall be primarily glazed, within a black aluminum frame.

Citation: 14.115.D.4. Guidelines for Non-Industrial Uses

a. Doors should be recessed when feasible (Figures 14.115-8 and 14.115-9).

Response: All six doors in the previous response, and further discussed in the Response to 14.115.D, will be recessed. Doors that serve as more primary entries and exits, particularly the two assemblies at the Entry/Lobby area, will be both recessed from the wall plane and set below roof overhangs or canopies in order to accentuate them.

Citation: 14.115.D.4.b. Large cafe or restaurant doors that open the street to the interior by pivoting, sliding, or rolling up overhead are encouraged (Figure 14.115-8).

Response: The frontage along Second Street terminates at the river, and does not experience significant pedestrian traffic, so it was decided not to include large operable openings of this style at this time. However, every bay of glazing along this frontage includes an operable awning window light to allow sound and air to transfer between the interior and exterior. Operable lights are also present on the adjacent south and north frontages, as are pedestrian entries into the Entry/Lobby area.

Citation: 14.115.D.4.c. Well-detailed or ornate door hardware is encouraged (Figure 14.115-9). Contemporary hardware should be compatible with the design of the door.

Response: Door hardware will be selected for conformance with the historical, utilitarian aesthetic, but will be thoughtfully detailed and selected for compatibility with the overall working waterfront style.

Citation: 14.115.D.4.d. Transom, side lites, or other door/window combinations are encouraged (Figure 14.115-9).

Response: Five of the six exterior doors outlined above are placed within the larger glazed openings and integrated with sidelights and transoms within the composition of these openings. The sixth door, at the west stair, is composed to match the other glazed openings on this elevation, and to appear similar to the deck doors on the north elevation.

Citation: 14.115.D.4.e. Doors combined with special architectural detailing are encouraged.

Response: Reference previous responses in this section. The design carefully integrates doors into the industrial-style glazed assemblies, and otherwise places them at locations and in alignments that accentuate the cladding choices and trim detailing at the exterior.

Citation: 14.115.D.4.f. Double or multiple door entries are encouraged (Figure 14.115-9).

Response: The primary entry into the hotel, at the southeast vestibule, is an automatically controlled swinging double door.

Citation: 14.115.E. Windows. 1. Coverage Standards for All Uses. All building facades visible from a public right-of-way and/or the River Trail shall have windows or other openings in the facade. Blank walls on any facades visible from the right-of-way and/or River Trail for any type of use are prohibited.

Response: All elevations of the project, even the south elevation not visible from the River Trail, include glazed openings providing a visual link to the interior. At the ground floor enclosed parking area, open metal grates achieve the same aesthetic goal, providing a semi-transparent opening to break up the façade and to allow observers to perceive activity within the building from the River Trail.

Citation: 14.115.E.2. Design Standards for All Uses.

a. Window detailing. Windows shall have casings/trim, sills, and crown moldings. Window detailing shall meet the following requirements.

1) Casings/trim shall have minimum dimensions of 5/4 inch x 4 inch and shall extend beyond the facade siding.

2) Windows shall be recessed a minimum distance of two (2) inches from the trim surface to ensure a shadow line/effect.

3) The bottom of the sill shall be a minimum of 18 inches above the ground or floor elevation.

Response: Reference window details in Part 2, pp. 52 and 53. Windows have been detailed to provide all requirements listed above. Fiber cement trim boards are installed along all sides, minimum 5/4x4 inch nominal size. Crown moulding is provided in a configuration based on the most prevalent and appropriate working waterfront examples. It is a functional design, a simple compound trim section, without special milling, that includes a projecting water table on the top side. The crown moulding is contiguous with the floor line trim, which has the same projection. IT is also repeated at the window sill and the bottom of the PTHP grille. The recessed windows and deck doors are installed 3-1/2 inches in from the face of the wall. Window sills are consistently set at 30" above the finished floor, except for storefront glazing at the Lobby/Entry, which is at 32".

Citation: 14.115.E.2.b. The following types of windows or window treatments are prohibited:

- 1) Residential-styled window bays;
- 2) Half-round windows;
- 3) Tinted and/or reflective glass;
- 4) Sliding windows;
- 5) Vinyl windows; and
- 6) Blocked-out windows; and
- 7) Windows that extend beyond the plane of the building facade.

Response: All of the prohibited window types are observed in the proposed design. Glass will be clear, not tinted or reflective. Operable windows shall be casements, not sliders. Windows shall be constructed of aluminum-clad wood at guestrooms and aluminum at ground floor assemblies, never vinyl. And all windows shall be recessed within trim details as noted above.

Citation: 14.115.E.3. Design Guidelines for All Uses.

a. Windows, including transoms on existing buildings, should retain their original size and location as part of renovation activities.

Response: The building is entirely new construction and no window openings will be part of a renovation.

b. Windows that open by pivoting, casement, single hung, or other shuttering are encouraged.

Response: All operable windows in guestrooms shall be casement. Operable glazing in the Lobby/Entry, shall be a mix of awning and hopper units, distributed across the south, east and north elevations at a height to permit user operation.

c. Painted wood or stucco panels or tile clad panels below windows are encouraged.

Response: In lieu of a panel below windows, the typical window configuration places the packaged terminal heat pump (PTHP) unit below the window and covers the assembly with an oversized louver that masks the PTHP, the solid wall next to it and the header above it, and is in turn captured along with the window mull above by a continuous trim detail. This achieves the appearance of an accent panel that is integrated with the composed window assembly. Reference Part 2, pp. 52 and 53.

d. Clear glass is encouraged.

Response: All glazed openings will have clear glass.

e. True divided lites are encouraged. Simulated divided lites shall have exterior muntins to create exterior shadow lines.

Response: No true divided lites are included at guestrooms, but guestroom windows are outfitted with simulated divided lights with exterior muntins in order to appear identical to true divided lights, with a 3-3 composition, symmetrical, with two adjacent window lites. Aluminum glazing at common areas runs in typical 4-high, 3-wide pattern of true divided lights, with operable vents at locations indicated, and with the pattern modified as needed for fit in a few locations. Shadow lines are prevalent in all assemblies, between mullions, muntins, and recessed openings.

f. Boldly articulated window and storefront trim are encouraged.

Response: Reference Response to 14.115.E.2. Trim has been deliberately detailed to enhance and add depth to glazed openings.

Citation: 14.115.E.4. Coverage Standards for Non-Industrial Uses

a. In the Pedestrian-Oriented District. In the Pedestrian-Oriented District (Figure 14-090.2) and adjacent to the River Trail, at least 50% of the ground-floor street-facing facades of non-industrial uses shall be covered by windows and at least 30% of the upper-floor street-facing facades should be covered by windows.

b. Outside Pedestrian-Oriented District. Outside the Pedestrian-Oriented District, at least 40% of the groundfloor street-facing facades of non-industrial uses shall be covered by windows and at least 30% of the upper-floor street-facing facades should be covered by windows.

Response: The project is outside the Pedestrian-Oriented District. The only building street frontage is the single-story east elevation. Glazed area on this elevation is to be over 50% of the defined ground floor wall area in any case.

The upper floors of the east elevation are 61 horizontal feet from Second Street and are not considered to be regulated by this section. The glazing provided at the project is intended to focus primarily on the River Trail to the north, and secondarily to Marine Drive from the south elevation.

Citation: 14.115.F. Siding and Wall Treatment. 1. Standards for All Uses. The following types of siding and wall materials and treatments are prohibited:

- a. Cladding materials such as corrugated metal panels or spandrel glass;
- b. Panels that are poorly detailed or do not have detailing;
- c. Neon or other fluorescent colors;
- d. Bright or primary wall colors for the entire wall surface;
- e. Flagstone, simulated river rock, or other similar veneer cladding;
- f. Painted brick; and
- g. Non-durable materials such as synthetic stucco or shingles at the ground floor.

Response:

None of the listed materials have been used as part of the new design.

Board-and-batten siding is scheduled at the ground floor of the Entry/Lobby area. Due in part to durability concerns, this siding is to be a high-strength composition product.

Citation: 14.115.F.2. Guidelines for All Uses.

a. Variations in wall cladding materials and patterns consistent with historic patterns are encouraged.

- b. Natural or subdued building colors are encouraged.
- c. Bright colors may be used for accent trim in limited amounts.

d. Durable materials such as brick, stucco, granite, pre-cast concrete, board and batten, or horizontal wood siding should be used. These materials include galvanized corrugated metal on buildings for industrial uses.

e. Architectural wall features such as belt courses, pilasters, and medallions are encouraged.

Response: The board and batten siding used at the Entry-Lobby form and circulation tower uses a 2-1/2" batten at a 12" spacing, as observed in precedent waterfront buildings detailed in Part 2. The v-groove siding has reveals spaced at 7", a similar scale to the Hanthorn Cannery and other horizontal siding precedents. The colors of the siding, respectively, are red and gray. Red matches the typical color of Union Fishermen's Cooperative buildings along the riverfront, and the gray siding evokes the aged appearance of historical white paint believed to be the predominant color among waterfront industrial cladding in the late 19th century.

Trim, window and storefront frames, louvers, door frames and metal roofing are all a matching black color, to accentuate visual contrast at openings and transitions without oversaturating the building. Floor line trim and clad columns and pilasters at the ground floor Entry-Lobby area

introduce addition ornament while remaining in keeping with the streamlined functional detailing of the historic context.

Citation: 14.115.G. Awnings.

1. Standards for Types of Awnings and Treatments. The following types of awnings and awning treatments are prohibited:

- a. Fixed "bubble shaped" awnings); and
- b. Awnings lit internally.
- c. Awnings improperly sized for the building/entry/window.

2. Guidelines for Types of Awnings and Treatments. The following types of awnings and awning treatments are discouraged:

a. Vinyl or other non-compatible material awnings; and

3. Standards for Awning locations Along River Trail and North/South Rights-of-Way. Awnings are generally discouraged and shall not project into the setback area.

Response: There is a large awning or canopy extending from the south wall of the Entry/Lobby area, framed with timber and roofed with the same standing seam panels as the pitched roof at the body. There is also a narrow awning 2 feet in depth along the first floor line at the north side of the building, to provide some protection for pedestrians while meeting fire code requirements. It is similarly constructed with standing seam metal, framed off of the concrete slab with a closed soffit below. Neither awning represents any of the prohibited or discouraged conditions above.

Citation: 14.115.H. Lighting.

1. Standards for Lighting Types and Treatments for All Uses. The following lighting types or treatments are prohibited:

- a. Neon silhouette accent lighting;
- b. Fluorescent tube lighting;
- c. Security spotlight;

d. Signs lit by lights containing exposed electrical conduit, junction boxes, or other electrical infrastructure; and

e. Up-lighting that shines into the sky or light that shines into other properties or traffic.

Response: Lighting selected for the proposed project conforms to all requirements listed above. All lights are full cutoff and are designed to limit light pollution and either conform to historic aesthetics or subtly recede into the building façade. Reference Site Lighting Plan, pp. 35.

Citation: 14.115.H.2. Standards Regarding Glare for All Uses. Outdoor lighting shall be designed and placed so as not to cast glare into adjacent properties. Light fixtures should be designed to direct light downward and minimize the amount of light directed upward, including lighting from wallwashing fixtures. The Community Development Director may require the shielding or removal of such lighting where it is

determined that the lighting is adversely affecting adjacent properties or directing significant light into the night sky.

Response: Site lighting for the proposed project shall conform to these requirements and avoid light pollution.

Citation: 14.115.H.3. Guidelines Regarding Wall-Washing Light. Wall-washing lighting fixtures should be concealed and integrated into the design of buildings or landscape walls and stairways.

Response: Lighting for the proposed project shall conform to these requirements. Sconces and step lights are included in the Lighting Plan and Appendix data; they have been selected to minimum their appearance and take a subtle, unobtrusive appearance.

Citation: 14.115.I. Signs. Signs in the Bridge Vista Overlay Zone are subject to the requirements in Article 8 (Sign Regulations) of the Astoria Development Code. The following additional standards apply to signs in the Pedestrian-Oriented District. In the event of a conflict between this Section and other Sections of the Astoria Development Code, this Section shall control.

- 1. Monument signs are allowed up to a maximum of 32 square feet.
- 2. Monument signs shall be a maximum of five (5) feet tall.

3. Monument signs shall be constructed from materials that are consistent with the historic character of the area, including wood, brick, stone, and metal.

4. Freestanding pole-mounted signs are prohibited.

Response: The monument sign at the southwest corner of the site is 30 square feet in size, and 5 (five) feet in height. Reference Part 2, pp. 62. The sign is on a cast concrete base, with the same v-groove as the building exterior, to remain consistent with the associated architecture and the historic character. No free-standing pole-mounted signs are included in the scope, and the existing pole sign is scheduled to be removed.

Citation: 14.120. LANDSCAPING. Landscaping is required in the Bridge Vista Overlay Zone in accordance with the provisions in this Section and those in Section 3.120 to 3.125. The provisions in this Section apply to new construction or exterior renovations with a value of at least 20% of the assessed value of the structure, or in the event of installation of new parking areas.

Response: The provision in the section apply to the proposed project. See following Responses to individual sections. Note that the landscaped area around Stephanie's Cabin is omitted from the Responses, as this is not yet fully designed. But if this subsequent project is of greater value than 20% of the assessed value of the structure, it will conform to all Landscaping standards for the BVO.

Citation: 14.120.B. Land Side or Upland Standards. The following standards apply to landscaping along the frontage of parcels abutting the River Trail to the south.

- 1. Height and Spacing.
- a. Maximum spacing of trees.
- (1) 20 feet on center for non-industrial uses
- (2) 15 feet on center for industrial uses
- b. Maximum spacing of shrubs
- (1) Five (5) feet on center for non-industrial uses
- (2) Three (3) feet on center for industrisal uses
- c. Ground cover landscaping is required in between shrubs and trees.
- d. Trees shall not exceed 35 feet in height at maturity



Response: Landscaping shall conform to all listed standards for the Bridge Vista Overlay Zone. Reference Planting Plan, Part 2, pp. 28.

Citation: 14.120.B.2. Parking Area Landscaping.

a. Landscaping required between parking areas, streets, and sidewalks in accordance with Section 3.120.A.7 shall also be required between parking areas and the River Trail.

Response: The proposed project shall meet all requirements for the areas listed above in compliance with Section 3.120.A.7, and shall meet the same requirements for the north edge of the northwest parking lot facing the River Trail. Reference Planting Plan, Part 2, pp. 28.

Citation: 14.120.B.2.b. Landscaping shall minimize pedestrian exposure to parking lots with a hedge or a decorative fence that is 36" to 42" high.

Response: See response above. The north side of the northwest parking lot shall be screened from the River Trail with a planted screen located and sized under the parameters above.

The south side of the northwest parking lot abuts a landscape strip, with a drive, not a pedestrian walkway on the opposite side. Shrubs shall be placed along this strip to meet other code requirements and provide an attractive partial screen for parking, but a continuous hedge is not understood to be required at this location.

The southernmost parking spot in the line of parallel parking at the west edge of the site could have some visual exposure to pedestrians on the Marine Drive sidewalk, but this space will be visually screened with a monument sign meeting the minimum height requirements of the fence above. Plantings are placed alongside the monument sign as needed to complete the screening of this space. Reference Planting Plan, Part 2, pp. 28.

Citation: 14.120.B.2.c. Maximum tree height and width in parking areas shall be 15 feet at maturity.

Response: The proposed project shall conform to these standards for maximum tree height. Where applicable this more restrictive standard shall govern over 14.120.B.1.d above. Reference Planting Plan, Part 2, pp. 28.

Citation: 14.120.B.3. Landscaping Credits for Non-Vegetation Features.

a. The Community Development Director may approve non-vegetative features to account for up to 25% of required landscaping when the features consist of the following:

(1) Hardscaped pedestrian-oriented areas (e.g., courtyards, plazas); and/or

(2) At least one of the following amenities meeting the City approved design within the public right-of-way and/or River Trail right-of-way:

- (a) bike rack
- (b) bench

(c) table

- (d) drinking fountain
- (e) directional or interpretive/information signage
- (f) trash or recycling container
- (g) lighting
- (h) restroom

Permeable paving and other stormwater management techniques are encouraged in the design of these areas.

Response: Calculations for landscape areas presented elsewhere in this document include only vegetated landscape area. No hardscape is claimed, or needed to meet landscape area requirements for any section of the Code.

Citation: 14.120.B.3.b. An application proposing more than 25% of required landscaping be credited by non-vegetative features is subject to approval in accordance with procedures in Article 9 and Article 12.

Response: See previous response.

Citation: 14.120.B.3.c. Non-vegetative features allowed in the public right-of-way and/or on the River Trail in lieu of required landscaping shall be maintained by the applicant. There shall be a maintenance agreement or other City approved agreement. Failure to maintain or loss of the non-vegetative feature will result in the requirement for installation of the landscaping in accordance with the Code at the time of the loss.

Response: The proposed project does not include any new features on the River Trail or in the right-of-way, aside from improvements at drive entries and to rights-of-way as required by and coordinated with the City, and the potential addition of concrete pad and an informational plaque on the River Trail. None of these are intended to meet this exception or to be applied in lieu of site landscaping. If the City requires a maintenance agreement or other measure, project ownership and operations will abide by the terms of such an agreement.

Citation: 14.120.C. Street Trees. Street trees shall be planted within the right-of-way along both sides of the street in the Bridge Vista Overlay Zone in accordance with the provisions in this Section.

- 1. Spacing should be 30 feet on center, depending on species and branching habit.
- 2. Minimum size of deciduous trees should be 2" caliper, with an upright form.
- 3. Mature branching height should be a minimum of 15 feet.

4. Maximum height for street trees along north-south streets between West Marine Drive / Marine Drive and the Columbia River is 45 feet.

5. Street trees along north-south streets between West Marine Drive / Marine Drive and the Columbia River shall have narrow profiles and/or be pruned to a maximum width of 15 feet.

6. Street trees along north-south streets between West Marine Drive / Marine Drive and the Columbia River shall be one of the columnar species listed in Section 3.125.B.1, unless otherwise approved by the Community Development Director.

7. Durable tree grates and trunk protectors should be installed.

8. Areas between trees should be landscaped with a variety of shrubs and perennials, with an emphasis on flowering species.

9. Required street trees shall be maintained by the adjacent property owner and/or other identified entity. There shall be a maintenance agreement or other City approved agreement.

Response: The previous iteration of the design did not allow sufficient clearance for street trees due to the location of the vision clearance triangle and the existing Ship Inn to be preserved. The Ship Inn is no longer part of the updated design, but the project team feels that the position of the clearance triangle and the intent of the view corridor make it inappropriate to plant street trees at this location, where the street terminates into the river.

Previous commentary by the City in the Findings report appears to agree the vision clearance corners preclude planting of street trees along this frontage. The project team is willing to schedule trees at this location if preferred by the City.

Citation: 14.125. OFF-STREET PARKING. In the Pedestrian-Oriented District in the Bridge Vista Overlay Zone, the following provisions apply to parking requirements established in Article 7 of this Code.

A. Reductions. Minimum parking space requirements in Section 7.100 may be reduced by 50% for uses with less than 5,000 square feet of gross floor area.

Response: The proposed use is significantly greater than 5,000 square feet gross area, and this reduction does not apply. A future Stephanie's Cabin renovation would be less than 5,000 square feet, but as this site in not in a Pedestrian Oriented District, this Reduction still does not apply.

Citation: 14.125.B. Exemptions. Exemptions from minimum parking space requirements in Section 7.100 are permitted under the following conditions: 1. Existing buildings that cover the maximum area of the site allowable 2. Building expansions of 10% or less.

Response: The proposed project is a new construction project. This exemption does not apply.





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project site - 2nd street & marine drive

APPENDICES

 Appendix A: Historical Site Information Appendix B: Geotechnical Report Appendix C: Site Survey

- Appendix D: Astoria City Code 6.100 Vision Clearance Area
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- Appendix F: Product Data

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property line



proposed building

existing building-future renovation

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LOCATION AND PROJECT SITE





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WORKING WATERFRONT CONTEXT - Sanborn Map



Van Camp Seafood - view from northwest

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WORKING WATERFRONT CONTEXT - Photos



Union Fisherman's Cooperative - 1891





Union Fisherman's Coop, 31st St.

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Salmon cannery at Astoria, Oregon. (Sect. v, vol. i, p. 745.)

Unidentified Salmon Cannery

WORKING WATERFRONT CONTEXT - Images



A - Astoria Firehouse No. 2 -2968 Marine Drive



B - Bonded Warehouse - 1 4th Street



C - Callendar Navigation Company - 175 14th Street



E - Fisher Brothers Building - 1210 Marine Drive



F - Hanthorn Cannery - 100 39th Street



G - Ludwig Larsen House - 3025 Marine Drive



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D - Union Fishermen's Cooperative - 49th and Columbia River



H - Union Fisherman's Cooperative - 100 31st Street

HISTORIC CONTEXT - Working Waterfront



A - Norblad Hotel - 443 14th Street



B - Karhuvaara Boarding House - 286 W Marine Drive



C - Svenson Blacksmith - 1796 Exchange Street



D - Uniontown-Alameda Historic District



E - Uniontown-Alameda Historic District



F - Uniontown-Alameda Historic District



G - Uniontown-Alameda Historic District



H - Uniontown-Alameda Historic District



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I - Hotel Eliot - 375 12th Street

HISTORIC CONTEXT - Landmarks and Historic Districts



A - Union Waterfront Industrial -1230 Marine Drive B - Vintage Hardware - 1162 Marine Drive





C - Pier 12 - 151 12th Street



E - Columbia House Condos - 1 3rd Street



F - Pier 11 - 77 11th Street



G - Astoria Warehousing - 12 Marine Drive



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D - Buoy Beer Company - 1 8th street



H - Cannery Pier Hotel - 10 Basin Street

CURRENT CONTEXT - Contemporary Waterfront



A - Bonded Warehouse - 1 4th Street



B - Columbia House Condominiums - 1 3rd Street



C - Subway / Beach Burrito - 11 W Marine Drive



E - Rivershore Motel - 75 W Marine Drive



F - Dots N Doodles Art Supplies - 303 Marine Drive



G - Residential - 9 W Marine Drive



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D - Sewage Lift Station - 175 E Columbia River Hwy



H - Hi Casual Cannabis Dispensary - 193 Marine Drive

CURRENT CONTEXT - Nearby Structures



A - View northeast towards Stephanie's Cabin



B - View northwest from Marine Drive towards existing Josephson's smokehouse





D - View south towards Stephanie's Cabin



E - View southwest towards existing Josephson's smokehouse



F - View northwest on Marine Drive towards site



G - View southwest towards existing Ship Inn



H - View of existing White Star boiler and Astoria-Megler Bridge



I - View of existing White Star boiler

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Key Plan: N.T.S.

J - View east on riverwalk toward 2nd Street

SITE CONTEXT

BUILDING FORM

Notable Features:

- Simple geometric forms •
- Flat exterior wall plane •
- Stepped smaller forms • aggregated onto larger form at entries, ancillary spaces, etc.
- Smaller projecting roofs and • circulation elements at exterior spaces
- Mix of medium-sized and large masses, very large historical precedents
- Pitched roofs most common; also • examples of flat roofs



Union Fishermen's Cooperative 31st Street and Columbia River



Karhuvaara Boarding House 286 W Marine Drive







Van Camp (White Star) North of site, historical and existing



Columbia House Condominiums 1 3rd Street



Union Fishermen's Cooperative East of site, historical and no longer existing, landside portion of complex









Fire House No. 2 2968 Marine Drive





RESEARCH & PRECEDENT - Building Form

BUILDING OPENINGS

Notable Features:

- Punched openings ٠
- Regular, symmetrical arrangement • along long walls and primary elevations
- Varying rythms of placement at ٠ end elevations and unique interior conditions
- Located for utility •
- ٠ Moderately generous opening dimensions for lighting interiors
- Located for utility ٠
- Larger opening at ground floor, • especially public and entry conditions



Callendar Navigation Company 175 14th Street



Hotel Elliott 375 12th Street



Hanthorn Cannery 100 39th Street

Union Fishermen's Cooperative 49th and Columbia River

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Warren Investment Company Housing Group 647-690 11th Street



RESEARCH & PRECEDENT - Openings

WINDOW ARTICULATION AND TRIM

Notable Features:

- Mulled openings with grouped lites ٠
- Simple geometry; composed ٠ rectangles
- Water tables and apron trim at sills •
- Simple compound head trim, wider • than jamb trim
- Trim solid color matching windows or • cladding, not both
- Muntins creating various sizes of window lites





Rev. William S. Gilbert Charles Stevens House - 725 11th St.

Union Fishermen's Cooperative 49th and Columbia River





Callendar Navigation Company House - 1388 Franklin 175 14th Street

STOREFRONT GLAZING AND ENTRIES

Notable Features:

- Mix of frame materials (aluminum, • steel and wood)
- Smaller divided lites in industrial • examples especially
- Operable lites included in industrial ٠ examples especially
- Sills raised above floor level ٠
- Simple frame profiles, not very ornate •
- Glazing focused at entries and ٠ public ground floor frontages



Douglas Hotel 143 9th Street



Fire House No. 2 2968 Marine Drive



Norblad Hotel 2 443 14th Street



CARLETON HART ARCHITECTURE





Hanthorn Cannery 100 39th Street





Callendar Navigation Company 175 14th Street

RESEARCH & PRECEDENT - Windows / Storefront

CLADDING MATERIALS

Notable Features:

- Red, white and gray body color, painted in almost all cases
- Window trim and/or windows in contrasting color
- Board and batten siding common, often red in Union Fishermen's Coop buildings
- Horizontal v-groove and lap siding common
- Reveals between 6 and 12 inches



Union Fishermen's Cooperative 31st Street and Columbia River



Callendar Navigation Company 175 14th Street



Hanthorn Cannery 100 39th Street

Peter & Maria Larsen House 647 31st Street

Callendar Navigation Company 175 14th Street

Resid

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Union Fishermen's Cooperative 49th and Columbia River



Residential near site 184 Bond Street

RESEARCH & PRECEDENT - Cladding
EXTERIOR FINISH

Notable Features:

- Exposed concrete
- Horizontal articulation from board formwork



Fisher Brothers Company 1210 Marine Drive -parge coat over concrete



Contemporary waterfront industrial 1230 Marine Drive



Contemporary waterfront industrial 1162 Marine Drive

BAND TRIM

Notable Features:

- Aligned with floor lines or window heads
- Shadows and/or contrasting colors to break up mass of building
- Continous horizontal profile



Hotel Elliott 375 12th Street



State Hotel 1167 Marine Drive

Warren Investment Company Housing Group 647-690 11th Street



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State Hotel 1167 Marine Drive



RESEARCH & PRECEDENT - Exterior Finish / Band Trim

BUILDING EAVES

Notable Features:

- Continue slope of pitched roof ٠ beyond wall
- Eave projections between 8 and 24 ٠ inches
- Exposed rafter tails ٠
- Painted soffits matching building ٠ colors
- Fascia and gutters at eave edge •





Karhuvaara Boarding House 286 West Marine Drive

Callendar Navigation

Company 175 14th Street



Callendar Navigation Company 175 14th Street

EXTERIOR LIGHTING

Notable Features:

- Downward directed light ٠
- Shade with goosneck or standoff •
- Black, bronze or raw metal finish ٠



Fisher Brothers Company 1210 Marine Drive



Callendar Navigation Company 175 14th Street



Union Fishermen's Cooperative 39th and Columbia River









Hanthorn Cannery 100 39th Street



Callendar Navigation Company 175 14th Street

RESEARCH & PRECEDENT - Eaves / Lighting

EXTERIOR OPEN STAIR

Notable Features:

- Exposed and uncovered
- Steel construction
- Simple column support
- Utilitarian rail design, vertical or horizontal pickets

(examples are contemporary - code requirement egress stair not a historic type)





John Jacob Astor Hotel 1401 Commercial Street





Red Building 20 Basin Street

DECKS AND RAILINGS

Notable Features:

- Exposed and uncovered
- Rail design to maximize views

(examples are contemporary - decks are a function of use and code requirement not a historic type



Illahee Apartments 10th and Grand



Mill Pond Apartments 23rd and Marine Dr.

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Fisher Brothers Company 1210 Marine Drive deck access, not egress stair



RESEARCH & PRECEDENT - Stair / Deck / Railings



A - North elevation between 6th & 4th



B - South elevation between 6th & 4th



Aerial map of Marine Drive



CARLETON HART ARCHITECTURE ASTORIA FAIRFIELD DESIGN REVIEW REVISION



STREET ELEVATIONS - Marine Drive





A - North elevation between 4th & 2nd



B - South elevation between 4th & 2nd



Aerial map of Marine Drive



CARLETON HART ARCHITECTURE ASTORIA FAIRFIELD DESIGN REVIEW REVISION



STREET ELEVATIONS - Marine Drive





A - North elevation between 2nd & Pier



B - South elevation between 2nd & Pier



Aerial map of Marine Drive







STREET ELEVATIONS - Marine Drive





A - North elevation between Pier and Flavel



B - South elevation between Pier and Flavel



Aerial map of Marine Drive



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STREET ELEVATIONS - Marine Drive





A - East elevation between Columbia River and Marine Drive



B - West elevation between Columbia River and Marine Drive



Aerial map of 2nd Street

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STREET ELEVATIONS - 2nd Street





A - East elevation between Columbia River and Marine Drive





Aerial map of 2nd Street

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STREET ELEVATIONS - 2nd Street





view of proposed project massing - looking east from Marine Drive



view of proposed project massing - looking northwest from Second Street, south of Marine Drive





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PROPOSED BUILDING IN CONTEXT





view of proposed project massing from Bond Street, south of project site

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ASTORIA FAIRFIELD DESIGN REVIEW REVISION view of proposed project massing from River Trail, west of project site

PROPOSED BUILDING IN CONTEXT





FOURTH FLOOR



THIRD FLOOR



SECOND FLOOR



FIRST FLOOR SECOND FLOOR THIRD FLOOR

FLOOR

FOURTH FLOOR

TOTAL FLOOR AREA

FLOOR AREA ALLOWED

GUEST ROOM TYPE	AREA	QTY
KING	283 SF	55
DOUBLE QUEEN	335 SF	7
ACCESIBLE KING	335 SF	2
ACCESIBLE DOUBLE QUEEN	425 SF	2

FIRST FLOOR

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	AREA			
	5,399 SF			
	8,437 SF			
	7,889 SF			
	7,889 SF			
	29,614 SF			
)	30,000 SF			

FLOOR AREA & ROOM TYPES









PLANTING PLAN AND SCHEDULE





PLANTING PLAN AND SCHEDULE



28-B

PLACEMENT
AS SHOWN
18" O.C. TRIANGULAR SPACING
18" O.C. TRIANGULAR SPACING



BOSNIAN PINE 12' TALL X 5' WIDE



PLANTING PALETTE



EMERALD GREEN CEDAR 15' TALL X 4' WIDE



SHINDESHOJO JAPANESE MAPLE 8' TALL X 6' WIDE



CAPISTRANO RHODODENDRON 4' TALL X 4' WIDE

SHRUBS:



DWARF MOUNTAIN LAUREL 3' TALL X 3' WIDE



GROUNDCOVERS:

VARIEGATED CARAMEL CREEPER 1' TALL X 4' WID





STREIBS FINDLING COTONEASTER 0.5' TALL X 6' WIDE



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ASTORIA FAIRFIELD DESIGN REVIEW REVISION



SLENDER HINOKI CYPRESS 15' TALL X 6' WIDE



ROSA MUNDI RHODODENDRON 4' TALL X 4' WIDE

LANDSCAPE PALLETTE





GRADING PLAN

COLUMBIA RIVER





ASTORIA FAIRFIELD DESIGN REVIEW REVISION UTILITY PLAN



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CARLETON HART ARCHITECTURE

ASTORIA FAIRFIELD DESIGN REVIEW REVISION

PARKING DETAILS





BICYCLE PARKING DETAILS







FLOOR	AREA
FIRST FLOOR	5,399 SF









GUEST ROOM TYPE	QTY	FLOOR	AREA
KING	22	THIRD FLOOR	7,889 SF



COMMON SPACE

KING GUESTROOM



THIRD FLOOR PLAN







GUEST ROOM TYPE	QTY	FLOOR	AREA
KING	22	FOURTH FLOOR	7,889 SF



COMMON SPACE

KING GUESTROOM



FOURTH FLOOR PLAN









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BUILDING SECTIONS

GENERAL NOTES	KEYNOTES NOTES	
A. DIMENSIONS ARE TO GRIDLINE, FACE OF STUD, UNLESS OTHERWISE NOTED.	400 V-GROOVE SIDING.	411 METAL GRATE - POWDER COATED.
B. REFER TO ENLARGED ELEVATIONS AND WALL SECTIONS FOR	401 BOARD & BATTEN SIDING.	412 PACKAGED TERMINAL HEAT PUMP WITH ARCHITECTURAL GRILLE.
ADDITIONAL INFORMATION.	402 HORIZONTAL BOARD FORM CONCRETE WALL.	413 FIBER CEMENT TRIM.
	404 STANDING SEAM METAL ROOFING.	415 STEEL FRAMING.
	406 ALUMINUM STOREFRONT DOOR & GLAZING MULL.	421 PREFABRICATED STEEL STAIR - POWDER COAT.
	407 ALUMINUM STOREFRONT GLAZING MULL.	423 DOWNSPOUT.
	409 FIBERGLASS WINDOW, TYP.	424 GUTTER.
	410 FIBERGLASS SWINGING PATIO DOOR, TYP.	



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NORTH ELEVATION



GENERAL NO	ITES	KEYNOTES NOTES	
A. DIMENSIONS OTHERWISE	ARE TO GRIDLINE, FACE OF STUD, UNLESS NOTED.	400 V-GROOVE SIDING.	413 FIBER CEMENT TRIM.
B. REFER TO EN	N ARGED FLEVATIONS AND WALL SECTIONS FOR	401 BOARD & BATTEN SIDING.	415 STEEL FRAMING.
ADDITIONAL	INFORMATION.	402 HORIZONTAL BOARD FORM CONCRETE WALL.	420 WALL MOUNTED BUILDING SIGNAGE.
		404 STANDING SEAM METAL ROOFING.	421 PREFABRICATED STEEL STAIR - POWDER COAT.
		406 ALUMINUM STOREFRONT DOOR & GLAZING MULL.	423 DOWNSPOUT.
		407 ALUMINUM STOREFRONT GLAZING MULL.	424 GUTTER.
		409 FIBERGLASS WINDOW, TYP.	
		411 METAL GRATE - POWDER COATED.	



1) SOUTH ELEVATION

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SOUTH ELEVATION





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EAST AND WEST ELEVATIONS





NORTHEAST PERSPECTIVE





SOUTHWEST PERSPECTIVE





NORTHWEST PERSPECTIVE





SOUTHEAST PERSPECTIVE









aluminum clad wood casement window



PTHP architectural grille



cementitious deck coating



decorative metal grate



horizontal board-formed concrete

MATERIALS ELEVATION




cementitious deck coating

v-groove siding



standing seam metal roofing



horizontal board-formed concrete

board and batten siding

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Cedar texture

MATERIALS PALETTE



outdoor plaza bench



aluminum clad wood window



simulated divided window lites



patio hardware (to be satin chrome finish)



metal grate pattern



PTHP architectural grille

2⁵/8" 3¹/2"

2⁵/8"



entry hardware (to be pewter finish)

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aluminum glazing assembly

MATERIALS PALETTE









typical window assembly

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window head condition

DETAILS - Windows





HOSPITALITY





window sill and pthp condition

DETAILS - Windows



LITE BELOW



THERMALLY BROKEN BEVEL PROFILE

STRIP

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⊢



DETAILS - Storefront Glazing



1 STOREFRONT ASSEMBLY PLAN SCALE: 1"=1'-0"



glazing head condition





view of east elevation glazing assembly - planter and bike racks omitted for clarity DETAILS - Storefront Glazing

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glazing sill condition



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HOLLANDER

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DETAILS - Roof





view of awning from above



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DETAILS - South Awning







view of exterior west stair

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DETAILS - Exterior Stair and Grate



DESIGN REVIEW REVISION

(王) HOLLANDER ARCHITECTURE HOSPITALITY



day



sign precedent from similar project

SIGNAGE TO BE -INDIVIDUAL FABRICATED BACKLIT LETTERS - BLACK DURING DAY AND BACKLIT WHITE AT NIGHT - 6" DEPTH - SEE PRECEDENT IMAGES



1 WALL SIGN - SOUTH ELEVATION SCALE: 1/4"=1'-0"

night

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SIGNAGE - Wall Signs



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SIGNAGE - Monument



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Perspective



4 - South Elevation

TRASH ENCLOSURE

TRASH ENCLO



3 - North Elevation



2-South Elevation



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TRANSFORMER ENCLOSURE

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Keynote	Unit	Area/Use Served	Approximate Size	Curb Height
1	5-ton HVAC RTU	Dining Area	4' W x 6' L x 4' H	1' - 8"
2	2-ton HVAC RTU	Kitchen	3' W x 5' L x 4' H	1' - 8"
3	2.5-ton HVAC RTU	Fitness/Service Areas	3' - 6" W x 5' L x 4' H	1' - 8"
4	4-ton HVAC RTU	Guestroom Corridors	4' W x 6' L x 4' H	1' - 8"



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ASTORIA FAIRFIELD DESIGN REVIEW REVISION **RTU SCREENING**

LEGEND						
	PROPERTY LINE					
	HOTEL LANDSCAPED (VEG) AREA PER PARCEL	PARKING AREA 1	ASPHALT PAVING			
	STEPHANIE'S CABIN LANDSCAPED AREA PER PARCEL	PARKING AREA 2				



1 SITE DIAGRAM - PLANTING AREA SCALE: 1/16" = 1'-0" MARINE DRIVE

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SITE DIAGRAM - LANDSCAPED OPEN AREA







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PACKAGED TERMINAL HEAT PUMP SLEEVE

PREFINISHED ALUMINUM ARCHITECTURAL GRILLE AND FRAME 18 GA. HDG Z-GIRT - 7/8"

1/2" DYNAMIC SEALANT JOINT 5/4 X 4" NOM. FIBER CEMENT TRIM -



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APPENDIX A: HISTORICAL SITE INFORMATION



HISTORICAL SITE INFORMATION

SECOND AVENUE AND MARINE DRIVE RIVERFRONT AREA

Photo: Second Avenue and Marine Drive, exact date unknown



Astoria's Traditional Industrial Waterfront Buildings

Constructed on the north side of the railroad tracks, these buildings were built specifically for waterfront use and functioned as net drying, cold storage, boat storage, fish canneries or machine shops. Their essential siting, form, construction techniques and materials changed little during Astoria's initial 60-year period of industrial waterfront development.

The buildings were vernacular, or low-style, rather than referencing any particular architectural style. The buildings were always grouped by function, unattached, and connected by adjoining piers. Most buildings stood perpendicular to the railroad and shoreline, but there were exceptions. A handful of historic waterfront buildings were constructed parallel to the river because it was more efficient to load or unload their contents to/from ships and/or trains.

All waterfront buildings stood on wood pilings driven into the river bank. The pilings were set on a 10' x 10' grid. Many of these piling fields remain today and give a sense of the massive scale of the over-the-water building clusters.

ASTORIA FAIRFIELD INN AND SUITES DESIGN REVIEW – PART 1 – NARRATIVE

All complexes had a primary structure. It usually had a large central volume with smaller forms stepping down from it. Over time, the structures would expand or contract according to their function. Roofs were generally low-pitched gable or hip roofs with shallow eaves. Monitor roofs were sometimes constructed over the main ridge to allow additional light and ventilation into the buildings. Roofs were clad in wood shingle, corrugated iron or rolled paper. Exterior walls were wrapped in horizontal wood drop siding or vertical board and batten. Corrugated iron was sometimes applied over old, weathered, wood siding. The typically long, flat facades, were punctuated with evenly-spaced, repetitive, wood framed double-hung windows. Eventually, multi-light, pivoting windows were introduced to the buildings.



Photo: Van Camp Seafood Building

Photo: Bonded Warehouse



Photo: Ships Inn











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APPENDIX B: SITE GEOTECHNICAL REPORT



GEOTECHNICAL ENGINEERING INVESTIGATION

Proposed Hotel Building Ship Inn Site Astoria, Oregon



Prepared For: Hollander Investments 119 N Commercial St, # 165 Bellingham, WA 98225

October 2, 2017 Project No. YF0228814

10129	Main	Street,	#201
Bellevu	e, Wash	ington	98004
Tel:		(425)45	54-2133
Cell:		(360)22	4-4888
e-mail:	merit@Me	ritEngineer	ring.com
http:/	/ www.Mer	itEngineer	ing.com



http://www.MeritEngineering.com

October 2, 2017 Project No. YF0228814

Sam Mullen Hollander Investments 119 N Commercial St, #165 Bellingham, WA 98225 sam@hollanderhospitality.com



Re: Proposed Hotel Building Ship Inn Site Astoria, Oregon

Dear Sam:

At your request, we have conducted a geotechnical engineering investigation at the above referenced site. The following geotechnical engineering report represents the results of our visual site reconnaissance, test hole observations, engineering analysis, and derived conclusions on the foundation support of proposed buildings.

Thank you for this opportunity to work with you on this project. Please contact us if you have any questions about this report.

Sincerely,

Austin X. Huang, Ph.D., P.E., L.G., D.GE., F.ASCE Principal

F.ASCE: Fellow - American Society of Civil Engineering D.GE - Diplomate - Academy of GeoProfessionals

D.GEs provide successful projects that benefit their clients. The D.GE certification recognizes geotechnical engineers who possess specialty education, extensive experience, integrity, and good judgment.



Merit Engineering Inc.

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1. INTRODUCTION

Hollander Investment, Inc. of Bellingham, Washington, requested that Merit Engineering, Inc. to conduct a geotechnical engineering study for the proposed new hotel at 180 Marine Dr. in Astoria, Oregon (referred as Ship Inn Site).

The property site is bound by Marine Drive and Columbia River shoreline at south and north, and bordered to east by 2nd street, and west by a boardwalk accessing to Astoria Riverwalk. The project area currently is covered by asphalt with two closed restaurants at southwest corner and northeast corner. The property area and vicinity is shown in Figure 1.

We understand that the proposed site development consists of construction of a five stories wood frame light weight structure (location shown in Figure 2). The site is water front along the shoreline of Columbia River, which falls in Geologically Hazardous Area concern for seismic according to the City of Astoria Critical Areas Ordinance (CAO).

Therefore, the objective of this study was to investigate surface, subsurface soil and ground water conditions at the proposed building location, conduct an engineering analysis with particular concern of seismic hazard, derive conclusions, and provide preliminary engineering recommendations for the design of foundations to support the proposed structure.

2. SCOPE

The scope of work for this study is in compliance with our proposal No. PYF0616608 dated June 28, 2017, in particular includes:

- Conducting visual site reconnaissance;
- Review available documents done on the site;
- Conduct six (6) test borings to a maximum depth of 65.0';
- Observe four (4) test pits to a maximum depth of 10';
- Log soil and groundwater conditions;
- Perform engineering analysis;

- Prepare a geotechnical engineering report addressing:
 - (1) surface conditions,
 - (2) subsurface soil conditions,
 - (3) groundwater conditions,
 - (4) seismic impact and potential for liquefaction, and

Recommendations for:

- (5) site preparations and grading,
- (6) foundation design parameters,
- (7) structural fill and compaction criteria,
- (8) seismic design parameters,
- (9) drainage and erosion control, and
- (10) pavement design parameters.

3. SITE INVESTIGATION

3.1 Surface Conditions

The proposed project site consists of asphalt surface parking lot with two closed restaurants at the northwest corner of Marine Drive and 2nd street in Astoria, Oregon. The site is on the south side of the Columbia River shoreline, alone the Astoria Riverwalk. The entire site is proposed for the hotel building and associated parking and driveway.

The southwest corner of the site is a one story closed restaurant building with a surrounding asphalt drive and parking. Northeast conner of the site is another one-story closed restaurant with surrounding asphalt drive and parking area. A convenience store and seafood restaurant is along the southern boundary of the site. A gas station is located at the southeast corner of the site. The proposed hotel building will be located on the northern edge of the land along the shoreline, while the hotel will be almost occupy the entire width of the land from west to east.

The subject property is flat with very gentle slope to southeast. The shoreline is protected with rip-rap rock boulders and cobbles.

3.2 Subsurface Conditions

Subsurface soil and groundwater conditions were investigated by conducting six (6) geotechnical test borings up to 65' depth on August 1, 2017, and four (4) test pits to a maximum depth of 10' on September 6, 2017. Procedure for test borings included soil sampling at every 5' (from 2.5' to total depth of drilling), pocket penetrometer tests where cohesive soils were encountered, and logging of soil and groundwater conditions. Procedure for test pits included logging soil and groundwater conditions to 10', while taking samples and pocket penetrometer readings where necessary. The results of test borings and test pits are presented in the Appendix (Figures 4 through 13). The descriptions of soil symbols and classifications used in this report also are presented in the Appendix (Figure 3).

Site soils are generalized in the adjacent schematic drawing. As shown, the soils at this site consist of:

- a. Asphalt and road base of Sand and Gravel
- b. Fill silty sand (SM) with rock cobbles and boulders
- c. Silty Sand (SM) with cohesive
- d. Clayey Sand (SC)
- e. Bedrock (shale stone at 65['])

a. Asphalt and road base of Sand and Gravel (SM-SP)

The site is covered entirely with asphalt pavement of $2^{"}$ to $3^{"}$ thickness underlain by ~ $12^{"}$ thick import sand and gravel as road base.



b. Fill: Silty Rock Cobbles and Boulders in Sand (SM) Matrix

A layer of silty sand, which varies in thickness from 24" to 30" generally below the asphalt and road base sand and gravel. The silty sand is gray, damp, cohesive and

cohesion less varying in places, silt increasing with depth, brown near surface. Vegetation roots appeared in test boring #4. Pebbles and boulders were also observed in spots. The soil contents vary from places.

At the depth ~ 7' to 17'-20', significant amount of large size rock fragments such as cobbles and boulders were encountered in all test borings and test pits except for Test Boring #4, where is a grass area by the shoreline. The drilling in the layer is difficult.

c. Cohesive Silty Sand (SM)

At the depth of ~ 17'-20', the soil became native silty sand, gray, damp to wet and cohesive. The extracted sand samples were soft in boring #2, #4, #5 to medium stiff in boring #3. The penetrometer reading were generally $q_u \approx 0.5$ tsf (*tons per square foot*).

d. Clayey Sand (SC)

The sand grades to gray clayey sand from 40° to 65° depth. This layer was moist to dry, very dense and hard, penetrometer reading was larger than 5 tsf. The shale stone was encountered at the 60° .

e. Bedrock of Shale-stone

Shale stone was encountered at the bottom of the drilling 60' to 65' below ground surface.

3.3 Geologic Background

The project area is located in the Astoria basin. This area has more than 10,000-ft-thick Tillamook Volcanics representing economic basement in the area. These rocks are exposed in uplifted fault blocks in the southeast part and overly the volcanic basement, generally thin over the gravity high and thicken towards the basins. The deepest part of the basin in northwest Oregon lies approximately 7 mi southeast of Astoria and contains more than 10,000 ft of upper Eocene to middle Miocene strata. The sedimentary section probably exceeds 15,000 ft in the offshore part of the basin (Snavely and others, 1977; Armentrout and Suek, 1985).

This site is mapped as Wickiup Mountain member (middle to lower Miocene) according to Oregon Interactive Geological Map. The soils are descirbed as 400 m of structureless to laminated shallow - water feldspathic sandstone (Taw). Generally fine grained, locally trough cross-bedded, and fossiliferous. Sandstone is blue gray when fresh but commonly is weathered to yellowish to greenish gray. Upper part (Tawu) consists of friable, very fine grained sandstone and micaceous southwest, and contains molluscan fossils referrable to Pillarian and Newportian Stages of Addicott, according to the geologic units shown on the "Geologic Map of Astoria Basin, Clatsop and Northernmost Tillamook Counties, Northwest Oregan"by Alan R. Niem and Wendy A. Niem (1985).

3.4 Surface and Ground Water Conditions

The site is mostly covered by pavement. No surface water was observed on the site at the time of our visit on August 1, 2017. The groundwater level at the site was consistently at $\sim 8.0^{\circ}$ below ground surface in test borings during August 1 to 3, 2017 and in test pits on September 6, 2017. The water level was consistency with NOAA Tide Predictions Application during August and September. From the rip-rap rock shore and the timber piles remaining in the water, we can observe the high water mark will be approximately one foot higher than the water level observed at the time of our field investigation. So, we anticipate that the water table at the site may be as high as about 7' below ground surface.

4. EVALUATION OF GEOTECHNICAL FEASIBILITY

4.1 Seismic Impact

The subsurface soil conditions were investigated in this study by both test pits and borings

(Section 3. 2). Upon finding sand and the groundwater table near the surface, we investigated for possible liquefaction under earthquake loading. Liquefaction is a phenomenon associated primarily with saturated cohesion-less soils under zero effective stress. Effective stress equals the confining pressure of the soil minus the pore pressure. When saturated cohesion-less soils undergo cyclic earthquake loading, the induced excessive pore water pressure cannot dissipate and thus grows larger. When the pore water pressure becomes equal to the confining pressure from the overburden load, the effective stress of the soil becomes zero and therefore, the soil losses its strength or stiffness and becomes liquefied. This will consequently result in the settlement of buildings or ground breaking.

In order to assess the risk of liquefaction at the site, two tests were conducted:

- 1. Grain size distribution analysis (Figures 14 through 19)
- 2. Test borings with SPT (Standard Penetration Tests) (Figures 4 9).

The grain size distribution curves of the sand on site are plotted in the Chart below. As shown in Chart 1, the silty soils on site fall into the range of the most liquefiable soils. Therefore, the



CHART 1: Ranges of grain size for potential liquefaction during earthquaeke (after National Researh Council (NRC), 1985).

Merit Engineering Inc.
SPTs from the five test borings were utilized in order to determine the strength of the soil in terms of blow count (N).

In the seismic analysis, we first determined the total overburden stress at depth (σ_0) and effective overburden stress (σ_0) for every five feet within each borehole. This was necessary to determine the overburden correction factor (C_N) for each five foot interval. Once a C_N value was calculated for each five foot interval, a blow count correction, (N_1)₆₀, was also necessary. Upon determining the blow count correction, the intensity of the ground motion on site, $\frac{\tau_d}{\sigma_0}$ was determined by the following equation:

$$\frac{\tau_d}{\sigma_o'} = 0.65 a_{max} \sigma_o \gamma_d \frac{\gamma_d}{\sigma_o' g}$$

Where:

 a_{max} = The maximum acceleration at ground surface γ_d = stress reduction factor g = acceleration due to gravity σ = overburden stress

For these calculations, a_{max} was set to 0.2g as prescribed by the International Building Code (IBC) (2015). The value of γ_d was determined from the stated relationship that at the ground surface the γ_d value equals 1 and at a depth of 35' the value equals 0.9. This equation defined a series of points on a graph that shows the relationship between stress ratios causing liquefaction and (N₁) 60 values for silty sands for magnitude 7.5 earthquakes. These five figures appear in the Appendix (Figures 20-24) and take into account a factor of safety of 1.35, which is suggested as adequate by the NRC (*National Research Council*) (1985).

4.2 Discussion of Seismic Study Results

At first, we need to mention that the site conditions are summarized as follow for discussion:

- Ground water depth is at the typical around 8⁻, so the soil samples above 10⁻ is not considered since above water table including 7.5⁻, 5⁻, and 2.5⁻ depth;
- 2. Large amount of rock fragments in size of cobble and boulders were found at the depth between ~ 7.5' to 17'. The drill rigs encountered the rocks in all borings except for Boring No. 4 where is in a grass area, where appeared no fills. Therefore, the layer of rocks are apparently in entire areas of developed area under asphalt paving or buildings. The samples were very limited due to the presence of the rock fills. The rock fragments are so big a size so the collected sandy soil samples in the grain size analysis could not include the weight of the rocks. In our opinion that if the rocks are included in the analysis for grain size distribution, the soil will be classified as gravel rather than sand. So for the soil layer with the large amount of rocks, the liquefaction potential will be low.
- 3. The silty sands between 17' and 40' depth are cohesive in nature, pocket penetrometer readings from the collected samples are consistent $q_u = 0.5$ tsf or cohesion C = 2,000 psf (*pounds per square foot*). So, the liquefaction potential is low for the cohesiveness.
- 4. The clayey sands below are both with clay content and high blow count numbers, so the soil are not liquefiable.

However, for the sensitivity study, we still did seismic analysis using the soil samples collected, which ignored the existence of the rocks and cohesion in the soils. Based on our seismic calculations and the results shown in Figures 20 - 24. Results for locations at Test Borings 4 and 6 show that the area (please see Figure 2 Site Plan) has less or no rocks fill. While the other locations show less depths of liquefaction potential. When considering the typical factor of safety of 1.35 within calculations, the results for soils in between ~10' to 30' plot further close to the non liquefaction side.

The referenced NRC document states that the presence of a non-liquefiable surface layer that is 10' thick or greater may effectively prevent the observable effects of at-depth liquefaction from reaching the surface (NRC 1985). The local fill layer that consists pebbles and boulders with mix silty sands is about 10' thick, which increase voids of sub-surface significantly, will also result in reduction in potential for liquefaction. In addition, liquefaction potential tends to decrease with depth and greater overburden pressure. For the subject site, the proposed hotel above the test borings covers about 300 X 50 area. The overburden pressure provided by proposed hotel would decrease the liquefaction potential. Based on these understood behaviors, and the results of site observations and testing, it is our opinion that the site is subject to low liquefaction concern and even if liquefaction occurs, which will be spots and not in thick layer and not near surface. Therefore, with the upper 10' of site soil to be compacted and with grade-beam type rigid system, the site may be suitable for the proposed development with shallow foundation.

5. CONCLUSIONS AND RECOMMENDATIONS

We conclude, based on this investigation, that the site may be suitable for the proposed development if the recommendations in this report are followed.

5.1 Site Preparation and Grading

We recommend reworking the upper ~ 8' of soils above water table and above the larger rock cobbles and boulders by removing the asphalt and any organic and unsuitable loose and soft soils from the areas under the proposed structure. Backfill with a layer 4' thickness of compacted 8" minus quarry rocks below the footing. On site sandy soils may be re-used for fill in other areas than the 4' thickness of compacted 8" minus quarry rocks.

We recommend grading the exposed subgrade away from footing and slab-on-grade locations to minimize the potential for accumulation of surface water. We anticipate that soil excavation can be accomplished with conventional equipment. Due to the groundwater and wet nature of the on-site undersoil, we recommend that care be taken to the maximum extent possible for erosion and ground control if work is done in the wet season. It should be understood that significant additional costs and construction difficulty could be incurred if work proceeds in wet weather comparing with dry weather construction.

The exposed subgrade soils at the areas of the proposed buildings and parking should be proof-rolled with a loaded dump truck to reveal soft or yielding surficial soils. Any soft subgrade soils encountered during site excavation or exposed during proof-rolling should be removed and replaced with structural fill as recommended in the Structural Fill section of this report.

A temporary cut slope at the site should be no steeper than 2:1 (Horizontal to Vertical). Temporary shoring is required for excavation below the water table. We recommend that we evaluate the site conditions for suitable cut slope during site excavation.

We recommend that we observe and verify site excavation to suitable soil stratum, observe proof-roll, test to verify imported fill materials, and observe and test compaction of structural fill materials.

5.2 Foundation Design Parameters

We recommend placing the footings on import backfill of 4' thickness of compacted 8" minus quarry rocks.

Under condition of satisfying the above recommended footing dimensions, a soil bearing pressure of 4,500 psf (*pounds per square foot*) is recommended. Bearing pressure may be increased by $\frac{1}{3}$ for transient wind or seismic loads. This bearing recommendation is preliminary pending building design details. We recommend that we be contacted in the design phase to evaluate building details with our soils information and revise bearing allowances accordingly, since this site is with special liquefaction concerned soil conditions.

All perimeter footings should be at least 18-inches below the final outside grade for frost protection. The base width of the footings should be at least 18 inches and 24 inches for continuous and isolated column spread footings (to be connected by grade beams), respectively.

With the above recommended soil bearing capacity, the anticipated load on the footings, and the soil conditions from the test borings, we estimate that the total potential settlement of the foundations should be less than 1". While most settlement will occur in the short term as loads are applied, some settlement may occur over a long period of time after construction.

We recommend proof-rolling building pads before placement of concrete with a loaded dump truck to reveal soft or yielding surficial soils. Any loose or soft subgrade soils encountered during site excavation or exposed during proof-rolling should be replaced with compacted structural fill.

We recommend that we review those portions of plans and specifications that pertain to earthwork and foundations for they are consistent with the recommendations in this report.

We also recommend that we observe and verify site excavation to suitable soil stratum, a proof roll test to verify imported fill materials, and observe and test compaction of structural fill materials.

5.3 Seismic Design Parameters

The site may be defined as Site Class D according to IBC (International Building Code) 2015, representing a soil profile with dense and stiff soil conditions, where the soil depth exceeds 200^{-/}. The seismic design parameters for this site class and location, from *Seismic Hazard Curves and Uniform Hazard Response Spectra* (v5.0.9), are summarized in the following table:

SRA and Site Conditions	Short Period (0.2 sec)	1- Second Period
Mapped SRA	$S_s = 1.273$	$S_1 = 0.665$
Site Coefficients	$F_{a} = 1.2$	$F_v = 1.7$
Max. Considered Earthquake SRA	$S_{\rm MS}{=}1.528$	$S_{M1} = 1.313$
Design SRA	$S_{DS} = 1.019$	$S_{\text{D1}} = 0.754$

Table 1: Spectral Response Acceleration (SRA)

5.4 Slab-on-Grade Floor

The slab-on-grade-floor may be supported on the building pad prepared as recommended above. At least 8-inches of drain rock of $3/4^{\circ}$ maximum size should be placed between the slab and the slab subgrade.

A vapor barrier visquine should be placed between the slab and the capillary break material. An additional 1 to 2 inches of sand may be placed on top of the vapor barrier if desired to aid in concrete curing. In addition, use of a commercial concrete slab sealant for moisture protection may prove to be very helpful.

We recommend floor slabs be reinforced with $6 \ge 6$ wire mesh as a minimum to reduce potential crack separation and vertical offsets at the cracks. The reinforcement should be set at or above the mid-depth of the slabs.

To reduce cracking potentials, we suggest exterior patios and other flatworks contain reinforcement as recommended above for floor slabs. Flatwork should have frequent joint controls.

Additional measures to reduce potential cracking are considered warranted at critical areas where slab movement could impair use; such critical areas include stairways and any exterior patio slabs that meet the interior floor level at doorways. For such areas we recommend that the upper 12-inches of native soil be over excavated and replaced with import structural materials as specified in the Structural Fill section of this report.

5.5 Foundation and Site Drainage

A perimeter drainage system should consist of at least 6-inch diameter, perforated, rigid pipe. The pipes should be placed along the exterior base of the foundation perimeter and tight lined to a storm drain system or a natural drain course. The pipe should be bedded on 2-inch, and backfilled with a minimum of 12-inch, of pea gravel.

Under-slab cross-drains may be helpful, especially for daylight basement, to maintain a dry slab floor and facilitate drainage. A cross-drain system should be overlain by drain rock beneath the slab.

Roof downspouts should be tight lined to a storm drain system separately from the footing drains. In addition, the site should be graded so that surface water runoff is directed to catch basins that are attached to a storm sewer drain.

In addition, the site general parameter drain shall be installed for general site improvement. And we recommend that we be retained to consult and review on the drainage installation work.

5.6 Lateral Earth Pressure

We recommend placing structural fill behind subsurface and retaining stem-wall. The Horizontal thickness of the fill should be at least 1/2 the height of the wall. For structural fill, as recommended in the Structural Fill section of this report with a level ground, the parameters of lateral earth pressures are listed in Table 2.

Soil	Active, K _a	Passive, K _p	At Rest, K ₀		
Structural Fills 0.28		3.54	0.44		
Equivalent Fluid Pressure* (pcf):					
Structural Fills	34	425	53		

 TABLE 2: Lateral Earth Pressures Parameters

*Equivalent fluid pressure is the product of lateral earth pressure coefficient and the unit weight of the soil.

Design of subsurface walls should include appropriate lateral load due to adjacent surcharge. Under uniform surcharge q_o , lateral load due to a uniformly distributed lateral pressure σ , should be added to active and at rest soil lateral pressure, respectively, as defined in the following equation:

$$\sigma = \begin{cases} K_{a} q_{o} & \text{for active case} \\ K_{o} q_{o} & \text{for at rest case} \end{cases}$$

A coefficient of base friction of 0.55 and 0.45 may be used between concrete and structural fill and between concrete and fine sandy soil, respectively. However, if passive pressures are used in conjunction with frictional resistance to determine lateral resistance to sliding, only $1/_2$ the value of passive pressure presented above should be used since larger strains are required to mobilize passive soil resistance as compared to frictional resistance.

5.7 Structural Fill

We recommend import structural fill be well graded sandy gravel or gravelly sand meeting specification below, that is typical in this area as base granular materials with exception that percent passing U.S. No. 200 Sieve shall not exceed 5% and all materials smaller than 4". The specification is summarized below:

Sieve Size	Percent Passing by Weight
4" Square	100
2" Square	75-100
U.S. No. 4	22-66
U.S. No. 200	5.0 max.
Dust Ratio $\frac{\% Passing U.S. No. 200}{\% Passing U.S. No. 40}$	⅔ max.
Sand Equivalent	30 min.

 Table 3: Specification of Imported Fill Materials

Structural fill should be placed on a firm, horizontal subgrade in about 10-inch thick loose lifts and compacted to at least 95% of the ASTM D-1557 maximum dry density.

Backfill immediately behind retaining walls or adjacent to foundation stem walls should be compacted to about 90% of the ASTM D-1557 maximum dry density. Care must be taken to avoid over-compaction immediately behind walls. Backfill behind retaining walls must be free draining material.

It is important that plumbing and utility trenches be properly backfilled. Backfill in the trenches should meet the appropriate compaction criteria described above.

5.8 Pavement Design Parameters

Pavement for roads and parking must be placed over the firm subgrade - the firm native silty or sandy soil or on import structural fill. The recommended pavement design parameters for soils at the site and imported structural fill as recommended in the Structural Fill section of this report are listed in Table 4.

Soil	CBR ¹	R ²	k ³
On Site Sandy Soil	3.5	20	75
Structural Fill/Qaurry Rock	6.7	34	95

 Table 4: Soil Parameters for Pavement Design

1. California Bearing Ratio

2. Hveem's Resistance

3. Subgrade Modulus

In Table 4, the CBR values were estimated on the basis of soil classifications while R and k values were determined from correlation between CBR and R values, and between R and k, respectively.

We recommend compacting the base course to a minimum 95% of ASTM D-1557 maximum dry density. Efforts should be made to limit the amount of water entering the base course in order to prevent the road base from saturation so as to assure the pavement durability.

Frost damage sometimes affects pavement in this area where moist silty subgrade is encountered. To fully protect against this type of damage, a pavement section including granular base must extend to a depth of at least 18 inches total. However, thinner sections may be used if occasional damage is acceptable in return for the more economical pavement section.

We recommend asphalt concrete be Class B aggregate material conforming to Section 5-04 of the Washington State Department of Transportation Standard Specifications for Road, Bridge, and Municipal Construction.

Construction equipment having loads greater than those expected on the asphalt pavement should be avoided on the parking areas. A haul road or increased pavement section should be installed to allow heavier construction equipment movement.

6. GENERAL CONDITIONS

The recommendations provided herein are based on our understanding of the project at this time. We expect the on-site soil conditions to reflect our findings, however, some variations may occur. Should soil conditions be encountered that cause concern and/or are not discussed herein, Merit Engineering, Inc. should be contacted immediately to determine if additional or alternate recommendations are required.

We recommend that we review those portions of the plans and specifications that pertain to site earthwork, removal of unsuitable fill and installation of import to ensure that they are consistent with the recommendations in this report.

We recommend that we verify site excavation to suitable soil stratum, observe proof-roll, verify imported fill materials and observe and test compaction of structural fill.

This report is prepared for Hollander Investment, Inc. for the specific application to the proposed hotel at the 180 Marine Dr, in the City of Astoria, Oregon. This report is completed in accordance with generally accepted geotechnical/geological engineering practices in this area. No other warranty, expressed or implied, is made.

This report is an instrument of our professional service, and we (Merit Engineering, Inc.) shall retain an ownership and property interest therein. We grant Hollander Investment, Inc. a license to use the instrument of our professional service for the purpose of constructing the above mentioned proposed buildings. We do not permit reuse or modification of this document for application to a different structure other than that proposed at the site or to another property because soil and subsurface conditions are unique and site specific for different locations.

The owners and/or their representatives should understand that they are willing to take the risk to live in a geologically critical area and, therefore, agree to indemnify and hold Merit Engineering, Inc. harmless, including its owners and employees, for the property owners are ultimately responsible for potential adverse consequences of living in a geologically critical area.

APPENDIX

Subsurface conditions at the site were investigated by conducting three (6) test borings to a maximum depth of 65.0 feet on August 1, 2017, and four (4) soil test pits to a maximum depth of 10 feet on September 6, 2017. The approximate building area was predetermined by CARLETON HART ARCHITECTURE. Test boring and test pit locations were determined by a representative of Merit Engineering Inc. as shown approximately on the Site Plan (Figure 2) presented in the Appendix of this report. Tests borings and test pits were conducted within each proposed building footprint to generalize the subsurface soil conditions. Depths referred to in this report are relative to the existing ground surface at the time of the field investigations.

The description of subsurface conditions is based on the observations made at the site at the time of the field investigations. Soil logs are presented in Figures 10 through 13, with test boring logs in Figures 4-9. The soils observed at the site were classified using the USCS (Unified Soils Classification System) in accordance with ASTM D-2488-69 and ASTM D 2487. This classification system is also presented in the Appendix (Figure 3). Sieve and seismic analysis results are presented in Figures 14-24.





LEGEND		Project No. YF0222814	SITE PL
Property Boundary	STORIA OREGAN	Geotechnical Report Proposed Hollander Ho 180 Marine Dr Astoria, Oregon 9710	otel 3
Approximate Test Pit Location	The site plan was based on the information provided by CARLETON HART ARCHITECTURE	Prepared For: HOLLANDER INVESTME	ENT,INC.

X

AN	Date: 9/25/2017	Parcel 1
ПЛЕ		
1012	29 Main Stree	t #201
Bell	Levue, Washingto	on 98004
Tele	ephone: (425)	454-2133
http	o://www.MeritEngine	ering.com

UNIFIED SOIL CLASSIFICATION SYSTEM					
	MAJOR D	IVISIONS		DESCRIPTION	
	GRAVELS	Gravels with		GW	Well graded gravels, gravel-sand mixtures
sieve	more than 50%	5% fines		GP	Poorly graded gravels, gravel-sand mixtures
SOILS #200	coarse fraction is larger than	Gravels with more than		GM	Silty gravels, gravel-sand-silt mixtures
INED (ned on	NO. 4 SIEVE SIZE	12% fines		GC	Clayey gravels, gravel-sand-clay mixtures
E GRA % retai	SANDS	Sands with		sw	Well graded sands, gravelly sands
:OARS han 50'	more than 50%	5% fines		SP	Poorly graded sands, gravelly sands
C more tl	coarse fraction is smaller than	Sands with		SM	Silty sands, sand-silt mixtures
		12% fines		SC	Clayey sands, sand-clay mixtures
		ML	Inorganic silts & very fine sands, rock flour, silty or clayey fine sands, or clayey silts with slight plasticity		
DILS #200 si	SILTS AND CLAYS			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, or lean clays
Ssing #			OL	Organic clays and organic silty clays of low plasticity	
GRAIN 50% pa			ΜН	Inorganic silts, micaceous or diatomacious fine, sandy or silty soils, elastic silts	
FINE than (SILTS AND CLAYS			СН	Inorganic clays of high plasticity, fat clays
more		eater than 50		ОН	Organic clays of medium to high plasticity, organic silts
		PT	Peat and other highly organic soils		
UNCONTROLLED FILL			Uncontrolled, with highly variable constituents		
	LEGEND				
					0)///50/

SAMPLE		SYMBOL
SPLIT SPOON SAMPLER	$\overline{\underline{\nabla}}$	GROUNDWATER TABLE
SHELBY TUBE SAMPLER	q_{u}	PENETROMETER READING TSF (<i>tons per square foot</i>)

MERIT ENGINEERING INC.

10129 Main Street #201 Bellevue, Washington 98004 Telephone: (425) 454-2133 http://www.MeritEngineering.com

SOIL CLASSIFICATION & LEGEND

Figure 3












































CARLETON HART ARCHITECTURE P.C.

830 sw 10th avenue #200 portland oregon 97205503 243 2252www.carletonhart.com

APPENDIX C: SITE SURVEY



<u>LEGEND</u>

____ ___

----- GAS

SS	SANITARY SEWER MANHOLE
×	WATER VALVE
W	WATER METER
¥	FIRE HYDRANT
	STORM DRAIN GRATE
¢	ELECTRIC TRANSFORMER
EM	ELECTRIC METER
⋴₩	STREET LIGHT
-0-	UTILITY POLE
(—	GUY ANCHOR
GAS	GAS METER
0	BOLLARD
q	SINGLE POLE SIGN
	PROJECT BOUNDARY
	TAX LOT LINE
	STREET CENTERLINE
	STREET RIGHT OF WAY
	RAILROAD RIGHT OF WAY
	UNDERGROUND STORM SEWER
	UNDERGROUND WATER LINE
	UNDERGROUND GAS LINE
	UNDERGROUND ELECTRIC LINE
	UNDERGROUND ELECTRIC LINE



CONIFER TREE

DECIDUOUS TREE

NEAREST FOOT)

CONSTRUCTION MONUMENT PROPERTY CORNER MONUMENT \oplus 25.25 SPOT ELEVATION (NAVD 88) CLEARANCE OF OVERHEAD UTIL. LINE ABOVE GROUND (ROUNDED DOWN TO THE

<u>METADATA</u>

HORIZONTAL DATUM: NAD83 (2011) ORGN VERTICAL DATUM: NAVD88 (GEOID 12B) UNITS: INTERNATIONAL FOOT COORDINATE SYSTEM: OREGON COORDINATE REFERENCE SYSTEM, OREGON COAST ZONE

FIELD SURVEY CONDITIONS OBSERVED AUGUST, 2017

UNDERGROUND UTILITY LOCATION DISCLAIMER: MAGYAR LAND SURVEYING LLC MAKES NO CLAIMS AS TO THE POSITIONAL ACCURACY OR VALIDITY OF ANY UNDERGROUND UTILITY FEATURES SHOWN HEREIN. ALL UNDERGROUND FEATURES ARE SHOWN RELATIVE TO PAINTED MARKS OBSERVED ON THE GROUND AS OF THE AFOREMENTIONED DATE.



DRAWING 17007sv52 – 12/4/2017

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APPENDIX D: ASTORIA CITY CODE 6.100 VISION CLEARANCE AREA

the stop must not interfere with a bus or taxicab about to enter or using the zone.

- (2) Except as provided in subsection (3), use of the bus zones shall not exceed 15 minutes.
- (3) A driver of a vehicle may stop, stand or park in a bus stand between the hours of 8:00 PM and 6:00 AM when the buses are not scheduled to run and are not using the bus stands.
- (4) The city manager, by written rules and regulations, may allow other uses of bus stands at times when they are not required for bus use. [Section 6.085 amended by Ordinance No. 86-21, passed November 17, 1986.]
- **6.090** <u>Lights on Parked Vehicles</u>. No lights need be displayed on a vehicle parked in accordance with this code that is on a street where there is sufficient light to reveal a person or object on the street within a distance of 500 feet.
- **6.095 Exemption**. The provisions of this code regulating parking or standing of vehicles shall not apply to any vehicle of a city department or public utility while necessarily in use for construction or repair work on the street or any vehicle owned by the United States while in use for the collection, transportation or delivery of United States mail.

6.100 <u>Vision Clearance Area</u>.

(1) <u>Definitions</u>.

As used in this ordinance or in the interpretation of this ordinance, the following terms will have the meanings indicated:

<u>Central Business District</u>: An area bounded to the west by 7th Street, on the east by 16th Street, on the north by the Columbia River and on the south by properties abutting Exchange Street.

<u>Non-Residential Zones</u>: All zones other than the R-1 Zone (Low Density Residential), R-2 Zone (Medium Density Residential), and R-3 Zone (High Density Residential).

(2) <u>Clearance Area</u>.

The vision clearance area shall not contain any plantings, walls, structures or temporary or permanent obstructions to vision between thirty (30) inches and eight (8) feet in height above the street (Figure 1) except as follows:

- a. Supporting pillar, post, or trunk not greater than twelve (12) inches in diameter or twelve (12) inches on the diagonal of a rectangular pillar or post.
- b. Posts or supporting members of street signs, street lights, and traffic control signs installed as directed by the Department of Public Works or any other sign erected for public safety.
- c. Sign portion of traffic control signs installed by the Department of Public Works or Oregon Department of Transportation in compliance with the Manual on Uniform Traffic Control Devices.

Figure 1: Vision Clearance Area Height



Vision clearance shall not be required at a height of eight (8) feet or more above the street or on hills above opposing drivers' eye level.

The City Engineer may adjust vision clearance area requirements as needed for safety, depending on intersection angle, topography, or other conditions, including the clustering of poles in an area.

(3) <u>Streets and railroads</u>.

A vision clearance area shall consist of a triangular area, two sides of which are 25-foot lengths along the outside curb edges of streets, or the paved area of a street without a curb, and/or edges of gravel beds of railroads and the third side of which is a line across the corner of the lot connecting the ends of the other two sides (Figure 2).



(4) Alleys and residential driveways.

A vision clearance area shall consist of a triangular area, two sides of which are 10-foot lengths along the property line and edge of the driveway or alley and the third side of which is a line across the corner of the lot connecting the ends of the other two sides (Figure 3).

Figure 3: Vision Clearance Area for Alleys and Residential Driveways



6.100

A vision clearance area shall consist of a triangular area, two sides of which are 20-foot and 10-foot lengths along the property line and edge of the driveway, respectively, and the third side of which is a line across the corner of the lot connecting the ends of the other two sides (Figure 4).

Figure 4: Vision Clearance Area for Non-Residential Driveways



(6) <u>Intersection Parking</u>.

In the Central Business District and Non-Residential Zones, no vehicle over five (5) feet in height, with shaded windows, blocked windows, or no windows shall park or stand in a marked parking space within twenty-(20) feet of the intersection, unless the intersection is controlled by a traffic signal or the parking stall is located on the departing leg of a one-way street.

(7) The above sections shall not be construed as a waiving or altering of any yard requirements or setback requirements that may be required by this or any other ordinance. [Section 6.100 amended by Ordinance No. 14-04, passed April 21, 2014.]



CARLETON HART ARCHITECTURE P.C.

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APPENDIX E: TRAFFIC IMPACT STUDY



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

March 14, 2018

Project #: 22383

Nathan Crater, P.E. City of Astoria 1095 Duane Street Astoria, OR 97103

Keith P. Blair, P.E. Oregon Department of Transportation (ODOT) Region 2 455 Airport Road SE, Building A Salem, Oregon 97301

RE: Astoria Fairfield Inn & Suites Transportation Impact Study – Astoria, OR

Dear Nathan and Keith,

This Transportation Impact Study (TIS) has been prepared to support development of the proposed Fairfield Inn & Suites hotel in Astoria, OR. This letter includes the following analyses:

- Operational assessment of the Marine Drive/2nd Street intersection, a proposed new 2nd Street/site access driveway, and two existing private access driveways off of Marine Drive that would provide access to the site.
- Trip generation and trip distribution estimate for the proposed Fairfield Inn & Suites.
- Operational and safety assessment of the Marine Drive/2nd Street intersection and adjacent driveways under full site build-out of the proposed hotel.
- Intersection sight distance evaluations at the adjacent Marine Drive driveways.

BACKGROUND

Hollander Hospitality and Carleton Hart Architecture are proposing to develop a 66-room Fairfield Inn & Suites hotel in Astoria. The hotel will be located on the northern half of the block bounded by Marine Drive to the south, 2nd Street to the east and the Columbia River/Astoria Riverwalk to the north/west. Figure 1 shows the site vicinity. The hotel will have a full access driveway located off of its 2nd Street frontage. This driveway will provide access to the hotel loading zone as well as access to the hotel's parking located in the northwest corner of the site. In addition to this driveway, the site can be accessed off of Marine Drive via two existing driveways that serve a currently vacant restaurant (formerly Stephanie's Cabin). A site plan illustrating the Fairfield Inn & Suites and noted site driveways is shown in Figure 2. For the purposes of this analysis, it has been assumed that full build out and occupancy of the Fairfield Inn & Suites will occur in 2019.







STUDY SCOPE & ANALYSIS METHODOLOGY

This section provides an overview of the TIS study scope, study methodology, applicable operating standards, and the report structure.

Study Scope

This analysis identifies the transportation-related impacts associated with the proposed hotel. The study was prepared in accordance with the City of Astoria's traffic impact study requirements and supplemental direction provided by ODOT. The study scope and overall study area for this project were selected based on an analysis of current and future traffic volumes at the study intersections and discussions with both City and ODOT staff.

Traffic Analysis Time Periods and Horizon Year

At the request of City staff, study intersection operations were analyzed during the weekday evening peak hour (intersection peak hour between 3:00-6:00 PM). On- and off-site infrastructure needs were assessed assuming completion and occupancy of the hotel by 2019.

- Existing PM peak hour conditions;
- 2019 PM peak hour background conditions (prior to site development); and
- 2019 PM peak hour total traffic conditions (upon completion and occupancy of the proposed hotel).

Analysis Methodology

The unsignalized intersection operational analyses presented in this report were prepared following Highway Capacity Manual 2010 analysis procedures using Synchro 9 software.

Performance Measures & Operating Standards

Intersection performance measures reported in this study include level of service (LOS), volume-tocapacity ratio (V/C), and delay according to the following requirements.

ODOT Mobility Standard

ODOT's mobility target for the stop-controlled minor street approach to intersections along Marine Drive is an intersection V/C ratio no greater than 0.85 during the peak 15-minutes as identified in the Oregon Highway Plan.

City of Astoria Operating Standard

The City of Astoria has not adopted intersection operating standards and therefore generally relies on ODOT standards.

EXISTING CONDITIONS TRAFFIC ANALYSIS

The existing conditions analysis identifies field conditions and the current operational, traffic control, and geometric characteristics of the roadways and other transportation facilities within the study area. These conditions will be compared with future opening year conditions later in this report. KAI staff visited the study area and inventoried the existing transportation system to identify lane configurations, traffic control devices, bicycle and pedestrian facilities, geometric features, and sight distances at the study intersections in January 2018.

Site Conditions and Adjacent Land Uses

The proposed development site is located west of 2nd Street on the northerly half of land between Marine Drive and the Columbia River/Astoria Riverwalk. An existing vacant structure (the former Ship Inn Restaurant) is located on the northeast corner of the site. Immediately south of the site is an existing gas station and Josephson's Smokehouse. Southwest of the site is an existing vacant structure that was formerly Stephanie's Cabin restaurant.

Transportation Facilities

This section provides a multi-modal overview of transportation facilities in the site vicinity.

Roadway Facilities

Figure 3 summarizes the existing lane configurations and traffic control devices at the study intersection and driveways. Table 1 summarizes roadways in the site vicinity that are assessed as part of the traffic impact study.

Table 1 - Existing Transportation Facilities

Roadway	Functional Classification	Jurisdictional Authority	Number of Auto Lanes	Posted Speed (mph)	Sidewalks Present?	Bicycle Lanes Present	On-Street Parking Allowed?
Marine Drive (US 30)	Statewide Highway	ODOT	4 ¹	25 ²	Yes	No	No
2 nd Street	Mixed Use Local Street (north of Highway 30) Residential Local Street (south of Highway 30)	City of Astoria	2	Not posted	Yes	No	Yes

¹ Marine Drive transitions into a five-lane cross section just west of the site.

² The posted speed on Marine Drive/US 30 increases to 30 mph just west of the site.



KITTELSON & ASSOCIATES

V/C = CRITICAL CRITICAL VOLUME-TO-CAPACITY RATIO

Astoria, Oregon

3

Existing Traffic Volumes

Turning movement counts were conducted at the Marine Drive/2nd Street intersection and noted driveways between 3:00 PM and 6:00 PM on a mid-week day in January 2018. Peak traffic volumes were observed at the intersection and driveways between 4:20 and 5:20 PM. Per the ODOT Analysis Procedures Manual (APM) (Reference 3), the existing traffic volumes along Marine Drive were seasonally adjusted based on guidance contained in the APM. Specific details and information related to these calculations are provided in Appendix A. Figure 3 shows the resulting turning movement counts at the study intersections and driveways during the weekday PM peak hour. Appendix "A" contains the traffic count worksheets used in this study and the seasonal adjustment calculations.

Existing Intersection Operations

Operations of the study intersections were assessed using the previously described methodology and were compared to the ODOT mobility targets. Figure 3 summarizes the individual intersection/driveway performance in terms of V/C ratio and delay. As shown, the side-street movements at the study intersections/driveways satisfy ODOT's V/C ratio target (less than or equal to 0.85 for unsignalized intersections). While the critical side-street movements will have sufficient capacity, these movements can experience relatively long delays during the peak time periods. *Appendix "B" includes the existing conditions intersection operations analysis worksheets*.

Intersection Crash History

The crash histories at the individual study intersections were obtained and reviewed in an effort to identify potential safety issues. ODOT provided crash records for the study intersections for the five-year period from January 1, 2010 through December 31, 2014. Table 2 summarizes the ODOT crash data.

				Severity						
Intersection	Total	Rear- end	Turning	Pedestrian	Angle	Fixed Object	Other	PDO	Injury	Fatal
Marine Drive/2 nd Street	2	1	1	0	0	0	0	2	0	0
Marine Drive/East Driveway	2	2	0	0	0	0	0	1	1	0
Marine Drive/West Driveway	1	1	0	0	0	0	0	1	0	0

Table 2 - Study Intersection Crash Summary (2011-2015)

PDO = Property Damage Only

Given the relatively low number of reported crashes, no trends or safety deficiencies were identified in the study area that require a more detailed safety analysis. *Appendix "C" includes the crash data sheets*.

While the crash data alone did not result in identification of safety-based mitigation needs attributable to the proposed Fairfield Inn & Suites, some changes were identified for consideration in conjunction with site development. In particular, field observations noted that intersection sight lines at the Marine Drive driveway flanking the east side of the former Stephanie's Cabin Restaurant /east driveway are limited by the Josephson's Smokehouse building. Currently, signage has been placed at the driveway indicating drivers should not exit onto Marine Drive via this driveway. It is recommended that the driveway continue to be operated as an ingress-only.

YEAR 2019 BACKGROUND TRAFFIC CONDITIONS

The year 2019 background traffic analysis identifies how the study area's transportation system will operate prior to development of the proposed hotel. This analysis includes traffic attributed to planned developments within the study area and to general growth in the region, but does not include traffic from the proposed development.

Planned Developments & Transportation Improvements

No formally approved in-process developments were identified by City or ODOT staff that would materially impact study intersection/driveway operations. Further, no planned improvements were identified at the study intersection and driveways that would impact operations.

As previously stated, a currently vacant restaurant (formerly Stephanie's Cabin) is located southwest of the site between the two Marine Drive study driveways. Based on conversations with the Fairfield Inn & Suites development team (who also own the former restaurant site), it is likely that the restaurant building will be reopened as a new eating establishment at some point in the future. While this will occur as a separate land use review process, future occupancy of the restaurant was conservatively

assumed as part of this study given its significance as a future trip generator that is located immediately adjacent to the proposed hotel site. To account for this trip potential, weekday PM peak hour vehicle trips were calculated for a 3,500 square-foot high-turnover sit-down restaurant as summarized in *Trip Generation*, 9th Edition, published by the Institute of Transportation Engineers (Reference 4). These trips were then assigned to the two Marine Drive study driveways and incorporated into the year 2019 background traffic volumes.



				Weekday PM Peak Hour				
Lane Use	ITE Code	Size	Total Daily Trips	Total	In	Out		
High-Turnover (Sit-Down) Restaurant	932	3,500 sq. ft.	446	34	20	14		

2019 Future Traffic Volumes & Intersection Operations

A 1.4 percent annual growth rate was assumed at the Marine Drive/2nd Street intersection and on the east-west through movements at the two Marine Driveway study driveways. This growth rate was calculated based on future year growth projections developed in the City of Astoria's 2013 Transportation System Plan (TSP). Figure 3 shows the projected 2019 turning movements at the study intersection and study driveways along with the corresponding operations. As shown in the figure, operations are forecast to continue to satisfy the applicable ODOT mobility target. However, like existing conditions, the critical side-street movements are forecast to continue to experience relatively long delays during the peak time periods. *Appendix "D" contains the year 2019 background traffic analysis worksheets.*

DEVELOPMENT PROPOSAL

Hollander Hospitality is proposing to develop a new 66-room Fairfield Inn and Suites hotel. The hotel will be located immediately west of the former Ship Inn restaurant. This former restaurant will be rehabilitated and repurposed as the entry lobby and dining area for the Fairfield Inn & Suites. Hotel parking will be provided along the west end of the project site. In addition to this parking, approximately 35 spots are planned to be leased (pending an agreement with the owner) from the parking lot located on the east side of 2nd Street.

Primary vehicular access to the hotel will be via a new driveway located off of 2nd Street near the hotel lobby. In addition, the site will have access via internal parking lot crossover connections to the former Stephanie's Cabin restaurant which is located adjacent to and southwest of the hotel site. As such, vehicular access will also be available via the two existing Marine Drive driveways that flank this former restaurant.

Hotel Trip Generation Estimate

Estimates of daily and weekday PM peak hour vehicle trip ends were calculated from empirical observations at other similar developments obtained from *Trip Generation*, 9th Edition. Table 4 shows the resulting estimated trip generation for the proposed hotel.

Table 4 – Hotel Trip Generation Estimate

				We	ekday PM Peak H	lour
Land Use	ITE Code	Size	Total Daily Trips	Total	In	Out
Hotel	310	66-rooms	540	40	20	20

Trip Distribution and Assignment

The distribution of site-generated trips was estimated based on current turn movement patterns along Marine Drive and roadway connectivity in the site vicinity. The resulting trip distribution pattern and assignment of site-generated trips at the study intersection and driveways are graphically illustrated in Figure 3.

YEAR 2019 TOTAL TRAFFIC CONDITIONS

The total traffic conditions analysis forecasts how the study intersections will operate with the traffic generated by the proposed Fairfield Inn & Suites. The weekday PM peak hour site-generated traffic was added to 2019 background traffic volumes to arrive at the total traffic volumes shown in Figure 3. *Appendix "E" contains the year 2019 total traffic analysis worksheets.*

As shown in Figure 3, all of the study intersections and driveways are projected to continue to satisfy the applicable ODOT V/C mobility target. However, like existing and background conditions, the critical side-street movements are forecast to continue to experience relatively long delays during the peak time periods.

DRIVEWAY INTERSECTION SIGHT DISTANCE

As previously noted, the driveway flanking the east side of the former Stephanie's Cabin restaurant is signed on site for no egress onto Marine Drive. This appears to be due to the limited intersection sight distance created by the adjacent Josephson's Smokehouse building as shown in Exhibits 1.

Given the site-generated trips from the proposed Fairfield Inn & Suites will be able to access this driveway, it is recommended that supplemental signage be installed on the Fairfield Inn & Suites internal drive aisle directing drivers to the driveway flanking the west side of Stephanie's Cabin in order to access Marine Drive.

Exhibit 1 – Facing East Along Marine Drive from the Eastern Study Driveway



SUMMARY AND RECOMMENDATIONS

The results of this traffic impact study indicate that the proposed Fairfield Inn & Suites can be accommodated by the surrounding transportation system. The findings and recommendations of this analysis are discussed below.

Findings

- All of the study intersections satisfy the applicable ODOT V/C mobility target during the weekday PM peak hour under existing and forecast 2019 conditions.
- With the inclusion of new traffic from the proposed Fairfield Inn & Suites, all of the study intersections and site driveways are projected to continue to satisfy the applicable ODOT V/C mobility target.
- The study driveway flanking the east side of the former Stephanie's Cabin restaurant should continue to be operated as ingress only due to the existing sight distance limitations associated with egress movements.

Recommendations

Based on the traffic analysis, the following transportation improvements are suggested in conjunction with site development:

- Signage should be placed along the Fairfield Inn & Suites drive aisle directing drivers destined for Marine Drive to use 2nd Street or the driveway flanking the west side of the former Stephanie's Cabin restaurant.
- On-site landscaping and any above ground utilities at the site access driveways and internal roadways should be maintained to provide adequate sight distance.

We trust this study adequately addresses the traffic impacts associated with the proposed Fairfield Inn & Suites. Please contact us if you have any questions or comments regarding the contents of this report or the analyses performed.

Sincerely, KITTELSON & ASSOCIATES, INC.

Mat Hustan

Matt Hughart, AICP Associate Planner



Kylie Caninos

Kylie Caviness Transportation Analysis

Appendix A Traffic Count Worksheets and Seasonal Factor Calculations

Seasonal Adjustment Factor

30th Hour Volumes (30 HV) were calculated based on the traffic counts collected in January of 2018 and the application of a seasonal adjustment factor. The APM identifies three methods for identifying seasonal adjustment factors for highway traffic volumes. All three methods utilize information provided by Automatic Traffic Recorders (ATR) found in select locations throughout the State Highway System that collect traffic data 24-hours a day/365 days a year.

The first method, the On-site ATR method, is typically used when there is an ATR located nearby. In this case, ATR 04-004 is located west of the site on the Astoria-Megler Bridge. However, based on feedback provided by ODOT, it was felt that this ATR and the traffic volumes that it captures does not provide a sufficient representation of volumes on Marine Drive near the project site. ODOT staff also felt that the study section of Marine Drive is not reasonably represented using the larger collection of ATRs in the ATR Characteristic Table Method. As such, the Seasonal Trend Method was utilized.

It was determined in consultation with ODOT staff that this section of Marine Drive fits an average of the "Coaster Destination" and "Coastal Destination Route".

Table 5 – Seasonal Trend Table

	Count Month (Jan.) Value	Peak Period Seasonal
Coastal Destination	1.2255	0.8202
Coastal Destination Route	1.5007	0.7660

- Coastal Destination
 - Count Date Seasonal Factor/Peak Period Seasonal Factor = 1.2205/0.8202 = 1.49
- Coastal Destination Route
 - Count Date Seasonal Factor/Peak Period Seasonal Factor = 1.5007/0.7660 = 1.96
- Average of Coastal Destination and Coastal Destination Route = 1.73

While the resulting seasonal adjustment factor of 1.73% exceeds ODOT's desired maximum value of 1.30%, the use of this factor was approved by ODOT staff given the lack of other available information. The specific application of this factor at the study intersection and driveways is summarized as follows:

- At the Marine Drive/2nd Street intersection:
 - 1.73 for all east-west through volumes on Marine Drive
 - 1.73 for all movements to/from the north leg of 2nd Street in recognition that 2nd Street is used to access the gas station as well as the vacant parking lot to the east of 2nd Street
 - No seasonal factor to/from the south leg of 2nd Street in recognition that this
 portion of 2nd Street has no commercial properties, is not a city-wide connector, and
 appears to be mostly residential in nature.
- At the two driveways flanking the former Stephanie's Cabin restaurant (and that also serve an existing Subway restaurant on the south side of Marine Drive):

- 1.73 for all east-west through volumes on Marine Drive
- 1.73 for all movements to/from the Subway restaurant under the assumption that Subway business is likely higher under 30th highest hour travel conditions.
- 1.73 for the few cars that are still using the former Stephanie's Cabin driveways (presumably visiting Josephson's Smokehouse)



Report generated on 2/5/2018 7:35 AM

Left

Thru

Northbound

Right

Left

<u>Thru</u>

Southbound

Right

Left

Thru

Eastbound

Right

Left

Thru

Westbound

Right

Total

5:40 PM

5:45 PM

Peak 15-Min

Flowrates

All Vehicles

Heavy Trucks

Pedestrians

Bicycles

Railroad Stopped Bus Comments:

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

Type of peak hour being reported: User-Defined



Comments:

Report generated on 2/5/2018 7:35 AM

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

Type of peak hour being reported: User-Defined



Report generated on 2/5/2018 7:35 AM

Stopped Buses Comments:

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



Report generated on 2/5/2018 7:35 AM

Heavy Trucks

Pedestrians

Bicycles

Railroad Stopped Bus Comments:

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

Appendix B Existing Conditions Intersection Operations Worksheets 0.5

02/12/2018

Intersection

Int Delay, s/veh

Movement EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	đ î þ			सी है			4			4	
Traffic Vol, veh/h 0	1202	19	12	1329	0	0	0	0	1	0	1
Future Vol, veh/h 0	1202	19	12	1329	0	0	0	0	1	0	1
Conflicting Peds, #/hr 0	0	4	4	0	0	0	0	0	0	0	0
Sign Control Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized -	-	None	-	-	None	-	-	None	-	-	None
Storage Length -	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, # -	0	-	-	0	-	-	0	-	-	0	-
Grade, % -	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, % 0	1	0	0	3	0	0	0	0	0	0	0
Mvmt Flow 0	1292	20	13	1429	0	0	0	0	1	0	1

Major/Minor	Major1		Ma	ajor2		Ν	Minor1		ľ	Minor2			
Conflicting Flow All	1429	0	0 1	1317	0	0	2047	2762	660	2101	2772	715	
Stage 1	-	-	-	-	-	-	1307	1307	-	1455	1455	-	
Stage 2	-	-	-	-	-	-	740	1455	-	646	1317	-	
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9	
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-	
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3	
Pot Cap-1 Maneuver	482	-	-	532	-	-	33	20	410	30	19	378	
Stage 1	-	-	-	-	-	-	172	232	-	139	197	-	
Stage 2	-	-	-	-	-	-	379	197	-	431	229	-	
Platoon blocked, %		-	-		-	-							
Mov Cap-1 Maneuver	r 482	-	-	532	-	-	30	18	408	27	17	378	
Mov Cap-2 Maneuver	r -	-	-	-	-	-	30	18	-	27	17	-	
Stage 1	-	-	-	-	-	-	171	231	-	139	174	-	
Stage 2	-	-	-	-	-	-	333	174	-	431	228	-	

Approach	EB	WB	NB	SB	
HCM Control Delay, s	0	0.8	0	80.2	
HCM LOS			А	F	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR S	SBLn1	
Capacity (veh/h)	-	482	-	-	532	-	-	50	
HCM Lane V/C Ratio	-	-	-	-	0.024	-	-	0.043	
HCM Control Delay (s)	0	0	-	-	11.9	0.7	-	80.2	
HCM Lane LOS	А	А	-	-	В	А	-	F	
HCM 95th %tile Q(veh)	-	0	-	-	0.1	-	-	0.1	

0.6

Intersection

Int Delay, s/veh

Movement E	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4Þ			đþ.			4				
Traffic Vol, veh/h	1	1202	0	0	1329	0	12	0	14	0	0	0
Future Vol, veh/h	1	1202	0	0	1329	0	12	0	14	0	0	0
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	0	0	0	0
Sign Control F	ree	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	1	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	1	1307	0	0	1445	0	13	0	15	0	0	0

Major/Minor	Major1		Ma	jor2		Ν	/linor1			
Conflicting Flow All	1445	0	0 1	308	0	0	2032	2755	654	
Stage 1	-	-	-	-	-	-	1310	1310	-	
Stage 2	-	-	-	-	-	-	722	1445	-	
Critical Hdwy	4.1	-	-	4.1	-	-	6.8	6.5	6.9	
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	5.5	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	5.8	5.5	-	
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	
Pot Cap-1 Maneuver	475	-	-	536	-	-	51	20	414	
Stage 1	-	-	-	-	-	-	220	231	-	
Stage 2	-	-	-	-	-	-	447	199	-	
Platoon blocked, %		-	-		-	-				
Mov Cap-1 Maneuver	475	-	-	536	-	-	51	0	414	
Mov Cap-2 Maneuver		-	-	-	-	-	51	0	-	
Stage 1	-	-	-	-	-	-	218	0	-	
Stage 2	-	-	-	-	-	-	447	0	-	

Approach	EB	WB	NB	
HCM Control Delay, s	0.1	0	56.7	
HCM LOS			F	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	97	475	-	-	536	-	-
HCM Lane V/C Ratio	0.291	0.002	-	-	-	-	-
HCM Control Delay (s)	56.7	12.6	0.1	-	0	-	-
HCM Lane LOS	F	В	А	-	А	-	-
HCM 95th %tile Q(veh)	1.1	0	-	-	0	-	-

0.5												
EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
	415			415			- 🗘			4		
3	1202	14	2	1330	17	1	0	6	5	0	3	
3	1202	14	2	1330	17	1	0	6	5	0	3	
2	0	3	3	0	2	2	0	0	0	0	2	
Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	
-	-	None	-	-	None	-	-	None	-	-	None	
-	-	-	-	-	-	-	-	-	-	-	-	
,# -	0	-	-	0	-	-	0	-	-	0	-	
-	0	-	-	0	-	-	0	-	-	0	-	
95	95	95	95	95	95	95	95	95	95	95	95	
0	2	0	0	3	0	0	0	0	0	0	0	
3	1265	15	2	1400	18	1	0	6	5	0	3	
	0.5 EBL 3 3 2 Free - - - - - - - - - - - - - - - - - -	0.5 EBL EBT 3 1202 3 1202 4 120 1202 120	0.5 EBL EBR EBL EBT EBR I I I <tdi< td=""> I I</tdi<>	0.5EBLEBRWBL●●●●●●●●●●●○120214222○120214222○120214222○○333FreeFreeFreeFreeFree○○○○○●○○○○●○○○○●●● <td>0.5 EBR KBR WBL WBT EBL EBT EBR WBL WBT Image: Stress of the st</td> <td>0.5BEBLEBRWBLWBTWBRImage: Bar stress str</td> <td>0.5BELEBTBBRWBLWBTWBRNBLIEBTBBRWBLIIIMBRNBLIII</td> <td>0.5BEBEBFBBRWBLWBTWBRNBLNBT120214213301710312021421330171031202142133017104121330171005103302207FreeFreeFreeFreeStopStop70301106707101017011010101089959595959595912615214001810</td> <td>0.5BEBLEBRWBLWBTWBRNBLNBTNBT1202142133017711006612021442133017711006620330220066203301771100662033022000FreeFreeFreeFreeFreeStopStopStopFreeFreeFree6FreeStopStopStop6-0-0000070-0000009595959595959595950712651521400181006</td> <td>0.5EBLEBTEBRWBLWBRNBLNBTNBRSBL120214213301710653120214213301710652014213301710652033022000FreeFreeFreeFreeFreeStopStopStopStopFreeFreeFreeFreeFreeStop10000**0000000000**0000000000**00000000000**00000000000**000000000000**00</td> <td>0.5BELEBRWBLWBTNBRNBTNBRSBLSBLSBT12021421330171065031202142133017106503120214213301710650203302200007FreeFreeFreeFreeStopStopStopStopStop7003022000008FreeFreeFreeFreeStopStopStopStopStopStop70000000000080000000000095959595959595959595009126515214001810650</td> <td>0.5EBLEBRWBLWBTNBRNBTNBRSBLSBTSBTSBT1001202144213301771065033120214421330177106500331202144213301771065003312021442133017710650034033022006503710051421330177106503710014213301771065037120214421330177106503712021421330177106503712021401201201201010101010107120214012012012012012012012012012081201201201201201201201201201201201208120120120120120120120120120120120120<</td>	0.5 EBR KBR WBL WBT EBL EBT EBR WBL WBT Image: Stress of the st	0.5BEBLEBRWBLWBTWBRImage: Bar stress str	0.5BELEBTBBRWBLWBTWBRNBLIEBTBBRWBLIIIMBRNBLIII	0.5BEBEBFBBRWBLWBTWBRNBLNBT120214213301710312021421330171031202142133017104121330171005103302207FreeFreeFreeFreeStopStop70301106707101017011010101089959595959595912615214001810	0.5BEBLEBRWBLWBTWBRNBLNBTNBT1202142133017711006612021442133017711006620330220066203301771100662033022000FreeFreeFreeFreeFreeStopStopStopFreeFreeFree6FreeStopStopStop6-0-0000070-0000009595959595959595950712651521400181006	0.5EBLEBTEBRWBLWBRNBLNBTNBRSBL120214213301710653120214213301710652014213301710652033022000FreeFreeFreeFreeFreeStopStopStopStopFreeFreeFreeFreeFreeStop10000**0000000000**0000000000**00000000000**00000000000**000000000000**00	0.5BELEBRWBLWBTNBRNBTNBRSBLSBLSBT12021421330171065031202142133017106503120214213301710650203302200007FreeFreeFreeFreeStopStopStopStopStop7003022000008FreeFreeFreeFreeStopStopStopStopStopStop70000000000080000000000095959595959595959595009126515214001810650	0.5EBLEBRWBLWBTNBRNBTNBRSBLSBTSBTSBT1001202144213301771065033120214421330177106500331202144213301771065003312021442133017710650034033022006503710051421330177106503710014213301771065037120214421330177106503712021421330177106503712021401201201201010101010107120214012012012012012012012012012081201201201201201201201201201201201208120120120120120120120120120120120120<

Major/Minor	Major1		Μ	ajor2		N	Minor1		N	Minor2			
Conflicting Flow All	1420	0	0	1283	0	0	1988	2706	643	2054	2704	713	
Stage 1	-	-	-	-	-	-	1282	1282	-	1415	1415	-	
Stage 2	-	-	-	-	-	-	706	1424	-	639	1289	-	
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9	
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-	
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3	
Pot Cap-1 Maneuver	486	-	-	548	-	-	37	22	421	33	22	379	
Stage 1	-	-	-	-	-	-	178	238	-	147	206	-	
Stage 2	-	-	-	-	-	-	397	204	-	436	236	-	
Platoon blocked, %		-	-		-	-							
Mov Cap-1 Maneuver	485	-	-	548	-	-	35	21	420	31	21	378	
Mov Cap-2 Maneuver	· _	-	-	-	-	-	35	21	-	31	21	-	
Stage 1	-	-	-	-	-	-	174	232	-	143	202	-	
Stage 2	-	-	-	-	-	-	386	200	-	420	230	-	

Approach	EB	WB	NB	SB	
HCM Control Delay, s	0.1	0.1	28.1	97.6	
HCM LOS			D	F	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	163	485	-	-	548	-	-	47
HCM Lane V/C Ratio	0.045	0.007	-	-	0.004	-	-	0.179
HCM Control Delay (s)	28.1	12.5	0.1	-	11.6	0.1	-	97.6
HCM Lane LOS	D	В	А	-	В	А	-	F
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.6

Intersection													
Int Delay, s/veh	2.8												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		\$			\$			4			\$		
Traffic Vol, veh/h	0	0	0	1	0	0	0	0	1	0	0	0	
Future Vol, veh/h	0	0	0	1	0	0	0	0	1	0	0	0	
Conflicting Peds, #/hr	1	0	1	0	0	0	1	0	0	0	0	1	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	
RT Channelized	-	-	None										
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	
Veh in Median Storage,	# -	0	-	-	0	-	-	0	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70	
Heavy Vehicles, %	0	2	0	2	2	2	0	0	2	2	0	0	
Mvmt Flow	0	0	0	1	0	0	0	0	1	0	0	0	

Major/Minor	Minor2		l	Vinor1		ľ	Major1		Ν	/lajor2			
Conflicting Flow All	4	3	3	3	3	2	2	0	0	1	0	0	
Stage 1	2	2	-	1	1	-	-	-	-	-	-	-	
Stage 2	2	1	-	2	2	-	-	-	-	-	-	-	
Critical Hdwy	7.1	6.52	6.2	7.12	6.52	6.22	4.1	-	-	4.12	-	-	
Critical Hdwy Stg 1	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-	
Critical Hdwy Stg 2	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-	
Follow-up Hdwy	3.5	4.018	3.3	3.518	4.018	3.318	2.2	-	-	2.218	-	-	
Pot Cap-1 Maneuver	1022	893	1087	1019	893	1082	1634	-	-	1622	-	-	
Stage 1	1026	894	-	1022	895	-	-	-	-	-	-	-	
Stage 2	1026	895	-	1021	894	-	-	-	-	-	-	-	
Platoon blocked, %								-	-		-	-	
Mov Cap-1 Maneuver	1020	892	1085	1018	892	1081	1632	-	-	1620	-	-	
Mov Cap-2 Maneuver	1020	892	-	1018	892	-	-	-	-	-	-	-	
Stage 1	1025	893	-	1022	895	-	-	-	-	-	-	-	
Stage 2	1025	895	-	1020	893	-	-	-	-	-	-	-	

Approach	EB	WB	NB	SB	
HCM Control Delay, s	0	8.5	0	0	
HCM LOS	А	А			

Minor Lane/Major Mvmt	NBL	NBT	NBR EB	Ln1W	'BLn1	SBL	SBT	SBR	
Capacity (veh/h)	1632	-	-	-	1018	1620	-	-	
HCM Lane V/C Ratio	-	-	-	-	0.001	-	-	-	
HCM Control Delay (s)	0	-	-	0	8.5	0	-	-	
HCM Lane LOS	А	-	-	А	А	А	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-	-	

Appendix C Crash Data
OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Marine Dr Lower Columbia River Hwy (092) & 2nd St January 1, 2011 through December 31, 2015

		NON-	PROPERTY										INTER-	
	FATAL	FATAL	DAMAGE	TOTAL	PEOPLE	PEOPLE		DRY	WET			INTER-	SECTION	OFF-
COLLISION TYPE	CRASHES	CRASHES	ONLY	CRASHES	KILLED	INJURED	TRUCKS	SURF	SURF	DAY	DARK	SECTION	RELATED	ROAD
YEAR: 2011														
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2011 TOTAL	0	0	2	2	0	0	0	2	0	2	0	2	0	0
FINAL TOTAL	0	0	2	2	0	0	0	2	0	2	0	2	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT CONTINUOUS SYSTEM CRASH LISTING

Marine Dr Lower Columbia River Hwy (092) & 2nd St January 1, 2011 through December 31, 2015

S D								
PRSW	RD# FC CONN #	I	NT-TYP		SPCL USE			
SER# E A U C O DATE COUNTY	CMPT/MLG FIRST STREET	RD CHAR (ME	EDIAN) INT-REL OF	FRD WTHR CRASH TYP	TRLR QTY MOVE	A S		
INVEST E L G H R DAY/TIME CITY	MILEPNT SECOND STREET	DIRECT	LEGS TRAF- RN	NDBT SURF COLL TYP	OWNER FROM	PRTC INJ G E LICNS P	ED	
UNLOC? D C S L K LAT/LONG URBAN AREA	LRS INTERSECTION SEO#	LOCTN (#	#LANES) CNTL DR	RVWY LIGHT SVRTY	V# VEH TYPE TO	P# TYPE SVRTY E X RES L	OC ERROR ACTI	EVENT CAUSE
00377 N N N 09/01/2011 CLATSOP	1 14	INTER	CROSS N	N CLR S-1STOP	01 NONE 0 STRGHT			07
NONE Thu 10A ASTORIA	MN 0 MARINE DR	E	TRF SIGNAL	N DRY REAR	PRVTE E W		000	00
ASTORIA UA	98.71 2ND ST	06	0	N DAY PDO	PSNGR CAR	01 DRVR NONE 59 M OR-Y	026 000	07
No 46 11 26.01 -123 50 26.08	009200100800 1					OR>25		
					02 NONE 0 STOP			
					PRVTE E W		011	00
					PSNGR CAR	01 DRVR NONE 70 M OR-Y	000 000	00
						OR<25		
00271 N N N 07/08/2011 CLATSOP	1 14	INTER	CROSS N	N CLR ANGL-OTH	01 NONE 0 TURN-L			02
NO RPT Fri 3P ASTORIA	MN 0 MARINE DR	CN	STOP SIGN	N DRY TURN	PRVTE S W		015	00
ASTORIA UA	98.71 2ND ST	01	0	N DAY PDO	PSNGR CAR	01 DRVR NONE 19 M OR-Y	028 000	02
No 46 11 26.01 -123 50 26.08	009200100500 1					OR<25		
					02 NONE 1 STRGHT			
					PRVTE E W		000	00
					PSNGR CAR	01 DRVR NONE 00 M UNK	000 000	0 0
						OR>25		

092 LOWER COLUMBIA RIVER

ACTION	SHORT	
CODE	DESCRIPTION	LONG DESCRIPTION
000	NONE	NO ACTION OR NON-WARRANTED
001	SKIDDED	SKIDDED
002	ON/OFF V	GETTING ON OR OFF STOPPED OR PARKED VEHICLE
003	LOAD OVR	OVERHANGING LOAD STRUCK ANOTHER VEHICLE, ETC.
006	SLOW DN	SLOWED DOWN
007	AVOIDING	AVOIDING MANEUVER
008	PAR PARK	PARALLEL PARKING
009	ANG PARK	ANGLE PARKING
010	INTERFERE	PASSENGER INTERFERING WITH DRIVER
011	STOPPED	STOPPED IN TRAFFIC NOT WAITING TO MAKE A LEFT TURN
012	STP/L TRN	STOPPED BECAUSE OF LEFT TURN SIGNAL OR WAITING, ETC.
013	STP TURN	STOPPED WHILE EXECUTING A TURN
014	EMR V PKD	EMERGENCY VEHICLE LEGALLY PARKED IN THE ROADWAY
015	GO A/STOP	PROCEED AFTER STOPPING FOR A STOP SIGN/FLASHING RED.
016	TRN A/RED	TURNED ON RED AFTER STOPPING
017	LOSTCTRL	LOST CONTROL OF VEHICLE
018	EXIT DWY	ENTERING STREET OR HIGHWAY FROM ALLEY OR DRIVEWAY
019	ENTR DWY	ENTERING ALLEY OR DRIVEWAY FROM STREET OR HIGHWAY
020	STR ENTR	BEFORE ENTERING ROADWAY, STRUCK PEDESTRIAN, ETC. ON SIDEWALK OR SHOULDER
021	NO DRVR	CAR RAN AWAY - NO DRIVER
022	PREV COL	STRUCK, OR WAS STRUCK BY, VEHICLE OR PEDESTRIAN IN PRIOR COLLISION BEFORE ACC. STABILIZED
023	STALLED	VEHICLE STALLED OR DISABLED
024	DRVR DEAD	DEAD BY UNASSOCIATED CAUSE
025	FATIGUE	FATIGUED, SLEEPY, ASLEEP
026	SUN	DRIVER BLINDED BY SUN
027	HDLGHTS	DRIVER BLINDED BY HEADLIGHTS
028	ILLNESS	PHYSICALLY ILL
029	THRU MED	VEHICLE CROSSED, PLUNGED OVER, OR THROUGH MEDIAN BARRIER
030	PURSUIT	PURSUING OR ATTEMPTING TO STOP A VEHICLE
031	PASSING	PASSING SITUATION
032	PRKOFFRD	VEHICLE PARKED BEYOND CURB OR SHOULDER
034	CROS MED	VEHICLE CROSSED EARTH OR GRASS MEDIAN
025	X N/SGNL	CROSSING AT INTERSECTION - NO TRAFFIC SIGNAL PRESENT
035	X W/ SGNL	CROSSING AT INTERSECTION - TRAFFIC SIGNAL PRESENT
030	DIAGONAL DEFINITION	CROSSING AI INTERSECTION - DIAGONALLI CROSSING REMMERN INMERCECTIONS
038	BIWN INT	CROSSING BEIWEEN INTERSECTIONS
030	W/TDAE_C	DRIVER 5 AILENIION DISIRACIED MAIKING DINNING DIDING ETG. ON SUGULDED MITTU TRAFETC
040	A/TRAF-S	WALKING, KONNING, KIDING, EIC., ON SHOULDER WITH INAFFIC Maiking punning piding fro on shoulder facing traffic
041	W/TRAF D	WALKING, KUNNING, KIDING, EIC., ON SHOULDER FREING IRRFFIC
042	A/TRAF-P	WALKING, RUNNING, RIDING, EIC., ON FRVEMENT WITH TRAFFIC
043	DIAVINDD	DIAVING IN STREET OF POAD
044	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
045	WORK ON	WORKING IN ROADWAY OR ALONG SHOULDER
046	W/ TRAFIC	NON-MOTORIST WALKING, RIDNING, RIDING, ETC. WITH TRAFFIC
047	A/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. FACING TRAFFIC
050	LAY ON RD	STANDING OR LYING IN ROADWAY
051	ENT OFFRD	ENTERING / STARTING IN TRAFFIC LANE FROM OFF ROAD
052	MERGING	MERGING
055	SPRAY	BLINDED BY WATER SPRAY

ACTION CODE TRANSLATION LIST

ACTION	SHORT	
CODE	DESCRIPTION	LONG DESCRIPTION
088 099	OTHER UNK	OTHER ACTION UNKNOWN ACTION

CAUSE CODE TRANSLATION LIST

COLLISION TYPE CODE TRANSLATION LIST

I O-1STOP FROM OPPOSITE DIRECTION - ONE STOPPED

FROM OPPOSITE DIRECTION-ALL OTHERS INCL. PARKING

J O-OTHER

CAUSE CODE	SHORT DESCRIPTION	LONG DESCRIPTION	COLL CODE	SHORT DESCRIPTION	LONG DESCRIPTION
00	NO CODE	NO CAUSE ASSOCIATED AT THIS LEVEL	&	OTH	MISCELLANEOUS
01	TOO-FAST	TOO FAST FOR CONDITIONS (NOT EXCEED POSTED SPEED)	-	BACK	BACKING
02	NO-YIELD	DID NOT YIELD RIGHT-OF-WAY	0	PED	PEDESTRIAN
03	PAS-STOP	PASSED STOP SIGN OR RED FLASHER	1	ANGL	ANGLE
04	DIS SIG	DISREGARDED TRAFFIC SIGNAL	2	HEAD	HEAD-ON
05	LEFT-CTR	DROVE LEFT OF CENTER ON TWO-WAY ROAD; STRADDLING	3	REAR	REAR-END
06	IMP-OVER	IMPROPER OVERTAKING	4	SS-M	SIDESWIPE - MEETING
07	TOO-CLOS	FOLLOWED TOO CLOSELY	5	SS-0	SIDESWIPE - OVERTAKING
08	IMP-TURN	MADE IMPROPER TURN	6	TURN	TURNING MOVEMENT
09	DRINKING	ALCOHOL OR DRUG INVOLVED	7	PARK	PARKING MANEUVER
10	OTHR-IMP	OTHER IMPROPER DRIVING	8	NCOL	NON-COLLISION
11	MECH-DEF	MECHANICAL DEFECT	9	FIX	FIXED OBJECT OR OTHER OBJECT
12	OTHER	OTHER (NOT IMPROPER DRIVING)			
13	IMP LN C	IMPROPER CHANGE OF TRAFFIC LANES			
14	DIS TCD	DISREGARDED OTHER TRAFFIC CONTROL DEVICE			
15	WRNG WAY	WRONG WAY ON ONE-WAY ROAD; WRONG SIDE DIVIDED RO			
16	FATIGUE	DRIVER DROWSY/FATIGUED/SLEEPY			
17	ILLNESS	PHYSICAL ILLNESS			
18	IN RDWY	NON-MOTORIST ILLEGALLY IN ROADWAY			
19	NT VISBL	NON-MOTORIST NOT VISIBLE; NON-REFLECTIVE CLOTHIN			
20	IMP PKNG	VEHICLE IMPROPERLY PARKED		CDACH WY	
21	DEF STER	DEFECTIVE STEERING MECHANISM		CRASH II	FE CODE TRANSLATION LIST
22	DEF BRKE	INADEQUATE OR NO BRAKES	CRASH	SHORT	
24	LOADSHFT	VEHICLE LOST LOAD OR LOAD SHIFTED	TYPE	DESCRIPTION	LONG DESCRIPTION
25	TIREFAIL	TIRE FAILURE		OVEDBUDN	
26	PHANTOM	PHANTOM / NON-CONTACT VEHICLE	&	NON COLL	OVERIORNED
27	INATTENT	INATTENTION	0	NON-COLL	MOTOR VEHICLE ON OTHER ROADWAY
28	NM INATT	NON-MOTORIST INATTENTION	1	OTH RDWI	MOTOR VEHICLE ON OTHER ROADWAY
29	F AVOID	FAILED TO AVOID VEHICLE AHEAD	2	PRKD MV	PARKED MOTOR VEHICLE
30	SPEED	DRIVING IN EXCESS OF POSTED SPEED	3	PED	PEDESTRIAN
31	RACING	SPEED RACING (PER PAR)	4	TRAIN	RAILWAY TRAIN
32	CARELESS	CARELESS DRIVING (PER PAR)	0	BIKE	PEDALCICLIST
33	RECKLESS	RECKLESS DRIVING (PER PAR)	/	ANIMAL DIV OD I	ANIMAL
34	AGGRESV	AGGRESSIVE DRIVING (PER PAR)	8	FIX OBJ	FIXED OBJECT
35	RD RAGE	ROAD RAGE (PER PAR)	9	OTH OBJ	OTHER OBJECT
40	VIEW OBS	VIEW OBSCURED	A	ANGL-STP	ENTERING AT ANGLE - ONE VEHICLE STOPPED
50	USED MDN	IMPROPER USE OF MEDIAN OR SHOULDER	В	ANGL-OTH	ENTERING AT ANGLE - ALL OTHERS
51	FAIL LN	FAILED TO MAINTAIN LANE	C	S-STRGHT	FROM SAME DIRECTION - BOTH GOING STRAIGHT
52	OFF RD	RAN OFF ROAD	ט -	S-ITURN	FROM SAME DIRECTION - ONE TURN, ONE STRAIGHT
			E	S-ISTOP	FROM SAME DIRECTION - ONE STOPPED
			F.	S-OTHER	FROM SAME DIRECTION-ALL OTHERS, INCLUDING PARKING
			G 	O-STRGHT	FROM OPPOSITE DIRECTION - BOTH GOING STRAIGHT
			H	() - (1 - 1) - 1	FROM OPPOSITE DIRECTION-ONE LEFT TURN ONE STRATCHT

DRIVER LICENSE CODE TRANSLATION LIST

DRIVER RESIDENCE CODE TRANSLATION LIST

LIC	SHORT		RES	SHORT	
CODE	DESC	LONG DESCRIPTION	CODE	DESC	LONG DESCRIPTION
0	NONE	NOT LICENSED (HAD NEVER BEEN LICENSED)	1	OR<25	OREGON RESIDENT WITHIN 25 MILE OF HOME
1	OR-Y	VALID OREGON LICENSE	2	OR>25	OREGON RESIDENT 25 OR MORE MILES FROM HOME
2	OTH-Y	VALUE LICENSE OTHER STATE OF COUNTRY	3	OR-?	OREGON RESIDENT - UNKNOWN DISTANCE FROM HOME
-		VIETD ETCHNOL, OTHER OTHER OR COONTRI	4	N-RES	NON-RESIDENT
3	SUSP	SUSPENDED/REVOKED	9	UNK	UNKNOWN IF OREGON RESIDENT

ERROR CODE TRANSLATION LIST

ERROR	SHORT

CODE	DESCRIPTION	FULL DESCRIPTION
000	NONE	NO ERROR
001	WIDE TRN	WIDE TURN
002	CUT CORN	CUT CORNER ON TURN
003	FAIL TRN	FAILED TO OBEY MANDATORY TRAFFIC TURN SIGNAL, SIGN OR LANE MARKINGS
004	L IN TRF	LEFT TURN IN FRONT OF ONCOMING TRAFFIC
005	L PROHIB	LEFT TURN WHERE PROHIBITED
006	FRM WRNG	TURNED FROM WRONG LANE
007	TO WRONG	TURNED INTO WRONG LANE
008	ILLEG U	U-TURNED ILLEGALLY
009	IMP STOP	IMPROPERLY STOPPED IN TRAFFIC LANE
010	IMP SIG	IMPROPER SIGNAL OR FAILURE TO SIGNAL
011	IMP BACK	BACKING IMPROPERLY (NOT PARKING)
012	IMP PARK	IMPROPERLY PARKED
013	UNPARK	IMPROPER START LEAVING PARKED POSITION
014	IMP STRT	IMPROPER START FROM STOPPED POSITION
015	IMP LGHT	IMPROPER OR NO LIGHTS (VEHICLE IN TRAFFIC)
016	INATTENT	INATTENTION (FAILURE TO DIM LIGHTS PRIOR TO 4/1/97)
017	UNSF VEH	DRIVING UNSAFE VEHICLE (NO OTHER ERROR APPARENT)
018	OTH PARK	ENTERING/EXITING PARKED POSITION W/ INSUFFICIENT CLEARANCE; OTHER IMPROPER PARKING MANEUVER
019	DIS DRIV	DISREGARDED OTHER DRIVER'S SIGNAL
020	DIS SGNL	DISREGARDED TRAFFIC SIGNAL
021	RAN STOP	DISREGARDED STOP SIGN OR FLASHING RED
022	DIS SIGN	DISREGARDED WARNING SIGN, FLARES OR FLASHING AMBER
023	DIS OFCR	DISREGARDED POLICE OFFICER OR FLAGMAN
024	DIS EMER	DISREGARDED SIREN OR WARNING OF EMERGENCY VEHICLE
025	DIS RR	DISREGARDED RR SIGNAL, RR SIGN, OR RR FLAGMAN
026	REAR-END	FAILED TO AVOID STOPPED OR PARKED VEHICLE AHEAD OTHER THAN SCHOOL BUS
027	BIKE ROW	DID NOT HAVE RIGHT-OF-WAY OVER PEDALCYCLIST
028	NO ROW	DID NOT HAVE RIGHT-OF-WAY
029	PED ROW	FAILED TO YIELD RIGHT-OF-WAY TO PEDESTRIAN
030	PAS CURV	PASSING ON A CURVE
031	PAS WRNG	PASSING ON THE WRONG SIDE
032	PAS TANG	PASSING ON STRAIGHT ROAD UNDER UNSAFE CONDITIONS
033	PAS X-WK	PASSED VEHICLE STOPPED AT CROSSWALK FOR PEDESTRIAN
034	PAS INTR	PASSING AT INTERSECTION
035	PAS HILL	PASSING ON CREST OF HILL
036	N/PAS ZN	PASSING IN "NO PASSING" ZONE
037	PAS TRAF	PASSING IN FRONT OF ONCOMING TRAFFIC
038	CUT-IN	CUTTING IN (TWO LANES - TWO WAY ONLY)
039	WRNGSIDE	DRIVING ON WRONG SIDE OF THE ROAD (2-WAY UNDIVIDED ROADWAYS)
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS

ERROR	SHORT	
CODE	DESCRIPTION	FULL DESCRIPTION
042	F/SLO MV	FAILED TO DECREASE SPEED FOR SLOWER MOVING VEHICLE
043	TOO CLOSE	FOLLOWING TOO CLOSELY (MUST BE ON OFFICER'S REPORT)
044	STRDL LN	STRADDLING OR DRIVING ON WRONG LANES
045	IMP CHG	IMPROPER CHANGE OF TRAFFIC LANES
046	WRNG WAY	WRONG WAY ON ONE-WAY ROADWAY; WRONG SIDE DIVIDED ROAD
047	BASCRULE	DRIVING TOO FAST FOR CONDITIONS (NOT EXCEEDING POSTED SPEED)
048	OPN DOOR	OPENED DOOR INTO ADJACENT TRAFFIC LANE
049	IMPEDING	IMPEDING TRAFFIC
050	SPEED	DRIVING IN EXCESS OF POSTED SPEED
051	RECKLESS	RECKLESS DRIVING (PER PAR)
052	CARELESS	CARELESS DRIVING (PER PAR)
053	RACING	SPEED RACING (PER PAR)
054	X N/SGNL	CROSSING AT INTERSECTION, NO TRAFFIC SIGNAL PRESENT
055	X W/SGNL	CROSSING AT INTERSECTION, TRAFFIC SIGNAL PRESENT
056	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
057	BTWN INT	CROSSING BETWEEN INTERSECTIONS
059	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
060	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
061	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
062	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
063	PLAYINRD	PLAYING IN STREET OR ROAD
064	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
065	WORK IN RD	WORKING IN ROADWAY OR ALONG SHOULDER
070	LAY ON RD	STANDING OR LYING IN ROADWAY
071	NM IMP USE	IMPROPER USE OF TRAFFIC LANE BY NON-MOTORIST
073	ELUDING	ELUDING / ATTEMPT TO ELUDE
079	F NEG CURV	FAILED TO NEGOTIATE A CURVE
080	FAIL LN	FAILED TO MAINTAIN LANE
081	OFF RD	RAN OFF ROAD
082	NO CLEAR	DRIVER MISJUDGED CLEARANCE
083	OVRSTEER	OVER-CORRECTING
084	NOT USED	CODE NOT IN USE
085	OVRLOAD	OVERLOADING OR IMPROPER LOADING OF VEHICLE WITH CARGO OR PASSENGERS
007		

097 UNA DIS TC UNABLE TO DETERMINE WHICH DRIVER DISREGARDED TRAFFIC CONTROL DEVICE

EVENT SHORT

CODE	DESCRIPTION	LONG DESCRIPTION
001	FEL/JUMP	OCCUPANT FELL, JUMPED OR WAS EJECTED FROM MOVING VEHICLE
002	INTERFER	PASSENGER INTERFERED WITH DRIVER
003	BUG INTF	ANIMAL OR INSECT IN VEHICLE INTERFERED WITH DRIVER
004	INDRCT PED	PEDESTRIAN INDIRECTLY INVOLVED (NOT STRUCK)
005	SUB-PED	"SUB-PED": PEDESTRIAN INJURED SUBSEQUENT TO COLLISION, ETC.
006	INDRCT BIK	PEDALCYCLIST INDIRECTLY INVOLVED (NOT STRUCK)
007	HITCHIKR	HITCHHIKER (SOLICITING A RIDE)
800	PSNGR TOW	PASSENGER OR NON-MOTORIST BEING TOWED OR PUSHED ON CONVEYANCE
009	ON/OFF V	GETTING ON/OFF STOPPED/PARKED VEHICLE (OCCUPANTS ONLY; MUST HAVE PHYSICAL CONTACT W/ VEHIC
010	SUB OTRN	OVERTURNED AFTER FIRST HARMFUL EVENT
011	MV PUSHD	VEHICLE BEING PUSHED
012	MV TOWED	VEHICLE TOWED OR HAD BEEN TOWING ANOTHER VEHICLE
013	FORCED	VEHICLE FORCED BY IMPACT INTO ANOTHER VEHICLE, PEDALCYCLIST OR PEDESTRIAN
014	SET MOTN	VEHICLE SET IN MOTION BY NON-DRIVER (CHILD RELEASED BRAKES, ETC.)
015	RR ROW	AT OR ON RAILROAD RIGHT-OF-WAY (NOT LIGHT RAIL)
016	LT RL ROW	AT OR ON LIGHT-RAIL RIGHT-OF-WAY
017	RR HIT V	TRAIN STRUCK VEHICLE
018	V HIT RR	VEHICLE STRUCK TRAIN
019	HIT RR CAR	VEHICLE STRUCK RAILROAD CAR ON ROADWAY
020	JACKNIFE	JACKKNIFE; TRAILER OR TOWED VEHICLE STRUCK TOWING VEHICLE
021	TRL OTRN	TRAILER OR TOWED VEHICLE OVERTURNED
022	CN BROKE	TRAILER CONNECTION BROKE
023	DETACH TRL	DETACHED TRAILING OBJECT STRUCK OTHER VEHICLE, NON-MOTORIST, OR OBJECT
024	V DOOR OPN	VEHICLE DOOR OPENED INTO ADJACENT TRAFFIC LANE
025	WHEELOFF	WHEEL CAME OFF
026	HOOD UP	HOOD FLEW UP
028	LOAD SHIFT	LOST LOAD, LOAD MOVED OR SHIFTED
029	TIREFAIL	TIRE FAILURE
030	PET	PET: CAT, DOG AND SIMILAR
031	LVSTOCK	STOCK: COW, CALF, BULL, STEER, SHEEP, ETC.
032	HORSE	HORSE, MULE, OR DONKEY
033	HRSE&RID	HURSE AND KIDER
034	GAME DEED EIV	WILD ANIMAL, GAME (INCLUDES BIRDS; NOI DEER OR ELR)
035	DEER ELR	DEER OK ELK, WAFIII
030	CIIIVEDT	ANIMAL-DRAWN VERICLE
038		COLVERT, OFENILATOR
030	DK METER	
040	CURR	CHER (ALSO NARROW SIDEWALKS ON REIDCES)
040	JIGGLE	UIGGLE BER OR TRAFFIC SNAKE FOR CHANNELIZATION
042	GDRL END	LEADING EDGE OF GUARDEALT
043	GARDRATI.	GIARD RALL (NOT METAL MEDIAN BARRIER)
044	BARRIER	MEDIAN BARRIER (BAISED OR METAL)
045	WAT.T.	RETAINING WALL OR TUNNEL WALL
046	BR RAIL	BRIDGE RAILING OR PARAPET (ON BRIDGE OR APPROACH)
047	BR ABUTMNT	BRIDGE ABUTMENT (INCLUDED "APPROACH END" THRU 2013)
048	BR COLMN	BRIDGE PILLAR OR COLUMN
049	BR GIRDR	BRIDGE GIRDER (HORIZONTAL BRIDGE STRUCTURE OVERHEAD)
050	ISLAND	TRAFFIC RAISED ISLAND
051	GORE	GORE
052	POLE UNK	POLE - TYPE UNKNOWN
053	POLE UTL	POLE - POWER OR TELEPHONE
054	ST LIGHT	POLE - STREET LIGHT ONLY
055	TRF SGNL	POLE - TRAFFIC SIGNAL AND PED SIGNAL ONLY
056	SGN BRDG	POLE - SIGN BRIDGE
057	STOPSIGN	STOP OR YIELD SIGN
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT

EVENT SHORT DESCRIPTION LONG DESCRIPTION CODE 060 MARKER DELINEATOR OR MARKER (REFLECTOR POSTS) 061 MAILBOX MAILBOX 062 TREE TREE, STUMP OR SHRUBS 063 VEG OHED TREE BRANCH OR OTHER VEGETATION OVERHEAD, ETC. 064 WIRE/CBL WIRE OR CABLE ACROSS OR OVER THE ROAD 065 TEMP SGN TEMPORARY SIGN OR BARRICADE IN ROAD, ETC. 066 PERM SGN PERMANENT SIGN OR BARRICADE IN/OFF ROAD 067 SLIDE SLIDES, FALLEN OR FALLING ROCKS 068 FRGN OBJ FOREIGN OBSTRUCTION/DEBRIS IN ROAD (NOT GRAVEL) 069 EQP WORK EQUIPMENT WORKING IN/OFF ROAD 070 OTH EOP OTHER EQUIPMENT IN OR OFF ROAD (INCLUDES PARKED TRAILER, BOAT) 071 MAIN EQP WRECKER, STREET SWEEPER, SNOW PLOW OR SANDING EQUIPMENT 072 OTHER WALL ROCK, BRICK OR OTHER SOLID WALL 073 IRRGL PVMT OTHER BUMP (NOT SPEED BUMP), POTHOLE OR PAVEMENT IRREGULARITY (PER PAR) 074 OVERHD OBJ OTHER OVERHEAD OBJECT (HIGHWAY SIGN, SIGNAL HEAD, ETC.); NOT BRIDGE 075 CAVE IN BRIDGE OR ROAD CAVE IN 076 HI WATER HIGH WATER 077 SNO BANK SNOW BANK 078 LO-HI EDGE LOW OR HIGH SHOULDER AT PAVEMENT EDGE 079 DITCH CUT SLOPE OR DITCH EMBANKMENT 080 OBJ FRM MV STRUCK BY ROCK OR OTHER OBJECT SET IN MOTION BY OTHER VEHICLE (INCL. LOST LOADS) 081 FLY-OBJ STRUCK BY ROCK OR OTHER MOVING OR FLYING OBJECT (NOT SET IN MOTION BY VEHICLE) 082 VEH HID VEHICLE OBSCURED VIEW 083 VEG HID VEGETATION OBSCURED VIEW 084 BLDG HID VIEW OBSCURED BY FENCE, SIGN, PHONE BOOTH, ETC. 085 WIND GUST WIND GUST 086 IMMERSED VEHICLE IMMERSED IN BODY OF WATER 087 FIRE/EXP FIRE OR EXPLOSION FENCE OR BUILDING, ETC. 088 FENC/BLD 089 OTHR CRASH CRASH RELATED TO ANOTHER SEPARATE CRASH 090 TO 1 SIDE TWO-WAY TRAFFIC ON DIVIDED ROADWAY ALL ROUTED TO ONE SIDE 091 BUILDING BUILDING OR OTHER STRUCTURE 092 PHANTOM OTHER (PHANTOM) NON-CONTACT VEHICLE 093 CELL PHONE CELL PHONE (ON PAR OR DRIVER IN USE) 094 VIOL GDL TEENAGE DRIVER IN VIOLATION OF GRADUATED LICENSE PGM 095 GUY WIRE GUY WIRE 096 BERM BERM (EARTHEN OR GRAVEL MOUND) 097 GRAVEL GRAVEL IN ROADWAY 098 ABR EDGE ABRUPT EDGE 099 CELL WTNSD CELL PHONE USE WITNESSED BY OTHER PARTICIPANT 100 UNK FIXD FIXED OBJECT, UNKNOWN TYPE. 101 OTHER OBJ NON-FIXED OBJECT, OTHER OR UNKNOWN TYPE 102 TEXTING TEXTING 103 WZ WORKER WORK ZONE WORKER 104 ON VEHICLE PASSENGER RIDING ON VEHICLE EXTERIOR 105 PEDAL PSGR PASSENGER RIDING ON PEDALCYCLE 106 MAN WHLCHR PEDESTRIAN IN NON-MOTORIZED WHEELCHAIR 107 MTR WHLCHR PEDESTRIAN IN MOTORIZED WHEELCHAIR 108 OFFICER LAW ENFORCEMENT / POLICE OFFICER 109 SUB-BIKE "SUB-BIKE": PEDALCYCLIST INJURED SUBSEQUENT TO COLLISION, ETC. 110 N-MTR NON-MOTORIST STRUCK VEHICLE 111 S CAR VS V STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM) STRUCK VEHICLE 112 V VS S CAR VEHICLE STRUCK STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM) 113 S CAR ROW AT OR ON STREET CAR OR TROLLEY RIGHT-OF-WAY 114 RR EQUIP VEHICLE STRUCK RAILROAD EQUIPMENT (NOT TRAIN) ON TRACKS 115 DISTRACTED BY NAVIGATION SYSTEM OR GPS DEVICE DSTRCT GPS 116 DSTRCT OTH DISTRACTED BY OTHER ELECTRONIC DEVICE

117 RR GATE RAIL CROSSING DROP-ARM GATE

EVENT SHORT

CODE	DESCRIPTION	LONG DESCRIPTION
118	EXPNSN JNT	EXPANSION JOINT
119	JERSEY BAR	JERSEY BARRIER
120	WIRE BAR	WIRE OR CABLE MEDIAN BARRIER
121	FENCE	FENCE
123	OBJ IN VEH	LOOSE OBJECT IN VEHICLE STRUCK OCCUPANT
124	SLIPPERY	SLIDING OR SWERVING DUE TO WET, ICY, SLIPPERY OR LOOSE SURFACE (NOT GRAVEL)
125	SHLDR	SHOULDER GAVE WAY
126	BOULDER	ROCK(S), BOULDER (NOT GRAVEL; NOT ROCK SLIDE)
127	LAND SLIDE	ROCK SLIDE OR LAND SLIDE
128	CURVE INV	CURVE PRESENT AT CRASH LOCATION
129	HILL INV	VERTICAL GRADE / HILL PRESENT AT CRASH LOCATION
130	CURVE HID	VIEW OBSCURED BY CURVE
131	HILL HID	VIEW OBSCURED BY VERTICAL GRADE / HILL
132	WINDOW HID	VIEW OBSCURED BY VEHICLE WINDOW CONDITIONS
133	SPRAY HID	VIEW OBSCURED BY WATER SPRAY
134	TORRENTIAL	TORRENTIAL RAIN (EXCEPTIONALLY HEAVY RAIN)

HIGHWAY COMPONENT TRANSLATION LIST

FUNC

CLASS DESCRIPTION

- 01 RURAL PRINCIPAL ARTERIAL INTERSTATE
- 02 RURAL PRINCIPAL ARTERIAL OTHER
- 06 RURAL MINOR ARTERIAL
- 07 RURAL MAJOR COLLECTOR
- 08 RURAL MINOR COLLECTOR
- 09 RURAL LOCAL
- 11 URBAN PRINCIPAL ARTERIAL INTERSTATE
- 12 URBAN PRINCIPAL ARTERIAL OTHER FREEWAYS AND EXP
- 14 URBAN PRINCIPAL ARTERIAL OTHER
- 16 URBAN MINOR ARTERIAL
- 17 URBAN MAJOR COLLECTOR
- 18 URBAN MINOR COLLECTOR
- 19 URBAN LOCAL
- 78 UNKNOWN RURAL SYSTEM
- 79 UNKNOWN RURAL NON-SYSTEM
- 98 UNKNOWN URBAN SYSTEM
- 99 UNKNOWN URBAN NON-SYSTEM

CODE DESCRIPTION

- 0 MAINLINE STATE HIGHWAY
- 1 COUPLET
- 3 FRONTAGE ROAD
- 6 CONNECTION
- 8 HIGHWAY OTHER

INJURY SEVERITY CODE TRANSLATION LIST

SHORT LONG DESCRIPTION CODE DESC 1 KILL FATAL INJURY 2 INJA INCAPACITATING INJURY - BLEEDING, BROKEN BONES 3 INJB NON-INCAPACITATING INJURY 4 INJC POSSIBLE INJURY - COMPLAINT OF PAIN 5 PRI DIED PRIOR TO CRASH 7 NO<5 NO INJURY - 0 TO 4 YEARS OF AGE

LIGHT CONDITION CODE TRANSLATION LIST

	SHORT	
CODE	DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	DAY	DAYLIGHT
2	DLIT	DARKNESS - WITH STREET LIGHTS
3	DARK	DARKNESS - NO STREET LIGHTS
4	DAWN	DAWN (TWILIGHT)
5	DUSK	DUSK (TWILIGHT)

MEDIAN TYPE CODE TRANSLATION LIST

MILEAGE TYPE CODE TRANSLATION LIST

LONG DESCRIPTION

REGULAR MILEAGE

TEMPORARY

OVERLAPPING

SPUR

CODE

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	SHORT	
CODE	DESC	LONG DESCRIPTION
0	NONE	NO MEDIAN
1	RSDMD	SOLID MEDIAN BARRIER
2	DIVMD	EARTH, GRASS OR PAVED MEDIAN

MOVEMENT TYPE CODE TRANSLATION LIST

	SHORT	
CODE	DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	STRGHT	STRAIGHT AHEAD
2	TURN-R	TURNING RIGHT
3	TURN-L	TURNING LEFT
4	U-TURN	MAKING A U-TURN
5	BACK	BACKING
6	STOP	STOPPED IN TRAFFIC
7	PRKD-P	PARKED - PROPERLY
8	PRKD-I	PARKED - IMPROPERLY

PARTICIPANT TYPE CODE TRANSLATION LIST

	SHORT	
CODE	DESC	LONG DESCRIPTION
0	OCC	UNKNOWN OCCUPANT TYPE
1	DRVR	DRIVER
2	PSNG	PASSENGER
3	PED	PEDESTRIAN
4	CONV	PEDESTRIAN USING A PEDESTRIAN CONVEYA
5	PTOW	PEDESTRIAN TOWING OR TRAILERING AN OB
6	BIKE	PEDALCYCLIST
7	BTOW	PEDALCYCLIST TOWING OR TRAILERING AN (
8	PRKD	OCCUPANT OF A PARKED MOTOR VEHICLE
9	UNK	UNKNOWN TYPE OF NON-MOTORIST

PEDESTRIAN LOCATION CODE TRANSLATION LIST

CODE LONG DESCRIPTION

00	AT INTERSECTION - NOT IN ROADWAY
01	AT INTERSECTION - INSIDE CROSSWALK
02	AT INTERSECTION - IN ROADWAY, OUTSIDE CROSSWALK
03	AT INTERSECTION - IN ROADWAY, XWALK AVAIL UNKNWN
04	NOT AT INTERSECTION - IN ROADWAY
05	NOT AT INTERSECTION - ON SHOULDER
06	NOT AT INTERSECTION - ON MEDIAN
07	NOT AT INTERSECTION - WITHIN TRAFFIC RIGHT-OF-WAY
08	NOT AT INTERSECTION - IN BIKE PATH OR PARKING LANE
09	NOT-AT INTERSECTION - ON SIDEWALK
10	OUTSIDE TRAFFICWAY BOUNDARIES
13	AT INTERSECTION - IN BIKE LANE
14	NOT AT INTERSECTION - IN BIKE LANE
15	NOT AT INTERSECTION - INSIDE MID-BLOCK CROSSWALK
16	NOT AT INTERSECTION - IN PARKING LANE

ROAD CHARACTER CODE TRANSLATION LIST

	SHORT		
CODE	DESC	LONG DESCRIPTION	
0	UNK	UNKNOWN	
1	INTER	INTERSECTION	
2	ALLEY	DRIVEWAY OR ALLEY	
3	STRGHT	STRAIGHT ROADWAY	
4	TRANS	TRANSITION	
5	CURVE	CURVE (HORIZONTAL CURVE)	
6	OPENAC	OPEN ACCESS OR TURNOUT	
7	GRADE	GRADE (VERTICAL CURVE)	
8	BRIDGE	BRIDGE STRUCTURE	
9	TUNNEL	TUNNEL	

TRAFFIC CONTROL DEVICE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
000	NONE	NO CONTROL
001	TRF SIGNAL	TRAFFIC SIGNALS
002	FLASHBCN-R	FLASHING BEACON - RED (STOP)
003	FLASHBCN-A	FLASHING BEACON - AMBER (SLOW)
004	STOP SIGN	STOP SIGN
005	SLOW SIGN	SLOW SIGN
006	REG-SIGN	REGULATORY SIGN
007	YIELD	YIELD SIGN
800	WARNING	WARNING SIGN
009	CURVE	CURVE SIGN
010	SCHL X-ING	SCHOOL CROSSING SIGN OR SPECIAL SIGNAL
011	OFCR/FLAG	POLICE OFFICER, FLAGMAN - SCHOOL PATROL
012	BRDG-GATE	BRIDGE GATE - BARRIER
013	TEMP-BARR	TEMPORARY BARRIER
014	NO-PASS-ZN	NO PASSING ZONE
015	ONE-WAY	ONE-WAY STREET
016	CHANNEL	CHANNELIZATION
017	MEDIAN BAR	MEDIAN BARRIER
018	PILOT CAR	PILOT CAR
019	SP PED SIG	SPECIAL PEDESTRIAN SIGNAL
020	X-BUCK	CROSSBUCK
021	THR-GN-SIG	THROUGH GREEN ARROW OR SIGNAL
022	L-GRN-SIG	LEFT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
023	R-GRN-SIG	RIGHT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
024	WIGWAG	WIGWAG OR FLASHING LIGHTS W/O DROP-ARM GATE
025	X-BUCK WRN	CROSSBUCK AND ADVANCE WARNING
026	WW W/ GATE	FLASHING LIGHTS WITH DROP-ARM GATES
027	OVRHD SGNL	SUPPLEMENTAL OVERHEAD SIGNAL (RR XING ONLY)
028	SP RR STOP	SPECIAL RR STOP SIGN
029	ILUM GRD X	ILLUMINATED GRADE CROSSING
037	RAMP METER	METERED RAMPS
038	RUMBLE STR	RUMBLE STRIP
090	L-TURN REF	LEFT TURN REFUGE (WHEN REFUGE IS INVOLVED)
091	R-TURN ALL	RIGHT TURN AT ALL TIMES SIGN, ETC.
092	EMR SGN/FL	EMERGENCY SIGNS OR FLARES
093	ACCEL LANE	ACCELERATION OR DECELERATION LANES
094	R-TURN PRO	RIGHT TURN PROHIBITED ON RED AFTER STOPPING

095BUS STPSGNBUS STOP SIGN AND RED LIGHTS099UNKNOWNUNKNOWN OR NOT DEFINITE

VEHICLE TYPE CODE TRANSLATION LIST

CODE SHORT DESC LONG DESCRIPTION

WEATHER CONDITION CODE TRANSLATION LIST

CLEAR

CLOUDY

RAIN

SLEET

FOG SNOW

DUST

SMOKE

ASH

CLR

CLD

SLT

FOG

SNOW DUST

SMOK

ASH

RAIN

000	NOT COLLECTED FOR DDG CDACHES	0
PDO	NOI COLLECTED FOR FDO CRASHES	1
PSNGR CAR	PASSENGER CAR, PICKUP, LIGHT DELIVERY, ETC.	2
BOBTAIL	TRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)	2
FARM TRCTR	FARM TRACTOR OR SELF-PROPELLED FARM EQUIPMENT	3
SEMI TOW	TRUCK TRACTOR WITH TRAILER/MOBILE HOME IN TOW	4
TRUCK	TRUCK WITH NON-DETACHABLE BED, PANEL, ETC.	5
MOPED	MOPED, MINIBIKE, SEATED MOTOR SCOOTER, MOTOR BIKE	7
SCHL BUS	SCHOOL BUS (INCLUDES VAN)	/
OTH BUS	OTHER BUS	8
MTRCYCLE	MOTORCYCLE, DIRT BIKE	9
OTHER	OTHER: FORKLIFT, BACKHOE, ETC.	
MOTRHOME	MOTORHOME	
TROLLEY	MOTORIZED STREET CAR/TROLLEY (NO RAILS/WIRES)	
ATV	ATV	
MTRSCTR	MOTORIZED SCOOTER (STANDING)	
	PDO PSNGR CAR BOBTAIL FARM TRCTR SEMI TOW TRUCK MOPED SCHL BUS OTH BUS MTRCYCLE OTHER MOTRHOME TROLLEY ATV MTRSCTR	PDONOT COLLECTED FOR PDO CRASHESPSNGR CARPASSENGER CAR, PICKUP, LIGHT DELIVERY, ETC.BOBTAILTRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)FARM TRCTRFARM TRACTOR OR SELF-PROPELLED FARM EQUIPMENTSEMI TOWTRUCK TRACTOR WITH TRAILER/MOBILE HOME IN TOWTRUCKTRUCK WITH NON-DETACHABLE BED, PANEL, ETC.MOPEDMOPED, MINIBIKE, SEATED MOTOR SCOOTER, MOTOR BIKESCHL BUSSCHOOL BUS (INCLUDES VAN)OTH BUSOTHER BUSMTRCYCLEMOTORCYCLE, DIRT BIKEOTHEROTHER: FORKLIFT, BACKHOE, ETC.MOTRHOMEMOTORHOMETROLLEYMOTORIZED STREET CAR/TROLLEY (NO RAILS/WIRES)ATVATVMTRSCTRMOTORIZED SCOOTER (STANDING)

15 SNOWMOBILE SNOWMOBILE

99 UNKNOWN UNKNOWN VEHICLE TYPE

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Marine Dr Lower Columbia River Hwy (092) & 3rd St January 1, 2011 through December 31, 2015

		NON-	PROPERTY										INTER-	
	FATAL	FATAL	DAMAGE	TOTAL	PEOPLE	PEOPLE		DRY	WET			INTER-	SECTION	OFF-
COLLISION TYPE	CRASHES	CRASHES	ONLY	CRASHES	KILLED	INJURED	TRUCKS	SURF	SURF	DAY	DARK	SECTION	RELATED	ROAD
YEAR: 2015														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2015 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
FINAL TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT CONTINUOUS SYSTEM CRASH LISTING

092 LOWER COLUMBIA RIVER

Marine Dr Lower Columbia River Hwy (092) & 3rd St January 1, 2011 through December 31, 2015

SER# INVES UNLOC	SD PR EAU TELGI	SW CODAT HRDAY LKLAT	E /TIME <i>/LONG</i>	COUNTY CITY URBAN AREA	RD# FC CMPT/MLC MILEPNT LRS	CONN # 5 FIRST STREET SECOND STREET INTERSECTION SEQ#	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CNTL	OFFRD WTHR RNDBT SURF DRVWY LIGH	CRASH TYP COLL TYP I SVRTY	SPCL USE TRLR QTY OWNER V# VEH TYPE	MOVE FROM TO	PRTC INJ P# TYPE SVRT	A S G H Y E X	S E LICNS X RES	PED LOC ERROR	ACTN EVENT	CAUSE
00107		T NT 02/2	12/2015	CIATCOD	1 1/		тмерр	CROSS	N	N CID	ANCI -OTH	01 NONE 0	CUDCUD						0.2
CITY		Thu	2P	ASTORIA	MN 0	MARINE DR	CN	CROSS	STOP SIG	N N DRY	ANGL-01H ANGL	PRVTE 0	S N					015	00
				ASTORIA UA	98.63	3rd st	04	0		N DAY	PDO	PSNGR CAR		01 DRVR NONE	71 N	Y-HTO M	028	000	02
No	46 11	25.95	-123	50 22.53	00920010	00S00 1										N-RES			
												02 NONE 0	STRGHT						
												PRVTE	W E					000	00
												PSNGR CAR		01 DRVR NONE	29 H	F OR-Y	000	000	00
																OR<25			

ACTION	SHORT	
CODE	DESCRIPTION	LONG DESCRIPTION
000	NONE	NO ACTION OR NON-WARRANTED
001	SKIDDED	SKIDDED
002	ON/OFF V	GETTING ON OR OFF STOPPED OR PARKED VEHICLE
003	LOAD OVR	OVERHANGING LOAD STRUCK ANOTHER VEHICLE, ETC.
006	SLOW DN	SLOWED DOWN
007	AVOIDING	AVOIDING MANEUVER
008	PAR PARK	PARALLEL PARKING
009	ANG PARK	ANGLE PARKING
010	INTERFERE	PASSENGER INTERFERING WITH DRIVER
011	STOPPED	STOPPED IN TRAFFIC NOT WAITING TO MAKE A LEFT TURN
012	STP/L TRN	STOPPED BECAUSE OF LEFT TURN SIGNAL OR WAITING, ETC.
013	STP TURN	STOPPED WHILE EXECUTING A TURN
014	EMR V PKD	EMERGENCY VEHICLE LEGALLY PARKED IN THE ROADWAY
015	GO A/STOP	PROCEED AFTER STOPPING FOR A STOP SIGN/FLASHING RED.
016	TRN A/RED	TURNED ON RED AFTER STOPPING
017	LOSTCTRL	LOST CONTROL OF VEHICLE
018	EXIT DWY	ENTERING STREET OR HIGHWAY FROM ALLEY OR DRIVEWAY
019	ENTR DWY	ENTERING ALLEY OR DRIVEWAY FROM STREET OR HIGHWAY
020	STR ENTR	BEFORE ENTERING ROADWAY, STRUCK PEDESTRIAN, ETC. ON SIDEWALK OR SHOULDER
021	NO DRVR	CAR RAN AWAY - NO DRIVER
022	PREV COL	STRUCK, OR WAS STRUCK BY, VEHICLE OR PEDESTRIAN IN PRIOR COLLISION BEFORE ACC. STABILIZED
023	STALLED	VEHICLE STALLED OR DISABLED
024	DRVR DEAD	DEAD BY UNASSOCIATED CAUSE
025	FATIGUE	FATIGUED, SLEEPY, ASLEEP
026	SUN	DRIVER BLINDED BY SUN
027	HDLGHTS	DRIVER BLINDED BY HEADLIGHTS
028	ILLNESS	PHYSICALLY ILL
029	THRU MED	VEHICLE CROSSED, PLUNGED OVER, OR THROUGH MEDIAN BARRIER
030	PURSUIT	PURSUING OR ATTEMPTING TO STOP A VEHICLE
031	PASSING	PASSING SITUATION
032	PRKOFFRD	VEHICLE PARKED BEYOND CURB OR SHOULDER
034	CROS MED	VEHICLE CROSSED EARTH OR GRASS MEDIAN
025	X N/SGNL	CROSSING AT INTERSECTION - NO TRAFFIC SIGNAL PRESENT
035	X W/ SGNL	CROSSING AT INTERSECTION - TRAFFIC SIGNAL PRESENT
030	DIAGONAL DEFINITION	CROSSING AI INTERSECTION - DIAGONALLI CROSSING REMMERN INMERCECTIONS
038	BIWN INT	CROSSING BEIWEEN INTERSECTIONS
030	W/TDAE_C	DRIVER 5 AILENIION DISIRACIED MAIKING DINNING DIDING ETG. ON SUGULDED MITTU TRAFETC
040	A/TRAF-S	WALKING, KONNING, KIDING, EIC., ON SHOULDER WITH INAFFIC Maiking punning piding fro on shoulder facing traffic
041	W/TRAF D	WALKING, KUNNING, KIDING, EIC., ON SHOULDER FREING IRRFFIC
042	A/TRAF-P	WALKING, RUNNING, RIDING, EIC., ON FRVEMENT WITH TRAFFIC
043	DIAVINDD	DIAVING IN STREET OF POAD
044	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
045	WORK ON	WORKING IN ROADWAY OR ALONG SHOULDER
046	W/ TRAFIC	NON-MOTORIST WALKING, RIDNING, RIDING, ETC. WITH TRAFFIC
047	A/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. FACING TRAFFIC
050	LAY ON RD	STANDING OR LYING IN ROADWAY
051	ENT OFFRD	ENTERING / STARTING IN TRAFFIC LANE FROM OFF ROAD
052	MERGING	MERGING
055	SPRAY	BLINDED BY WATER SPRAY

ACTION CODE TRANSLATION LIST

ACTION	SHORT	
CODE	DESCRIPTION	LONG DESCRIPTION
088 099	OTHER UNK	OTHER ACTION UNKNOWN ACTION

CAUSE CODE TRANSLATION LIST

COLLISION TYPE CODE TRANSLATION LIST

I O-1STOP FROM OPPOSITE DIRECTION - ONE STOPPED

FROM OPPOSITE DIRECTION-ALL OTHERS INCL. PARKING

J O-OTHER

CAUSE CODE	SHORT DESCRIPTION	LONG DESCRIPTION	COLL CODE	SHORT DESCRIPTION	LONG DESCRIPTION
00	NO CODE	NO CAUSE ASSOCIATED AT THIS LEVEL	&	OTH	MISCELLANEOUS
01	TOO-FAST	TOO FAST FOR CONDITIONS (NOT EXCEED POSTED SPEED)	-	BACK	BACKING
02	NO-YIELD	DID NOT YIELD RIGHT-OF-WAY	0	PED	PEDESTRIAN
03	PAS-STOP	PASSED STOP SIGN OR RED FLASHER	1	ANGL	ANGLE
04	DIS SIG	DISREGARDED TRAFFIC SIGNAL	2	HEAD	HEAD-ON
05	LEFT-CTR	DROVE LEFT OF CENTER ON TWO-WAY ROAD; STRADDLING	3	REAR	REAR-END
06	IMP-OVER	IMPROPER OVERTAKING	4	SS-M	SIDESWIPE - MEETING
07	TOO-CLOS	FOLLOWED TOO CLOSELY	5	SS-0	SIDESWIPE - OVERTAKING
08	IMP-TURN	MADE IMPROPER TURN	6	TURN	TURNING MOVEMENT
09	DRINKING	ALCOHOL OR DRUG INVOLVED	7	PARK	PARKING MANEUVER
10	OTHR-IMP	OTHER IMPROPER DRIVING	8	NCOL	NON-COLLISION
11	MECH-DEF	MECHANICAL DEFECT	9	FIX	FIXED OBJECT OR OTHER OBJECT
12	OTHER	OTHER (NOT IMPROPER DRIVING)			
13	IMP LN C	IMPROPER CHANGE OF TRAFFIC LANES			
14	DIS TCD	DISREGARDED OTHER TRAFFIC CONTROL DEVICE			
15	WRNG WAY	WRONG WAY ON ONE-WAY ROAD; WRONG SIDE DIVIDED RO			
16	FATIGUE	DRIVER DROWSY/FATIGUED/SLEEPY			
17	ILLNESS	PHYSICAL ILLNESS			
18	IN RDWY	NON-MOTORIST ILLEGALLY IN ROADWAY			
19	NT VISBL	NON-MOTORIST NOT VISIBLE; NON-REFLECTIVE CLOTHIN			
20	IMP PKNG	VEHICLE IMPROPERLY PARKED		CDACH WY	
21	DEF STER	DEFECTIVE STEERING MECHANISM		CRASH II	FE CODE TRANSLATION LIST
22	DEF BRKE	INADEQUATE OR NO BRAKES	CRASH	SHORT	
24	LOADSHFT	VEHICLE LOST LOAD OR LOAD SHIFTED	TYPE	DESCRIPTION	LONG DESCRIPTION
25	TIREFAIL	TIRE FAILURE		OVEDBUDN	
26	PHANTOM	PHANTOM / NON-CONTACT VEHICLE	&	NON COLL	OVERIORNED
27	INATTENT	INATTENTION	0	NON-COLL	MOTOR VEHICLE ON OTHER ROADWAY
28	NM INATT	NON-MOTORIST INATTENTION	1	OTH RDWI	MOTOR VEHICLE ON OTHER ROADWAY
29	F AVOID	FAILED TO AVOID VEHICLE AHEAD	2	PRKD MV	PARKED MOTOR VEHICLE
30	SPEED	DRIVING IN EXCESS OF POSTED SPEED	3	PED	PEDESTRIAN
31	RACING	SPEED RACING (PER PAR)	4	TRAIN	RAILWAY TRAIN
32	CARELESS	CARELESS DRIVING (PER PAR)	0	BIKE	PEDALCICLIST
33	RECKLESS	RECKLESS DRIVING (PER PAR)	/	ANIMAL DIV OD I	ANIMAL
34	AGGRESV	AGGRESSIVE DRIVING (PER PAR)	8	FIX OBJ	FIXED OBJECT
35	RD RAGE	ROAD RAGE (PER PAR)	9	OTH OBJ	OTHER OBJECT
40	VIEW OBS	VIEW OBSCURED	A	ANGL-STP	ENTERING AT ANGLE - ONE VEHICLE STOPPED
50	USED MDN	IMPROPER USE OF MEDIAN OR SHOULDER	В	ANGL-OTH	ENTERING AT ANGLE - ALL OTHERS
51	FAIL LN	FAILED TO MAINTAIN LANE	C	S-STRGHT	FROM SAME DIRECTION - BOTH GOING STRAIGHT
52	OFF RD	RAN OFF ROAD	ט -	S-ITURN	FROM SAME DIRECTION - ONE TURN, ONE STRAIGHT
			E	S-ISTOP	FROM SAME DIRECTION - ONE STOPPED
			F.	S-OTHER	FROM SAME DIRECTION-ALL OTHERS, INCLUDING PARKING
			G 	O-STRGHT	FROM OPPOSITE DIRECTION - BOTH GOING STRAIGHT
			H	() - 1 L - 'I' IIRN	FROM OPPOSITE DIRECTION-ONE LEFT TURN ONE STRATCHT

DRIVER LICENSE CODE TRANSLATION LIST

DRIVER RESIDENCE CODE TRANSLATION LIST

LIC	SHORT		RES	SHORT	
CODE	DESC	LONG DESCRIPTION	CODE	DESC	LONG DESCRIPTION
0	NONE	NOT LICENSED (HAD NEVER BEEN LICENSED)	1	OR<25	OREGON RESIDENT WITHIN 25 MILE OF HOME
1	OR-Y	VALID OREGON LICENSE	2	OR>25	OREGON RESIDENT 25 OR MORE MILES FROM HOME
2	OTH-Y	VALUE LICENSE OTHER STATE OF COUNTRY	3	OR-?	OREGON RESIDENT - UNKNOWN DISTANCE FROM HOME
-		VIETD ETCHNOL, OTHER OTHER OR COONTRI	4	N-RES	NON-RESIDENT
3	SUSP	SUSPENDED/REVOKED	9	UNK	UNKNOWN IF OREGON RESIDENT

ERROR CODE TRANSLATION LIST

ERROR	SHORT

CODE	DESCRIPTION	FULL DESCRIPTION
000	NONE	NO ERROR
001	WIDE TRN	WIDE TURN
002	CUT CORN	CUT CORNER ON TURN
003	FAIL TRN	FAILED TO OBEY MANDATORY TRAFFIC TURN SIGNAL, SIGN OR LANE MARKINGS
004	L IN TRF	LEFT TURN IN FRONT OF ONCOMING TRAFFIC
005	L PROHIB	LEFT TURN WHERE PROHIBITED
006	FRM WRNG	TURNED FROM WRONG LANE
007	TO WRONG	TURNED INTO WRONG LANE
008	ILLEG U	U-TURNED ILLEGALLY
009	IMP STOP	IMPROPERLY STOPPED IN TRAFFIC LANE
010	IMP SIG	IMPROPER SIGNAL OR FAILURE TO SIGNAL
011	IMP BACK	BACKING IMPROPERLY (NOT PARKING)
012	IMP PARK	IMPROPERLY PARKED
013	UNPARK	IMPROPER START LEAVING PARKED POSITION
014	IMP STRT	IMPROPER START FROM STOPPED POSITION
015	IMP LGHT	IMPROPER OR NO LIGHTS (VEHICLE IN TRAFFIC)
016	INATTENT	INATTENTION (FAILURE TO DIM LIGHTS PRIOR TO 4/1/97)
017	UNSF VEH	DRIVING UNSAFE VEHICLE (NO OTHER ERROR APPARENT)
018	OTH PARK	ENTERING/EXITING PARKED POSITION W/ INSUFFICIENT CLEARANCE; OTHER IMPROPER PARKING MANEUVER
019	DIS DRIV	DISREGARDED OTHER DRIVER'S SIGNAL
020	DIS SGNL	DISREGARDED TRAFFIC SIGNAL
021	RAN STOP	DISREGARDED STOP SIGN OR FLASHING RED
022	DIS SIGN	DISREGARDED WARNING SIGN, FLARES OR FLASHING AMBER
023	DIS OFCR	DISREGARDED POLICE OFFICER OR FLAGMAN
024	DIS EMER	DISREGARDED SIREN OR WARNING OF EMERGENCY VEHICLE
025	DIS RR	DISREGARDED RR SIGNAL, RR SIGN, OR RR FLAGMAN
026	REAR-END	FAILED TO AVOID STOPPED OR PARKED VEHICLE AHEAD OTHER THAN SCHOOL BUS
027	BIKE ROW	DID NOT HAVE RIGHT-OF-WAY OVER PEDALCYCLIST
028	NO ROW	DID NOT HAVE RIGHT-OF-WAY
029	PED ROW	FAILED TO YIELD RIGHT-OF-WAY TO PEDESTRIAN
030	PAS CURV	PASSING ON A CURVE
031	PAS WRNG	PASSING ON THE WRONG SIDE
032	PAS TANG	PASSING ON STRAIGHT ROAD UNDER UNSAFE CONDITIONS
033	PAS X-WK	PASSED VEHICLE STOPPED AT CROSSWALK FOR PEDESTRIAN
034	PAS INTR	PASSING AT INTERSECTION
035	PAS HILL	PASSING ON CREST OF HILL
036	N/PAS ZN	PASSING IN "NO PASSING" ZONE
037	PAS TRAF	PASSING IN FRONT OF ONCOMING TRAFFIC
038	CUT-IN	CUTTING IN (TWO LANES - TWO WAY ONLY)
039	WRNGSIDE	DRIVING ON WRONG SIDE OF THE ROAD (2-WAY UNDIVIDED ROADWAYS)
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS

ERROR	SHORT	
CODE	DESCRIPTION	FULL DESCRIPTION
042	F/SLO MV	FAILED TO DECREASE SPEED FOR SLOWER MOVING VEHICLE
043	TOO CLOSE	FOLLOWING TOO CLOSELY (MUST BE ON OFFICER'S REPORT)
044	STRDL LN	STRADDLING OR DRIVING ON WRONG LANES
045	IMP CHG	IMPROPER CHANGE OF TRAFFIC LANES
046	WRNG WAY	WRONG WAY ON ONE-WAY ROADWAY; WRONG SIDE DIVIDED ROAD
047	BASCRULE	DRIVING TOO FAST FOR CONDITIONS (NOT EXCEEDING POSTED SPEED)
048	OPN DOOR	OPENED DOOR INTO ADJACENT TRAFFIC LANE
049	IMPEDING	IMPEDING TRAFFIC
050	SPEED	DRIVING IN EXCESS OF POSTED SPEED
051	RECKLESS	RECKLESS DRIVING (PER PAR)
052	CARELESS	CARELESS DRIVING (PER PAR)
053	RACING	SPEED RACING (PER PAR)
054	X N/SGNL	CROSSING AT INTERSECTION, NO TRAFFIC SIGNAL PRESENT
055	X W/SGNL	CROSSING AT INTERSECTION, TRAFFIC SIGNAL PRESENT
056	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
057	BTWN INT	CROSSING BETWEEN INTERSECTIONS
059	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
060	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
061	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
062	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
063	PLAYINRD	PLAYING IN STREET OR ROAD
064	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
065	WORK IN RD	WORKING IN ROADWAY OR ALONG SHOULDER
070	LAY ON RD	STANDING OR LYING IN ROADWAY
071	NM IMP USE	IMPROPER USE OF TRAFFIC LANE BY NON-MOTORIST
073	ELUDING	ELUDING / ATTEMPT TO ELUDE
079	F NEG CURV	FAILED TO NEGOTIATE A CURVE
080	FAIL LN	FAILED TO MAINTAIN LANE
081	OFF RD	RAN OFF ROAD
082	NO CLEAR	DRIVER MISJUDGED CLEARANCE
083	OVRSTEER	OVER-CORRECTING
084	NOT USED	CODE NOT IN USE
085	OVRLOAD	OVERLOADING OR IMPROPER LOADING OF VEHICLE WITH CARGO OR PASSENGERS
007		

097 UNA DIS TC UNABLE TO DETERMINE WHICH DRIVER DISREGARDED TRAFFIC CONTROL DEVICE

EVENT SHORT

CODE	DESCRIPTION	LONG DESCRIPTION
001	FEL/JUMP	OCCUPANT FELL, JUMPED OR WAS EJECTED FROM MOVING VEHICLE
002	INTERFER	PASSENGER INTERFERED WITH DRIVER
003	BUG INTF	ANIMAL OR INSECT IN VEHICLE INTERFERED WITH DRIVER
004	INDRCT PED	PEDESTRIAN INDIRECTLY INVOLVED (NOT STRUCK)
005	SUB-PED	"SUB-PED": PEDESTRIAN INJURED SUBSEQUENT TO COLLISION, ETC.
006	INDRCT BIK	PEDALCYCLIST INDIRECTLY INVOLVED (NOT STRUCK)
007	HITCHIKR	HITCHHIKER (SOLICITING A RIDE)
800	PSNGR TOW	PASSENGER OR NON-MOTORIST BEING TOWED OR PUSHED ON CONVEYANCE
009	ON/OFF V	GETTING ON/OFF STOPPED/PARKED VEHICLE (OCCUPANTS ONLY; MUST HAVE PHYSICAL CONTACT W/ VEHIC
010	SUB OTRN	OVERTURNED AFTER FIRST HARMFUL EVENT
011	MV PUSHD	VEHICLE BEING PUSHED
012	MV TOWED	VEHICLE TOWED OR HAD BEEN TOWING ANOTHER VEHICLE
013	FORCED	VEHICLE FORCED BY IMPACT INTO ANOTHER VEHICLE, PEDALCYCLIST OR PEDESTRIAN
014	SET MOTN	VEHICLE SET IN MOTION BY NON-DRIVER (CHILD RELEASED BRAKES, ETC.)
015	RR ROW	AT OR ON RAILROAD RIGHT-OF-WAY (NOT LIGHT RAIL)
016	LT RL ROW	AT OR ON LIGHT-RAIL RIGHT-OF-WAY
017	RR HIT V	TRAIN STRUCK VEHICLE
018	V HIT RR	VEHICLE STRUCK TRAIN
019	HIT RR CAR	VEHICLE STRUCK RAILROAD CAR ON ROADWAY
020	JACKNIFE	JACKKNIFE; TRAILER OR TOWED VEHICLE STRUCK TOWING VEHICLE
021	TRL OTRN	TRAILER OR TOWED VEHICLE OVERTURNED
022	CN BROKE	TRAILER CONNECTION BROKE
023	DETACH TRL	DETACHED TRAILING OBJECT STRUCK OTHER VEHICLE, NON-MOTORIST, OR OBJECT
024	V DOOR OPN	VEHICLE DOOR OPENED INTO ADJACENT TRAFFIC LANE
025	WHEELOFF	WHEEL CAME OFF
026	HOOD UP	HOOD FLEW UP
028	LOAD SHIFT	LOST LOAD, LOAD MOVED OR SHIFTED
029	TIREFAIL	TIRE FAILURE
030	PET	PET: CAT, DOG AND SIMILAR
031	LVSTOCK	STOCK: COW, CALF, BULL, STEER, SHEEP, ETC.
032	HORSE	HORSE, MULE, OR DONKEY
033	HRSE&RID	HURSE AND KIDER
034	GAME DEED EIV	WILD ANIMAL, GAME (INCLUDES BIRDS; NOI DEER OR ELR)
035	DEER ELR	DEER OK ELK, WAFIII
030	CIIIVEDT	ANIMAL-DRAWN VERICLE
038		COLVERT, OFENILATOR
030	DK METER	
040	CURR	CHER (ALSO NARROW SIDEWALKS ON REIDCES)
040	JIGGLE	UIGGLE BER OR TRAFFIC SNAKE FOR CHANNELIZATION
042	GDRL END	LEADING EDGE OF GUARDEALT
043	GARDRATI.	GIARD RALL (NOT METAL MEDIAN BARRIER)
044	BARRIER	MEDIAN BARRIER (BAISED OR METAL)
045	WAT.T.	RETAINING WALL OR TUNNEL WALL
046	BR RAIL	BRIDGE RAILING OR PARAPET (ON BRIDGE OR APPROACH)
047	BR ABUTMNT	BRIDGE ABUTMENT (INCLUDED "APPROACH END" THRU 2013)
048	BR COLMN	BRIDGE PILLAR OR COLUMN
049	BR GIRDR	BRIDGE GIRDER (HORIZONTAL BRIDGE STRUCTURE OVERHEAD)
050	ISLAND	TRAFFIC RAISED ISLAND
051	GORE	GORE
052	POLE UNK	POLE - TYPE UNKNOWN
053	POLE UTL	POLE - POWER OR TELEPHONE
054	ST LIGHT	POLE - STREET LIGHT ONLY
055	TRF SGNL	POLE - TRAFFIC SIGNAL AND PED SIGNAL ONLY
056	SGN BRDG	POLE - SIGN BRIDGE
057	STOPSIGN	STOP OR YIELD SIGN
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT

EVENT SHORT DESCRIPTION LONG DESCRIPTION CODE 060 MARKER DELINEATOR OR MARKER (REFLECTOR POSTS) 061 MAILBOX MAILBOX 062 TREE TREE, STUMP OR SHRUBS 063 VEG OHED TREE BRANCH OR OTHER VEGETATION OVERHEAD, ETC. 064 WIRE/CBL WIRE OR CABLE ACROSS OR OVER THE ROAD 065 TEMP SGN TEMPORARY SIGN OR BARRICADE IN ROAD, ETC. 066 PERM SGN PERMANENT SIGN OR BARRICADE IN/OFF ROAD 067 SLIDE SLIDES, FALLEN OR FALLING ROCKS 068 FRGN OBJ FOREIGN OBSTRUCTION/DEBRIS IN ROAD (NOT GRAVEL) 069 EQP WORK EQUIPMENT WORKING IN/OFF ROAD 070 OTH EOP OTHER EQUIPMENT IN OR OFF ROAD (INCLUDES PARKED TRAILER, BOAT) 071 MAIN EQP WRECKER, STREET SWEEPER, SNOW PLOW OR SANDING EQUIPMENT 072 OTHER WALL ROCK, BRICK OR OTHER SOLID WALL 073 IRRGL PVMT OTHER BUMP (NOT SPEED BUMP), POTHOLE OR PAVEMENT IRREGULARITY (PER PAR) 074 OVERHD OBJ OTHER OVERHEAD OBJECT (HIGHWAY SIGN, SIGNAL HEAD, ETC.); NOT BRIDGE 075 CAVE IN BRIDGE OR ROAD CAVE IN 076 HI WATER HIGH WATER 077 SNO BANK SNOW BANK 078 LO-HI EDGE LOW OR HIGH SHOULDER AT PAVEMENT EDGE 079 DITCH CUT SLOPE OR DITCH EMBANKMENT 080 OBJ FRM MV STRUCK BY ROCK OR OTHER OBJECT SET IN MOTION BY OTHER VEHICLE (INCL. LOST LOADS) 081 FLY-OBJ STRUCK BY ROCK OR OTHER MOVING OR FLYING OBJECT (NOT SET IN MOTION BY VEHICLE) 082 VEH HID VEHICLE OBSCURED VIEW 083 VEG HID VEGETATION OBSCURED VIEW 084 BLDG HID VIEW OBSCURED BY FENCE, SIGN, PHONE BOOTH, ETC. 085 WIND GUST WIND GUST 086 IMMERSED VEHICLE IMMERSED IN BODY OF WATER 087 FIRE/EXP FIRE OR EXPLOSION FENCE OR BUILDING, ETC. 088 FENC/BLD 089 OTHR CRASH CRASH RELATED TO ANOTHER SEPARATE CRASH 090 TO 1 SIDE TWO-WAY TRAFFIC ON DIVIDED ROADWAY ALL ROUTED TO ONE SIDE 091 BUILDING BUILDING OR OTHER STRUCTURE 092 PHANTOM OTHER (PHANTOM) NON-CONTACT VEHICLE 093 CELL PHONE CELL PHONE (ON PAR OR DRIVER IN USE) 094 VIOL GDL TEENAGE DRIVER IN VIOLATION OF GRADUATED LICENSE PGM 095 GUY WIRE GUY WIRE 096 BERM BERM (EARTHEN OR GRAVEL MOUND) 097 GRAVEL GRAVEL IN ROADWAY 098 ABR EDGE ABRUPT EDGE 099 CELL WTNSD CELL PHONE USE WITNESSED BY OTHER PARTICIPANT 100 UNK FIXD FIXED OBJECT, UNKNOWN TYPE. 101 OTHER OBJ NON-FIXED OBJECT, OTHER OR UNKNOWN TYPE 102 TEXTING TEXTING 103 WZ WORKER WORK ZONE WORKER 104 ON VEHICLE PASSENGER RIDING ON VEHICLE EXTERIOR 105 PEDAL PSGR PASSENGER RIDING ON PEDALCYCLE 106 MAN WHLCHR PEDESTRIAN IN NON-MOTORIZED WHEELCHAIR 107 MTR WHLCHR PEDESTRIAN IN MOTORIZED WHEELCHAIR 108 OFFICER LAW ENFORCEMENT / POLICE OFFICER 109 SUB-BIKE "SUB-BIKE": PEDALCYCLIST INJURED SUBSEQUENT TO COLLISION, ETC. 110 N-MTR NON-MOTORIST STRUCK VEHICLE 111 S CAR VS V STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM) STRUCK VEHICLE 112 V VS S CAR VEHICLE STRUCK STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM) 113 S CAR ROW AT OR ON STREET CAR OR TROLLEY RIGHT-OF-WAY 114 RR EQUIP VEHICLE STRUCK RAILROAD EQUIPMENT (NOT TRAIN) ON TRACKS 115 DISTRACTED BY NAVIGATION SYSTEM OR GPS DEVICE DSTRCT GPS 116 DSTRCT OTH DISTRACTED BY OTHER ELECTRONIC DEVICE

117 RR GATE RAIL CROSSING DROP-ARM GATE

EVENT SHORT

CODE	DESCRIPTION	LONG DESCRIPTION
118	EXPNSN JNT	EXPANSION JOINT
119	JERSEY BAR	JERSEY BARRIER
120	WIRE BAR	WIRE OR CABLE MEDIAN BARRIER
121	FENCE	FENCE
123	OBJ IN VEH	LOOSE OBJECT IN VEHICLE STRUCK OCCUPANT
124	SLIPPERY	SLIDING OR SWERVING DUE TO WET, ICY, SLIPPERY OR LOOSE SURFACE (NOT GRAVEL)
125	SHLDR	SHOULDER GAVE WAY
126	BOULDER	ROCK(S), BOULDER (NOT GRAVEL; NOT ROCK SLIDE)
127	LAND SLIDE	ROCK SLIDE OR LAND SLIDE
128	CURVE INV	CURVE PRESENT AT CRASH LOCATION
129	HILL INV	VERTICAL GRADE / HILL PRESENT AT CRASH LOCATION
130	CURVE HID	VIEW OBSCURED BY CURVE
131	HILL HID	VIEW OBSCURED BY VERTICAL GRADE / HILL
132	WINDOW HID	VIEW OBSCURED BY VEHICLE WINDOW CONDITIONS
133	SPRAY HID	VIEW OBSCURED BY WATER SPRAY
134	TORRENTIAL	TORRENTIAL RAIN (EXCEPTIONALLY HEAVY RAIN)

HIGHWAY COMPONENT TRANSLATION LIST

FUNC

CLASS DESCRIPTION

- 01 RURAL PRINCIPAL ARTERIAL INTERSTATE
- 02 RURAL PRINCIPAL ARTERIAL OTHER
- 06 RURAL MINOR ARTERIAL
- 07 RURAL MAJOR COLLECTOR
- 08 RURAL MINOR COLLECTOR
- 09 RURAL LOCAL
- 11 URBAN PRINCIPAL ARTERIAL INTERSTATE
- 12 URBAN PRINCIPAL ARTERIAL OTHER FREEWAYS AND EXP
- 14 URBAN PRINCIPAL ARTERIAL OTHER
- 16 URBAN MINOR ARTERIAL
- 17 URBAN MAJOR COLLECTOR
- 18 URBAN MINOR COLLECTOR
- 19 URBAN LOCAL
- 78 UNKNOWN RURAL SYSTEM
- 79 UNKNOWN RURAL NON-SYSTEM
- 98 UNKNOWN URBAN SYSTEM
- 99 UNKNOWN URBAN NON-SYSTEM

CODE DESCRIPTION

- 0 MAINLINE STATE HIGHWAY
- 1 COUPLET
- 3 FRONTAGE ROAD
- 6 CONNECTION
- 8 HIGHWAY OTHER

INJURY SEVERITY CODE TRANSLATION LIST

SHORT LONG DESCRIPTION CODE DESC 1 KILL FATAL INJURY 2 INJA INCAPACITATING INJURY - BLEEDING, BROKEN BONES 3 INJB NON-INCAPACITATING INJURY 4 INJC POSSIBLE INJURY - COMPLAINT OF PAIN 5 PRI DIED PRIOR TO CRASH 7 NO<5 NO INJURY - 0 TO 4 YEARS OF AGE

LIGHT CONDITION CODE TRANSLATION LIST

	SHORT	
CODE	DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	DAY	DAYLIGHT
2	DLIT	DARKNESS - WITH STREET LIGHTS
3	DARK	DARKNESS - NO STREET LIGHTS
4	DAWN	DAWN (TWILIGHT)
5	DUSK	DUSK (TWILIGHT)

MEDIAN TYPE CODE TRANSLATION LIST

MILEAGE TYPE CODE TRANSLATION LIST

LONG DESCRIPTION

REGULAR MILEAGE

TEMPORARY

OVERLAPPING

SPUR

CODE

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	SHORT	
CODE	DESC	LONG DESCRIPTION
0	NONE	NO MEDIAN
1	RSDMD	SOLID MEDIAN BARRIER
2	DIVMD	EARTH, GRASS OR PAVED MEDIAN

MOVEMENT TYPE CODE TRANSLATION LIST

	SHORT	
CODE	DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	STRGHT	STRAIGHT AHEAD
2	TURN-R	TURNING RIGHT
3	TURN-L	TURNING LEFT
4	U-TURN	MAKING A U-TURN
5	BACK	BACKING
6	STOP	STOPPED IN TRAFFIC
7	PRKD-P	PARKED - PROPERLY
8	PRKD-I	PARKED - IMPROPERLY

PARTICIPANT TYPE CODE TRANSLATION LIST

	SHORT	
CODE	DESC	LONG DESCRIPTION
0	OCC	UNKNOWN OCCUPANT TYPE
1	DRVR	DRIVER
2	PSNG	PASSENGER
3	PED	PEDESTRIAN
4	CONV	PEDESTRIAN USING A PEDESTRIAN CONVEYA
5	PTOW	PEDESTRIAN TOWING OR TRAILERING AN OB
6	BIKE	PEDALCYCLIST
7	BTOW	PEDALCYCLIST TOWING OR TRAILERING AN (
8	PRKD	OCCUPANT OF A PARKED MOTOR VEHICLE
9	UNK	UNKNOWN TYPE OF NON-MOTORIST

PEDESTRIAN LOCATION CODE TRANSLATION LIST

CODE LONG DESCRIPTION

00	AT INTERSECTION - NOT IN ROADWAY
01	AT INTERSECTION - INSIDE CROSSWALK
02	AT INTERSECTION - IN ROADWAY, OUTSIDE CROSSWALK
03	AT INTERSECTION - IN ROADWAY, XWALK AVAIL UNKNWN
04	NOT AT INTERSECTION - IN ROADWAY
05	NOT AT INTERSECTION - ON SHOULDER
06	NOT AT INTERSECTION - ON MEDIAN
07	NOT AT INTERSECTION - WITHIN TRAFFIC RIGHT-OF-WAY
08	NOT AT INTERSECTION - IN BIKE PATH OR PARKING LANE
09	NOT-AT INTERSECTION - ON SIDEWALK
10	OUTSIDE TRAFFICWAY BOUNDARIES
13	AT INTERSECTION - IN BIKE LANE
14	NOT AT INTERSECTION - IN BIKE LANE
15	NOT AT INTERSECTION - INSIDE MID-BLOCK CROSSWALK
16	NOT AT INTERSECTION - IN PARKING LANE

ROAD CHARACTER CODE TRANSLATION LIST

	SHORT		
CODE	DESC	LONG DESCRIPTION	
0	UNK	UNKNOWN	
1	INTER	INTERSECTION	
2	ALLEY	DRIVEWAY OR ALLEY	
3	STRGHT	STRAIGHT ROADWAY	
4	TRANS	TRANSITION	
5	CURVE	CURVE (HORIZONTAL CURVE)	
6	OPENAC	OPEN ACCESS OR TURNOUT	
7	GRADE	GRADE (VERTICAL CURVE)	
8	BRIDGE	BRIDGE STRUCTURE	
9	TUNNEL	TUNNEL	

TRAFFIC CONTROL DEVICE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
000	NONE	NO CONTROL
001	TRF SIGNAL	TRAFFIC SIGNALS
002	FLASHBCN-R	FLASHING BEACON - RED (STOP)
003	FLASHBCN-A	FLASHING BEACON - AMBER (SLOW)
004	STOP SIGN	STOP SIGN
005	SLOW SIGN	SLOW SIGN
006	REG-SIGN	REGULATORY SIGN
007	YIELD	YIELD SIGN
800	WARNING	WARNING SIGN
009	CURVE	CURVE SIGN
010	SCHL X-ING	SCHOOL CROSSING SIGN OR SPECIAL SIGNAL
011	OFCR/FLAG	POLICE OFFICER, FLAGMAN - SCHOOL PATROL
012	BRDG-GATE	BRIDGE GATE - BARRIER
013	TEMP-BARR	TEMPORARY BARRIER
014	NO-PASS-ZN	NO PASSING ZONE
015	ONE-WAY	ONE-WAY STREET
016	CHANNEL	CHANNELIZATION
017	MEDIAN BAR	MEDIAN BARRIER
018	PILOT CAR	PILOT CAR
019	SP PED SIG	SPECIAL PEDESTRIAN SIGNAL
020	X-BUCK	CROSSBUCK
021	THR-GN-SIG	THROUGH GREEN ARROW OR SIGNAL
022	L-GRN-SIG	LEFT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
023	R-GRN-SIG	RIGHT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
024	WIGWAG	WIGWAG OR FLASHING LIGHTS W/O DROP-ARM GATE
025	X-BUCK WRN	CROSSBUCK AND ADVANCE WARNING
026	WW W/ GATE	FLASHING LIGHTS WITH DROP-ARM GATES
027	OVRHD SGNL	SUPPLEMENTAL OVERHEAD SIGNAL (RR XING ONLY)
028	SP RR STOP	SPECIAL RR STOP SIGN
029	ILUM GRD X	ILLUMINATED GRADE CROSSING
037	RAMP METER	METERED RAMPS
038	RUMBLE STR	RUMBLE STRIP
090	L-TURN REF	LEFT TURN REFUGE (WHEN REFUGE IS INVOLVED)
091	R-TURN ALL	RIGHT TURN AT ALL TIMES SIGN, ETC.
092	EMR SGN/FL	EMERGENCY SIGNS OR FLARES
093	ACCEL LANE	ACCELERATION OR DECELERATION LANES
094	R-TURN PRO	RIGHT TURN PROHIBITED ON RED AFTER STOPPING

095BUS STPSGNBUS STOP SIGN AND RED LIGHTS099UNKNOWNUNKNOWN OR NOT DEFINITE

VEHICLE TYPE CODE TRANSLATION LIST

CODE SHORT DESC LONG DESCRIPTION

WEATHER CONDITION CODE TRANSLATION LIST

CLEAR

CLOUDY

RAIN

SLEET

FOG SNOW

DUST

SMOKE

ASH

CLR

CLD

SLT

FOG

SNOW DUST

SMOK

ASH

RAIN

000	NOT COLLECTED FOR DDG CDACHES	0
PDO	NOI COLLECTED FOR FDO CRASHES	1
PSNGR CAR	PASSENGER CAR, PICKUP, LIGHT DELIVERY, ETC.	2
BOBTAIL	TRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)	2
FARM TRCTR	FARM TRACTOR OR SELF-PROPELLED FARM EQUIPMENT	3
SEMI TOW	TRUCK TRACTOR WITH TRAILER/MOBILE HOME IN TOW	4
TRUCK	TRUCK WITH NON-DETACHABLE BED, PANEL, ETC.	5
MOPED	MOPED, MINIBIKE, SEATED MOTOR SCOOTER, MOTOR BIKE	7
SCHL BUS	SCHOOL BUS (INCLUDES VAN)	/
OTH BUS	OTHER BUS	8
MTRCYCLE	MOTORCYCLE, DIRT BIKE	9
OTHER	OTHER: FORKLIFT, BACKHOE, ETC.	
MOTRHOME	MOTORHOME	
TROLLEY	MOTORIZED STREET CAR/TROLLEY (NO RAILS/WIRES)	
ATV	ATV	
MTRSCTR	MOTORIZED SCOOTER (STANDING)	
	PDO PSNGR CAR BOBTAIL FARM TRCTR SEMI TOW TRUCK MOPED SCHL BUS OTH BUS MTRCYCLE OTHER MOTRHOME TROLLEY ATV MTRSCTR	PDONOT COLLECTED FOR PDO CRASHESPSNGR CARPASSENGER CAR, PICKUP, LIGHT DELIVERY, ETC.BOBTAILTRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)FARM TRCTRFARM TRACTOR OR SELF-PROPELLED FARM EQUIPMENTSEMI TOWTRUCK TRACTOR WITH TRAILER/MOBILE HOME IN TOWTRUCKTRUCK WITH NON-DETACHABLE BED, PANEL, ETC.MOPEDMOPED, MINIBIKE, SEATED MOTOR SCOOTER, MOTOR BIKESCHL BUSSCHOOL BUS (INCLUDES VAN)OTH BUSOTHER BUSMTRCYCLEMOTORCYCLE, DIRT BIKEOTHEROTHER: FORKLIFT, BACKHOE, ETC.MOTRHOMEMOTORHOMETROLLEYMOTORIZED STREET CAR/TROLLEY (NO RAILS/WIRES)ATVATVMTRSCTRMOTORIZED SCOOTER (STANDING)

15 SNOWMOBILE SNOWMOBILE

99 UNKNOWN UNKNOWN VEHICLE TYPE

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Marine Dr Lower Columbia River Hwy (092) 600 feet West of 2nd St (excludes intersection at 2nd St) January 1, 2011 through December 31, 2015

	FATAI	NON- FATAI	PROPERTY DAMAGE	ΤΟΤΑΙ	PFOPI F	PFOPI F		DRY	WFT			INTER-	INTER- SECTION	OFF-
COLLISION TYPE	CRASHES	CRASHES	ONLY	CRASHES	KILLED	INJURED	TRUCKS	SURF	SURF	DAY	DARK	SECTION	RELATED	ROAD
YEAR: 2015														
REAR-END	0	1	0	1	0	4	0	1	0	1	0	0	0	0
2015 TOTAL	0	1	0	1	0	4	0	1	0	1	0	0	0	0
YEAR: 2014														
REAR-END	0	0	2	2	0	0	0	2	0	2	0	0	0	0
2014 TOTAL	0	0	2	2	0	0	0	2	0	2	0	0	0	0
YEAR: 2011														
REAR-END	0	0	1	1	0	0	0	1	0	1	0	0	0	0
2011 TOTAL	0	0	1	1	0	0	0	1	0	1	0	0	0	0
FINAL TOTAL	0	1	3	4	0	4	0	4	0	4	0	0	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT CONTINUOUS SYSTEM CRASH LISTING

092 LOWER COLUMBIA RIVER

Marine Dr Lower Columbia River Hwy (092) 600 feet West of 2nd St (excludes intersection at 2nd St) January 1, 2011 through December 31, 2015

S P SER# E INVEST E UNLOC? D	D R S W A U C O DATE L G H R DAY/TIME C S L K LAT/LONG	COUNTY CITY URBAN AREA	RD# FC CMPT/MLG MILEPNT LRS	CONN # FIRST STREET SECOND STREET INTERSECTION SE	Q#	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CNTL	OFFRD WTHR RNDBT SURF DRVWY LIGH	CRASH TY COLL TYP T SVRTY	SPCL USE P TRLR QTY OWNER V# VEH TYPE	MOVE FROM TO	PRTC INJ P# TYPE SVRTY	A S G E LICN E X RES	S PED LOC ERROR	ACTI	N EVENT	CAUSE
00495 N NO RPT	N N 10/04/2014 Sat 1P	1 CLATSOP ASTORIA	1 14 MN 0	MARINE DR		STRGHT W	(NONE)	N UNKNOWN	N CLR N DRY	S-1STOP REAR	01 NONE 0 PRVTE	STRGHT E W				000	092	29 00
No 46	6 11 26.06 -123	ASTORIA UA 50 27.81	98.73 00920010	2ND ST 0S00	1	04	(04)		N DAY	PDO	PSNGR CAR		01 DRVR NONE	47 F OR-Y OR<2	026 5	000		29
											02 NONE 0 PRVTE	STOP E W				011	092	00
											PSNGR CAR		01 DRVR NONE	85 M OR-Y OR<2	000	000		00
00268 N NONE	N N N N 06/23/2014 Mon 11A	CLATSOP ASTORIA	1 14 MN 0	MARINE DR		ALLEY S	(NONE)	N NONE	N CLR N DRY	S-1STOP REAR	01 NONE 0 PRVTE	STRGHT W E				000	092	07 00
No 46	6 11 26.13 -123	ASTORIA UA 50 30.41	98.76 00920010	2ND ST 0S00	1	05	(04)		N DAY	PDO	PSNGR CAR		01 DRVR NONE	58 F OR-Y OR<2	026 5	000		07
											02 NONE 0 PRVTE	STOP W E				011	092	00
											PSNGR CAR		01 DRVR NONE	78 F OR-Y OR<2	000 5	000		00
00357 N CITY	NNNN 07/17/2015 Fri 7P	5 CLATSOP ASTORIA	1 14 MN 0	MARINE DR		ALLEY W	(NONE)	N NONE	N CLR N DRY	S-1STOP REAR	01 NONE 0 PRVTE	STRGHT E W				000	004 004	27,07 00
No 46	6 11 26.13 -123	ASTORIA UA 50 30.41	98.76 00920010	2ND ST 0S00	1	04	(04)		N DAY	INJ	PSNGR CAR		01 DRVR INJC	17 M OR-Y OR<2	016,043 5	038		27,07
											02 NONE 0	STOP	02 PSNG INJC	20 M	000	000		00
											PRVTE	E W				012		00
											PSNGR CAR		01 DRVR INJC	25 F OR-Y OR<2	000 5	000		00
													02 PSNG INJC	30 F	000	000		00
00456 N CITY	N N 10/09/2013 Sun 4P	ASTORIA	1 14 MN 0	MARINE DR		ALLEY W	(NONE)	N UNKNOWN	N CLR N DRY	S-1STOP REAR	01 NONE 0 PRVTE	STRGHT E W				000		07,27 00
No 46	6 11 26.17 -123	ASTORIA UA 50 33.01	98.79 00920010	2ND ST 0S00	1	04	(04)		N DAY	PDO	PSNGR CAR		01 DRVR NONE	17 M OR-Y OR<2	043,016 5	038		07,27
											02 NONE 0	STOP F W				010		0.0
											PSNGR CAR	Li W	01 DRVR NONE	68 F OR-Y OR<2	000	000		00

ACTION	SHORT	
CODE	DESCRIPTION	LONG DESCRIPTION
000	NONE	NO ACTION OR NON-WARRANTED
001	SKIDDED	SKIDDED
002	ON/OFF V	GETTING ON OR OFF STOPPED OR PARKED VEHICLE
003	LOAD OVR	OVERHANGING LOAD STRUCK ANOTHER VEHICLE, ETC.
006	SLOW DN	SLOWED DOWN
007	AVOIDING	AVOIDING MANEUVER
008	PAR PARK	PARALLEL PARKING
009	ANG PARK	ANGLE PARKING
010	INTERFERE	PASSENGER INTERFERING WITH DRIVER
011	STOPPED	STOPPED IN TRAFFIC NOT WAITING TO MAKE A LEFT TURN
012	STP/L TRN	STOPPED BECAUSE OF LEFT TURN SIGNAL OR WAITING, ETC.
013	STP TURN	STOPPED WHILE EXECUTING A TURN
014	EMR V PKD	EMERGENCY VEHICLE LEGALLY PARKED IN THE ROADWAY
015	GO A/STOP	PROCEED AFTER STOPPING FOR A STOP SIGN/FLASHING RED.
016	TRN A/RED	TURNED ON RED AFTER STOPPING
017	LOSTCTRL	LOST CONTROL OF VEHICLE
018	EXIT DWY	ENTERING STREET OR HIGHWAY FROM ALLEY OR DRIVEWAY
019	ENTR DWY	ENTERING ALLEY OR DRIVEWAY FROM STREET OR HIGHWAY
020	STR ENTR	BEFORE ENTERING ROADWAY, STRUCK PEDESTRIAN, ETC. ON SIDEWALK OR SHOULDER
021	NO DRVR	CAR RAN AWAY - NO DRIVER
022	PREV COL	STRUCK, OR WAS STRUCK BY, VEHICLE OR PEDESTRIAN IN PRIOR COLLISION BEFORE ACC. STABILIZED
023	STALLED	VEHICLE STALLED OR DISABLED
024	DRVR DEAD	DEAD BY UNASSOCIATED CAUSE
025	FATIGUE	FATIGUED, SLEEPY, ASLEEP
026	SUN	DRIVER BLINDED BY SUN
027	HDLGHTS	DRIVER BLINDED BY HEADLIGHTS
028	ILLNESS	PHYSICALLY ILL
029	THRU MED	VEHICLE CROSSED, PLUNGED OVER, OR THROUGH MEDIAN BARRIER
030	PURSUIT	PURSUING OR ATTEMPTING TO STOP A VEHICLE
031	PASSING	PASSING SITUATION
032	PRKOFFRD	VEHICLE PARKED BEYOND CURB OR SHOULDER
034	CROS MED	VEHICLE CROSSED EARTH OR GRASS MEDIAN
025	X N/SGNL	CROSSING AT INTERSECTION - NO TRAFFIC SIGNAL PRESENT
035	X W/ SGNL	CROSSING AT INTERSECTION - TRAFFIC SIGNAL PRESENT
030	DIAGONAL DEFINITION	CROSSING AI INTERSECTION - DIAGONALLI CROSSING REMMERN INMERCECTIONS
038	BIWN INT	CROSSING BEIWEEN INTERSECTIONS
030	W/TDAE_C	DRIVER 5 AILENIION DISIRACIED MAIKING DINNING DIDING ETG. ON SUGULDED MITTU TRAFETC
040	A/TRAF-S	WALKING, KONNING, KIDING, EIC., ON SHOULDER WITH INAFFIC Maiking punning piding fro on shoulder facing traffic
041	W/TRAF D	WALKING, KUNNING, KIDING, EIC., ON SHOULDER FREING IRRFFIC
042	A/TRAF-P	WALKING, RUNNING, RIDING, EIC., ON FRVEMENT WITH TRAFFIC
043	DIAVINDD	DIAVING IN STREET OF POAD
044	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
045	WORK ON	WORKING IN ROADWAY OR ALONG SHOULDER
046	W/ TRAFIC	NON-MOTORIST WALKING, RIDNING, RIDING, ETC. WITH TRAFFIC
047	A/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. FACING TRAFFIC
050	LAY ON RD	STANDING OR LYING IN ROADWAY
051	ENT OFFRD	ENTERING / STARTING IN TRAFFIC LANE FROM OFF ROAD
052	MERGING	MERGING
055	SPRAY	BLINDED BY WATER SPRAY

ACTION CODE TRANSLATION LIST

ACTION	SHORT	
CODE	DESCRIPTION	LONG DESCRIPTION
088 099	OTHER UNK	OTHER ACTION UNKNOWN ACTION

CAUSE CODE TRANSLATION LIST

COLLISION TYPE CODE TRANSLATION LIST

I O-1STOP FROM OPPOSITE DIRECTION - ONE STOPPED

FROM OPPOSITE DIRECTION-ALL OTHERS INCL. PARKING

J O-OTHER

CAUSE CODE	SHORT DESCRIPTION	LONG DESCRIPTION	COLL CODE	SHORT DESCRIPTION	LONG DESCRIPTION
00	NO CODE	NO CAUSE ASSOCIATED AT THIS LEVEL	&	OTH	MISCELLANEOUS
01	TOO-FAST	TOO FAST FOR CONDITIONS (NOT EXCEED POSTED SPEED)	-	BACK	BACKING
02	NO-YIELD	DID NOT YIELD RIGHT-OF-WAY	0	PED	PEDESTRIAN
03	PAS-STOP	PASSED STOP SIGN OR RED FLASHER	1	ANGL	ANGLE
04	DIS SIG	DISREGARDED TRAFFIC SIGNAL	2	HEAD	HEAD-ON
05	LEFT-CTR	DROVE LEFT OF CENTER ON TWO-WAY ROAD; STRADDLING	3	REAR	REAR-END
06	IMP-OVER	IMPROPER OVERTAKING	4	SS-M	SIDESWIPE - MEETING
07	TOO-CLOS	FOLLOWED TOO CLOSELY	5	SS-0	SIDESWIPE - OVERTAKING
08	IMP-TURN	MADE IMPROPER TURN	6	TURN	TURNING MOVEMENT
09	DRINKING	ALCOHOL OR DRUG INVOLVED	7	PARK	PARKING MANEUVER
10	OTHR-IMP	OTHER IMPROPER DRIVING	8	NCOL	NON-COLLISION
11	MECH-DEF	MECHANICAL DEFECT	9	FIX	FIXED OBJECT OR OTHER OBJECT
12	OTHER	OTHER (NOT IMPROPER DRIVING)			
13	IMP LN C	IMPROPER CHANGE OF TRAFFIC LANES			
14	DIS TCD	DISREGARDED OTHER TRAFFIC CONTROL DEVICE			
15	WRNG WAY	WRONG WAY ON ONE-WAY ROAD; WRONG SIDE DIVIDED RO			
16	FATIGUE	DRIVER DROWSY/FATIGUED/SLEEPY			
17	ILLNESS	PHYSICAL ILLNESS			
18	IN RDWY	NON-MOTORIST ILLEGALLY IN ROADWAY			
19	NT VISBL	NON-MOTORIST NOT VISIBLE; NON-REFLECTIVE CLOTHIN			
20	IMP PKNG	VEHICLE IMPROPERLY PARKED		CDACH WY	
21	DEF STER	DEFECTIVE STEERING MECHANISM		CRASH II	FE CODE TRANSLATION LIST
22	DEF BRKE	INADEQUATE OR NO BRAKES	CRASH	SHORT	
24	LOADSHFT	VEHICLE LOST LOAD OR LOAD SHIFTED	TYPE	DESCRIPTION	LONG DESCRIPTION
25	TIREFAIL	TIRE FAILURE		OVEDBUDN	
26	PHANTOM	PHANTOM / NON-CONTACT VEHICLE	&	NON COLL	OVERIORNED
27	INATTENT	INATTENTION	0	NON-COLL	MOTOR VEHICLE ON OTHER ROADWAY
28	NM INATT	NON-MOTORIST INATTENTION	1	OTH RDWI	MOTOR VEHICLE ON OTHER ROADWAY
29	F AVOID	FAILED TO AVOID VEHICLE AHEAD	2	PRKD MV	PARKED MOTOR VEHICLE
30	SPEED	DRIVING IN EXCESS OF POSTED SPEED	3	PED	PEDESTRIAN
31	RACING	SPEED RACING (PER PAR)	4	TRAIN	RAILWAY TRAIN
32	CARELESS	CARELESS DRIVING (PER PAR)	0	BIKE	PEDALCICLIST
33	RECKLESS	RECKLESS DRIVING (PER PAR)	/	ANIMAL DIV OD I	ANIMAL
34	AGGRESV	AGGRESSIVE DRIVING (PER PAR)	8	FIX OBJ	FIXED OBJECT
35	RD RAGE	ROAD RAGE (PER PAR)	9	OTH OBJ	OTHER OBJECT
40	VIEW OBS	VIEW OBSCURED	A	ANGL-STP	ENTERING AT ANGLE - ONE VEHICLE STOPPED
50	USED MDN	IMPROPER USE OF MEDIAN OR SHOULDER	В	ANGL-OTH	ENTERING AT ANGLE - ALL OTHERS
51	FAIL LN	FAILED TO MAINTAIN LANE	C	S-STRGHT	FROM SAME DIRECTION - BOTH GOING STRAIGHT
52	OFF RD	RAN OFF ROAD	ט -	S-ITURN	FROM SAME DIRECTION - ONE TURN, ONE STRAIGHT
			E	S-ISTOP	FROM SAME DIRECTION - ONE STOPPED
			F.	S-OTHER	FROM SAME DIRECTION-ALL OTHERS, INCLUDING PARKING
			G 	O-STRGHT	FROM OPPOSITE DIRECTION - BOTH GOING STRAIGHT
			H	() - (1 - 1) - 1	FROM OPPOSITE DIRECTION-ONE LEFT TURN ONE STRATCHT

DRIVER LICENSE CODE TRANSLATION LIST

DRIVER RESIDENCE CODE TRANSLATION LIST

LIC	SHORT		RES	SHORT	
CODE	DESC	LONG DESCRIPTION	CODE	DESC	LONG DESCRIPTION
0	NONE	NOT LICENSED (HAD NEVER BEEN LICENSED)	1	OR<25	OREGON RESIDENT WITHIN 25 MILE OF HOME
1	OR-Y	VALID OREGON LICENSE	2	OR>25	OREGON RESIDENT 25 OR MORE MILES FROM HOME
2	OTH-Y	VALUE LICENSE OTHER STATE OF COUNTRY	3	OR-?	OREGON RESIDENT - UNKNOWN DISTANCE FROM HOME
-		VIETD ETCHNOL, OTHER OTHER OR COONTRI	4	N-RES	NON-RESIDENT
3	SUSP	SUSPENDED/REVOKED	9	UNK	UNKNOWN IF OREGON RESIDENT

ERROR CODE TRANSLATION LIST

ERROR	SHORT

CODE	DESCRIPTION	FULL DESCRIPTION
000	NONE	NO ERROR
001	WIDE TRN	WIDE TURN
002	CUT CORN	CUT CORNER ON TURN
003	FAIL TRN	FAILED TO OBEY MANDATORY TRAFFIC TURN SIGNAL, SIGN OR LANE MARKINGS
004	L IN TRF	LEFT TURN IN FRONT OF ONCOMING TRAFFIC
005	L PROHIB	LEFT TURN WHERE PROHIBITED
006	FRM WRNG	TURNED FROM WRONG LANE
007	TO WRONG	TURNED INTO WRONG LANE
008	ILLEG U	U-TURNED ILLEGALLY
009	IMP STOP	IMPROPERLY STOPPED IN TRAFFIC LANE
010	IMP SIG	IMPROPER SIGNAL OR FAILURE TO SIGNAL
011	IMP BACK	BACKING IMPROPERLY (NOT PARKING)
012	IMP PARK	IMPROPERLY PARKED
013	UNPARK	IMPROPER START LEAVING PARKED POSITION
014	IMP STRT	IMPROPER START FROM STOPPED POSITION
015	IMP LGHT	IMPROPER OR NO LIGHTS (VEHICLE IN TRAFFIC)
016	INATTENT	INATTENTION (FAILURE TO DIM LIGHTS PRIOR TO 4/1/97)
017	UNSF VEH	DRIVING UNSAFE VEHICLE (NO OTHER ERROR APPARENT)
018	OTH PARK	ENTERING/EXITING PARKED POSITION W/ INSUFFICIENT CLEARANCE; OTHER IMPROPER PARKING MANEUVER
019	DIS DRIV	DISREGARDED OTHER DRIVER'S SIGNAL
020	DIS SGNL	DISREGARDED TRAFFIC SIGNAL
021	RAN STOP	DISREGARDED STOP SIGN OR FLASHING RED
022	DIS SIGN	DISREGARDED WARNING SIGN, FLARES OR FLASHING AMBER
023	DIS OFCR	DISREGARDED POLICE OFFICER OR FLAGMAN
024	DIS EMER	DISREGARDED SIREN OR WARNING OF EMERGENCY VEHICLE
025	DIS RR	DISREGARDED RR SIGNAL, RR SIGN, OR RR FLAGMAN
026	REAR-END	FAILED TO AVOID STOPPED OR PARKED VEHICLE AHEAD OTHER THAN SCHOOL BUS
027	BIKE ROW	DID NOT HAVE RIGHT-OF-WAY OVER PEDALCYCLIST
028	NO ROW	DID NOT HAVE RIGHT-OF-WAY
029	PED ROW	FAILED TO YIELD RIGHT-OF-WAY TO PEDESTRIAN
030	PAS CURV	PASSING ON A CURVE
031	PAS WRNG	PASSING ON THE WRONG SIDE
032	PAS TANG	PASSING ON STRAIGHT ROAD UNDER UNSAFE CONDITIONS
033	PAS X-WK	PASSED VEHICLE STOPPED AT CROSSWALK FOR PEDESTRIAN
034	PAS INTR	PASSING AT INTERSECTION
035	PAS HILL	PASSING ON CREST OF HILL
036	N/PAS ZN	PASSING IN "NO PASSING" ZONE
037	PAS TRAF	PASSING IN FRONT OF ONCOMING TRAFFIC
038	CUT-IN	CUTTING IN (TWO LANES - TWO WAY ONLY)
039	WRNGSIDE	DRIVING ON WRONG SIDE OF THE ROAD (2-WAY UNDIVIDED ROADWAYS)
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS

ERROR	SHORT	
CODE	DESCRIPTION	FULL DESCRIPTION
042	F/SLO MV	FAILED TO DECREASE SPEED FOR SLOWER MOVING VEHICLE
043	TOO CLOSE	FOLLOWING TOO CLOSELY (MUST BE ON OFFICER'S REPORT)
044	STRDL LN	STRADDLING OR DRIVING ON WRONG LANES
045	IMP CHG	IMPROPER CHANGE OF TRAFFIC LANES
046	WRNG WAY	WRONG WAY ON ONE-WAY ROADWAY; WRONG SIDE DIVIDED ROAD
047	BASCRULE	DRIVING TOO FAST FOR CONDITIONS (NOT EXCEEDING POSTED SPEED)
048	OPN DOOR	OPENED DOOR INTO ADJACENT TRAFFIC LANE
049	IMPEDING	IMPEDING TRAFFIC
050	SPEED	DRIVING IN EXCESS OF POSTED SPEED
051	RECKLESS	RECKLESS DRIVING (PER PAR)
052	CARELESS	CARELESS DRIVING (PER PAR)
053	RACING	SPEED RACING (PER PAR)
054	X N/SGNL	CROSSING AT INTERSECTION, NO TRAFFIC SIGNAL PRESENT
055	X W/SGNL	CROSSING AT INTERSECTION, TRAFFIC SIGNAL PRESENT
056	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
057	BTWN INT	CROSSING BETWEEN INTERSECTIONS
059	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
060	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
061	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
062	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
063	PLAYINRD	PLAYING IN STREET OR ROAD
064	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
065	WORK IN RD	WORKING IN ROADWAY OR ALONG SHOULDER
070	LAY ON RD	STANDING OR LYING IN ROADWAY
071	NM IMP USE	IMPROPER USE OF TRAFFIC LANE BY NON-MOTORIST
073	ELUDING	ELUDING / ATTEMPT TO ELUDE
079	F NEG CURV	FAILED TO NEGOTIATE A CURVE
080	FAIL LN	FAILED TO MAINTAIN LANE
081	OFF RD	RAN OFF ROAD
082	NO CLEAR	DRIVER MISJUDGED CLEARANCE
083	OVRSTEER	OVER-CORRECTING
084	NOT USED	CODE NOT IN USE
085	OVRLOAD	OVERLOADING OR IMPROPER LOADING OF VEHICLE WITH CARGO OR PASSENGERS
007		

097 UNA DIS TC UNABLE TO DETERMINE WHICH DRIVER DISREGARDED TRAFFIC CONTROL DEVICE

EVENT SHORT

CODE	DESCRIPTION	LONG DESCRIPTION
001	FEL/JUMP	OCCUPANT FELL, JUMPED OR WAS EJECTED FROM MOVING VEHICLE
002	INTERFER	PASSENGER INTERFERED WITH DRIVER
003	BUG INTF	ANIMAL OR INSECT IN VEHICLE INTERFERED WITH DRIVER
004	INDRCT PED	PEDESTRIAN INDIRECTLY INVOLVED (NOT STRUCK)
005	SUB-PED	"SUB-PED": PEDESTRIAN INJURED SUBSEQUENT TO COLLISION, ETC.
006	INDRCT BIK	PEDALCYCLIST INDIRECTLY INVOLVED (NOT STRUCK)
007	HITCHIKR	HITCHHIKER (SOLICITING A RIDE)
800	PSNGR TOW	PASSENGER OR NON-MOTORIST BEING TOWED OR PUSHED ON CONVEYANCE
009	ON/OFF V	GETTING ON/OFF STOPPED/PARKED VEHICLE (OCCUPANTS ONLY; MUST HAVE PHYSICAL CONTACT W/ VEHIC
010	SUB OTRN	OVERTURNED AFTER FIRST HARMFUL EVENT
011	MV PUSHD	VEHICLE BEING PUSHED
012	MV TOWED	VEHICLE TOWED OR HAD BEEN TOWING ANOTHER VEHICLE
013	FORCED	VEHICLE FORCED BY IMPACT INTO ANOTHER VEHICLE, PEDALCYCLIST OR PEDESTRIAN
014	SET MOTN	VEHICLE SET IN MOTION BY NON-DRIVER (CHILD RELEASED BRAKES, ETC.)
015	RR ROW	AT OR ON RAILROAD RIGHT-OF-WAY (NOT LIGHT RAIL)
016	LT RL ROW	AT OR ON LIGHT-RAIL RIGHT-OF-WAY
017	RR HIT V	TRAIN STRUCK VEHICLE
018	V HIT RR	VEHICLE STRUCK TRAIN
019	HIT RR CAR	VEHICLE STRUCK RAILROAD CAR ON ROADWAY
020	JACKNIFE	JACKKNIFE; TRAILER OR TOWED VEHICLE STRUCK TOWING VEHICLE
021	TRL OTRN	TRAILER OR TOWED VEHICLE OVERTURNED
022	CN BROKE	TRAILER CONNECTION BROKE
023	DETACH TRL	DETACHED TRAILING OBJECT STRUCK OTHER VEHICLE, NON-MOTORIST, OR OBJECT
024	V DOOR OPN	VEHICLE DOOR OPENED INTO ADJACENT TRAFFIC LANE
025	WHEELOFF	WHEEL CAME OFF
026	HOOD UP	HOOD FLEW UP
028	LOAD SHIFT	LOST LOAD, LOAD MOVED OR SHIFTED
029	TIREFAIL	TIRE FAILURE
030	PET	PET: CAT, DOG AND SIMILAR
031	LVSTOCK	STOCK: COW, CALF, BULL, STEER, SHEEP, ETC.
032	HORSE	HORSE, MULE, OR DONKEY
033	HRSE&RID	HORSE AND RIDER
034	GAME DEED DIV	WILD ANIMAL, GAME (INCLUDES BIRDS; NOT DEER OR ELK)
035	DEEK ELK	DEER OK ELK, WAPITI
020	ANML VEH	ANIMAL-DRAWN VEHICLE
020	CULVERT AUTENIIA UNI	COLVERI, OPEN LOW OR HIGH MANHOLE
020	ALENUAIN DV METED	IMFACT ATTENDATOR
0.3.9	CUIDD	FARAING MEIER Chide (Algo Nadow Sidewalks on Editors)
040	TICCIE	CORE ALSO NARROW SIDEWALKS ON BRIDGES
041	CDRI END	IFADING FREE OF INAPPENT
042	CARDRAIL	LEADING EDGE OF GORDIALIN RADDIED)
043	BADDIED	GUARD KALL (NOT HELAL HEDLAN DARTAL)
045	WAT.T.	REFAINING WALL OR TINNEL WALL
046	BR RATI.	BRIDGE BILLING OR PARAPET (ON BRIDGE OR APPROACH)
047	BR ABUTMNT	BRIDGE ARHIMMENT (INCLIDED "APPROACH END" THRU 2013)
048	BR COLMN	BRIDGE PILLAR OR COLUMN
049	BR GIRDR	BRIDGE GIRDER (HORIZONTAL BRIDGE STRUCTURE OVERHEAD)
050	ISLAND	TRAFFIC RAISED ISLAND
051	GORE	GORE
052	POLE UNK	POLE - TYPE UNKNOWN
053	POLE UTL	POLE - POWER OR TELEPHONE
054	ST LIGHT	POLE - STREET LIGHT ONLY
055	TRF SGNL	POLE - TRAFFIC SIGNAL AND PED SIGNAL ONLY
056	SGN BRDG	POLE - SIGN BRIDGE
057	STOPSIGN	STOP OR YIELD SIGN
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT

EVENT SHORT DESCRIPTION LONG DESCRIPTION CODE 060 MARKER DELINEATOR OR MARKER (REFLECTOR POSTS) 061 MAILBOX MAILBOX 062 TREE TREE, STUMP OR SHRUBS 063 VEG OHED TREE BRANCH OR OTHER VEGETATION OVERHEAD, ETC. 064 WIRE/CBL WIRE OR CABLE ACROSS OR OVER THE ROAD 065 TEMP SGN TEMPORARY SIGN OR BARRICADE IN ROAD, ETC. 066 PERM SGN PERMANENT SIGN OR BARRICADE IN/OFF ROAD 067 SLIDE SLIDES, FALLEN OR FALLING ROCKS 068 FRGN OBJ FOREIGN OBSTRUCTION/DEBRIS IN ROAD (NOT GRAVEL) 069 EQP WORK EQUIPMENT WORKING IN/OFF ROAD 070 OTH EOP OTHER EQUIPMENT IN OR OFF ROAD (INCLUDES PARKED TRAILER, BOAT) 071 MAIN EQP WRECKER, STREET SWEEPER, SNOW PLOW OR SANDING EQUIPMENT 072 OTHER WALL ROCK, BRICK OR OTHER SOLID WALL 073 IRRGL PVMT OTHER BUMP (NOT SPEED BUMP), POTHOLE OR PAVEMENT IRREGULARITY (PER PAR) 074 OVERHD OBJ OTHER OVERHEAD OBJECT (HIGHWAY SIGN, SIGNAL HEAD, ETC.); NOT BRIDGE 075 CAVE IN BRIDGE OR ROAD CAVE IN 076 HI WATER HIGH WATER 077 SNO BANK SNOW BANK 078 LO-HI EDGE LOW OR HIGH SHOULDER AT PAVEMENT EDGE 079 DITCH CUT SLOPE OR DITCH EMBANKMENT 080 OBJ FRM MV STRUCK BY ROCK OR OTHER OBJECT SET IN MOTION BY OTHER VEHICLE (INCL. LOST LOADS) 081 FLY-OBJ STRUCK BY ROCK OR OTHER MOVING OR FLYING OBJECT (NOT SET IN MOTION BY VEHICLE) 082 VEH HID VEHICLE OBSCURED VIEW 083 VEG HID VEGETATION OBSCURED VIEW 084 BLDG HID VIEW OBSCURED BY FENCE, SIGN, PHONE BOOTH, ETC. 085 WIND GUST WIND GUST 086 IMMERSED VEHICLE IMMERSED IN BODY OF WATER 087 FIRE/EXP FIRE OR EXPLOSION FENCE OR BUILDING, ETC. 088 FENC/BLD 089 OTHR CRASH CRASH RELATED TO ANOTHER SEPARATE CRASH 090 TO 1 SIDE TWO-WAY TRAFFIC ON DIVIDED ROADWAY ALL ROUTED TO ONE SIDE 091 BUILDING BUILDING OR OTHER STRUCTURE 092 PHANTOM OTHER (PHANTOM) NON-CONTACT VEHICLE 093 CELL PHONE CELL PHONE (ON PAR OR DRIVER IN USE) 094 VIOL GDL TEENAGE DRIVER IN VIOLATION OF GRADUATED LICENSE PGM 095 GUY WIRE GUY WIRE 096 BERM BERM (EARTHEN OR GRAVEL MOUND) 097 GRAVEL GRAVEL IN ROADWAY 098 ABR EDGE ABRUPT EDGE 099 CELL WTNSD CELL PHONE USE WITNESSED BY OTHER PARTICIPANT 100 UNK FIXD FIXED OBJECT, UNKNOWN TYPE. 101 OTHER OBJ NON-FIXED OBJECT, OTHER OR UNKNOWN TYPE 102 TEXTING TEXTING 103 WZ WORKER WORK ZONE WORKER 104 ON VEHICLE PASSENGER RIDING ON VEHICLE EXTERIOR 105 PEDAL PSGR PASSENGER RIDING ON PEDALCYCLE 106 MAN WHLCHR PEDESTRIAN IN NON-MOTORIZED WHEELCHAIR 107 MTR WHLCHR PEDESTRIAN IN MOTORIZED WHEELCHAIR 108 OFFICER LAW ENFORCEMENT / POLICE OFFICER 109 SUB-BIKE "SUB-BIKE": PEDALCYCLIST INJURED SUBSEQUENT TO COLLISION, ETC. 110 N-MTR NON-MOTORIST STRUCK VEHICLE 111 S CAR VS V STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM) STRUCK VEHICLE 112 V VS S CAR VEHICLE STRUCK STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM) 113 S CAR ROW AT OR ON STREET CAR OR TROLLEY RIGHT-OF-WAY 114 RR EQUIP VEHICLE STRUCK RAILROAD EQUIPMENT (NOT TRAIN) ON TRACKS 115 DISTRACTED BY NAVIGATION SYSTEM OR GPS DEVICE DSTRCT GPS 116 DSTRCT OTH DISTRACTED BY OTHER ELECTRONIC DEVICE

117 RR GATE RAIL CROSSING DROP-ARM GATE

EVENT SHORT

CODE	DESCRIPTION	LONG DESCRIPTION
118	EXPNSN JNT	EXPANSION JOINT
119	JERSEY BAR	JERSEY BARRIER
120	WIRE BAR	WIRE OR CABLE MEDIAN BARRIER
121	FENCE	FENCE
123	OBJ IN VEH	LOOSE OBJECT IN VEHICLE STRUCK OCCUPANT
124	SLIPPERY	SLIDING OR SWERVING DUE TO WET, ICY, SLIPPERY OR LOOSE SURFACE (NOT GRAVEL)
125	SHLDR	SHOULDER GAVE WAY
126	BOULDER	ROCK(S), BOULDER (NOT GRAVEL; NOT ROCK SLIDE)
127	LAND SLIDE	ROCK SLIDE OR LAND SLIDE
128	CURVE INV	CURVE PRESENT AT CRASH LOCATION
129	HILL INV	VERTICAL GRADE / HILL PRESENT AT CRASH LOCATION
130	CURVE HID	VIEW OBSCURED BY CURVE
131	HILL HID	VIEW OBSCURED BY VERTICAL GRADE / HILL
132	WINDOW HID	VIEW OBSCURED BY VEHICLE WINDOW CONDITIONS
133	SPRAY HID	VIEW OBSCURED BY WATER SPRAY
134	TORRENTIAL	TORRENTIAL RAIN (EXCEPTIONALLY HEAVY RAIN)
HIGHWAY COMPONENT TRANSLATION LIST

FUNC

CLASS DESCRIPTION

- 01 RURAL PRINCIPAL ARTERIAL INTERSTATE
- 02 RURAL PRINCIPAL ARTERIAL OTHER
- 06 RURAL MINOR ARTERIAL
- 07 RURAL MAJOR COLLECTOR
- 08 RURAL MINOR COLLECTOR
- 09 RURAL LOCAL
- 11 URBAN PRINCIPAL ARTERIAL INTERSTATE
- 12 URBAN PRINCIPAL ARTERIAL OTHER FREEWAYS AND EXP
- 14 URBAN PRINCIPAL ARTERIAL OTHER
- 16 URBAN MINOR ARTERIAL
- 17 URBAN MAJOR COLLECTOR
- 18 URBAN MINOR COLLECTOR
- 19 URBAN LOCAL

- 78 UNKNOWN RURAL SYSTEM
- 79 UNKNOWN RURAL NON-SYSTEM
- 98 UNKNOWN URBAN SYSTEM
- 99 UNKNOWN URBAN NON-SYSTEM

CODE DESCRIPTION

- 0 MAINLINE STATE HIGHWAY
- 1 COUPLET
- 3 FRONTAGE ROAD
- 6 CONNECTION
- 8 HIGHWAY OTHER

INJURY SEVERITY CODE TRANSLATION LIST

SHORT LONG DESCRIPTION CODE DESC 1 KILL FATAL INJURY 2 INJA INCAPACITATING INJURY - BLEEDING, BROKEN BONES 3 INJB NON-INCAPACITATING INJURY 4 INJC POSSIBLE INJURY - COMPLAINT OF PAIN 5 PRI DIED PRIOR TO CRASH 7 NO<5 NO INJURY - 0 TO 4 YEARS OF AGE

LIGHT CONDITION CODE TRANSLATION LIST

	SHORT	
CODE	DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	DAY	DAYLIGHT
2	DLIT	DARKNESS - WITH STREET LIGHTS
3	DARK	DARKNESS - NO STREET LIGHTS
4	DAWN	DAWN (TWILIGHT)
5	DUSK	DUSK (TWILIGHT)

MEDIAN TYPE CODE TRANSLATION LIST

MILEAGE TYPE CODE TRANSLATION LIST

LONG DESCRIPTION

REGULAR MILEAGE

TEMPORARY

OVERLAPPING

SPUR

CODE

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	SHORT	
CODE	DESC	LONG DESCRIPTION
0	NONE	NO MEDIAN
1	RSDMD	SOLID MEDIAN BARRIER
2	DIVMD	EARTH, GRASS OR PAVED MEDIAN

MOVEMENT TYPE CODE TRANSLATION LIST

	SHORT	
CODE	DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	STRGHT	STRAIGHT AHEAD
2	TURN-R	TURNING RIGHT
3	TURN-L	TURNING LEFT
4	U-TURN	MAKING A U-TURN
5	BACK	BACKING
6	STOP	STOPPED IN TRAFFIC
7	PRKD-P	PARKED - PROPERLY
8	PRKD-I	PARKED - IMPROPERLY

PARTICIPANT TYPE CODE TRANSLATION LIST

	SHORT	
CODE	DESC	LONG DESCRIPTION
0	OCC	UNKNOWN OCCUPANT TYPE
1	DRVR	DRIVER
2	PSNG	PASSENGER
3	PED	PEDESTRIAN
4	CONV	PEDESTRIAN USING A PEDESTRIAN CONVEYA
5	PTOW	PEDESTRIAN TOWING OR TRAILERING AN OB
6	BIKE	PEDALCYCLIST
7	BTOW	PEDALCYCLIST TOWING OR TRAILERING AN (
8	PRKD	OCCUPANT OF A PARKED MOTOR VEHICLE
9	UNK	UNKNOWN TYPE OF NON-MOTORIST

PEDESTRIAN LOCATION CODE TRANSLATION LIST

CODE LONG DESCRIPTION

00	AT INTERSECTION - NOT IN ROADWAY
01	AT INTERSECTION - INSIDE CROSSWALK
02	AT INTERSECTION - IN ROADWAY, OUTSIDE CROSSWALK
03	AT INTERSECTION - IN ROADWAY, XWALK AVAIL UNKNWN
04	NOT AT INTERSECTION - IN ROADWAY
05	NOT AT INTERSECTION - ON SHOULDER
06	NOT AT INTERSECTION - ON MEDIAN
07	NOT AT INTERSECTION - WITHIN TRAFFIC RIGHT-OF-WAY
08	NOT AT INTERSECTION - IN BIKE PATH OR PARKING LANE
09	NOT-AT INTERSECTION - ON SIDEWALK
10	OUTSIDE TRAFFICWAY BOUNDARIES
13	AT INTERSECTION - IN BIKE LANE
14	NOT AT INTERSECTION - IN BIKE LANE
15	NOT AT INTERSECTION - INSIDE MID-BLOCK CROSSWALK
16	NOT AT INTERSECTION - IN PARKING LANE

ROAD CHARACTER CODE TRANSLATION LIST

	SHORT		
CODE	DESC	LONG DESCRIPTION	
0	UNK	UNKNOWN	
1	INTER	INTERSECTION	
2	ALLEY	DRIVEWAY OR ALLEY	
3	STRGHT	STRAIGHT ROADWAY	
4	TRANS	TRANSITION	
5	CURVE	CURVE (HORIZONTAL CURVE)	
6	OPENAC	OPEN ACCESS OR TURNOUT	
7	GRADE	GRADE (VERTICAL CURVE)	
8	BRIDGE	BRIDGE STRUCTURE	
9	TUNNEL	TUNNEL	

TRAFFIC CONTROL DEVICE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
000	NONE	NO CONTROL
001	TRF SIGNAL	TRAFFIC SIGNALS
002	FLASHBCN-R	FLASHING BEACON - RED (STOP)
003	FLASHBCN-A	FLASHING BEACON - AMBER (SLOW)
004	STOP SIGN	STOP SIGN
005	SLOW SIGN	SLOW SIGN
006	REG-SIGN	REGULATORY SIGN
007	YIELD	YIELD SIGN
800	WARNING	WARNING SIGN
009	CURVE	CURVE SIGN
010	SCHL X-ING	SCHOOL CROSSING SIGN OR SPECIAL SIGNAL
011	OFCR/FLAG	POLICE OFFICER, FLAGMAN - SCHOOL PATROL
012	BRDG-GATE	BRIDGE GATE - BARRIER
013	TEMP-BARR	TEMPORARY BARRIER
014	NO-PASS-ZN	NO PASSING ZONE
015	ONE-WAY	ONE-WAY STREET
016	CHANNEL	CHANNELIZATION
017	MEDIAN BAR	MEDIAN BARRIER
018	PILOT CAR	PILOT CAR
019	SP PED SIG	SPECIAL PEDESTRIAN SIGNAL
020	X-BUCK	CROSSBUCK
021	THR-GN-SIG	THROUGH GREEN ARROW OR SIGNAL
022	L-GRN-SIG	LEFT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
023	R-GRN-SIG	RIGHT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
024	WIGWAG	WIGWAG OR FLASHING LIGHTS W/O DROP-ARM GATE
025	X-BUCK WRN	CROSSBUCK AND ADVANCE WARNING
026	WW W/ GATE	FLASHING LIGHTS WITH DROP-ARM GATES
027	OVRHD SGNL	SUPPLEMENTAL OVERHEAD SIGNAL (RR XING ONLY)
028	SP RR STOP	SPECIAL RR STOP SIGN
029	ILUM GRD X	ILLUMINATED GRADE CROSSING
037	RAMP METER	METERED RAMPS
038	RUMBLE STR	RUMBLE STRIP
090	L-TURN REF	LEFT TURN REFUGE (WHEN REFUGE IS INVOLVED)
091	R-TURN ALL	RIGHT TURN AT ALL TIMES SIGN, ETC.
092	EMR SGN/FL	EMERGENCY SIGNS OR FLARES
093	ACCEL LANE	ACCELERATION OR DECELERATION LANES
094	R-TURN PRO	RIGHT TURN PROHIBITED ON RED AFTER STOPPING

095BUS STPSGNBUS STOP SIGN AND RED LIGHTS099UNKNOWNUNKNOWN OR NOT DEFINITE

VEHICLE TYPE CODE TRANSLATION LIST

CODE SHORT DESC LONG DESCRIPTION

WEATHER CONDITION CODE TRANSLATION LIST

CLEAR

CLOUDY

RAIN

SLEET

FOG SNOW

DUST

SMOKE

ASH

CLR

CLD

SLT

FOG

SNOW DUST

SMOK

ASH

RAIN

			0
00	PDO	NOT COLLECTED FOR PDO CRASHES	1
01	PSNGR CAR	PASSENGER CAR, PICKUP, LIGHT DELIVERY, ETC.	T
02	BOBTAIL	TRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)	2
03	FARM TRCTR	FARM TRACTOR OR SELF-PROPELLED FARM EOUTPMENT	3
0.4	SEMT TOW	THE THOILD DE THE TOTAL SCITTED	4
04	SEMI IOW	IROCK IRACION WITH IRAILER/MOBILE HOME IN IOW	5
05	TRUCK	TRUCK WITH NON-DETACHABLE BED, PANEL, ETC.	6
06	MOPED	MOPED, MINIBIKE, SEATED MOTOR SCOOTER, MOTOR BIKE	0
07	SCHL BUS	SCHOOL BUS (INCLUDES VAN)	1
08	OTH BUS	OTHER BUS	8
09	MTRCYCLE	MOTORCYCLE, DIRT BIKE	9
10	OTHER	OTHER: FORKLIFT, BACKHOE, ETC.	
11	MOTRHOME	MOTORHOME	
12	TROLLEY	MOTORIZED STREET CAR/TROLLEY (NO RAILS/WIRES)	
13	ATV	ATV	
14	MTRSCTR	MOTORIZED SCOOTER (STANDING)	
1 -			

15 SNOWMOBILE SNOWMOBILE

99 UNKNOWN UNKNOWN VEHICLE TYPE

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT STATE HIGHWAY SYSTEM CRASH LOCATIONS - DRIVER BEHAVIOR FORMAT

PAGE: 1

Marine Dr Lower Columbia River Hwy (092) 600 feet West of 2nd St (excludes intersection at 2nd St) January 1, 2011 through December 31, 2015

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SERIAL		М	A	*COUNTY OR	Ν	Y						COLL			RE	TYP,	/OWN	L	ΝL	Е
NO	DATE	Е	Y	CITY NAME	Т	Ρ	CRASH	LOCATION				TYPE EVENT	CAUSE	ERROR	FΗ	[#1	#2	L	JС	D
00495 10	/04/2014	1P	SA	Astoria	MN	R	HY 092,	LOWER COLUMBI	A RIVER	R AT MP 9	98.73	REAR 092	29	026	DRY 2	011	011	0	0 N	Ν
00268 06	5/23/2014	11A	MO	Astoria	MN	R	HY 092,	LOWER COLUMBI	A RIVER	R AT MP 🤉	98.76	REAR 092	07	026	DRY 2	2 011	011	0	0 N	Ν
00357 07	/17/2015	7P	FR	Astoria	MN	R	HY 092,	LOWER COLUMBI	A RIVER	r at mp 🤅	98.76	REAR 004	27,07	016,043	DRY 2	2 011	011	0	4 N	Ν
00456 10	/09/2011	4P	SU	Astoria	MN	R	HY 092,	LOWER COLUMBI	A RIVER	r at mp 9	98.79	REAR	07,27	043,016	DRY 2	011	011	0	0 N	Ν

VEHICLE OWNERSHIP CODES

Code	Short Description	Long Description
0	N/A	Not collected for PDO Crashes
1	PRVTE	Private
2	GOVMT	Government
3	PUBLC	Public
4	RENTL	Rental vehicle
5	STOLN	Stolen vehicle
9	UNKN	Unknown ownership

VEHICLE TYPE CODES

Code	Short Description	Long Description	
00	PDO	Not collected for PDO Crashes	_
01	PSNGR CAR	Passenger car, pickup, light delivery, etc.	
02	BOBTAIL	Truck tractor with no trailers (bobtail)	
03	FARM TRCTR	Farm tractor or self-propelled farm equipment	
04	SEMI TOW	Truck Tractor with trailer/mobile home in tow	
05	TRUCK	Truck with non-detachable bed, panel, etc.	
06	MOPED	Moped, minibike, seated motor scooter, motor bike	
07	SCHL BUS	School bus (includes van)	
08	OTH BUS	Other bus	
09	MTRCYCLE	Motorcycle, dirt bike	
10	OTHER	Other: forklift, backhoe, etc.	
11	MOTRHOME	Motorhome	
12	TROLLEY	Motorized Street Car/Trolley (no rails/wires)	
13	ATV	ATV	
14	MTRSCTR	Motorized scooter (standing)	
15	SNOWMOBILE	Snowmobile	
99	UNKNOWN	Unknown vehicle type	

CAUSE CODES

Code	Short Description	Medium Description	Long Description
00	NO CODE	NO CODE APPLICABLE	No cause associated at this level
01	TOO-FAST	TOO FAST FOR COND	Too fast for conditions (not exceed posted speed)
02	NO-YIELD	FAILED YIELD ROW	Did not yield right-of-way
03	PAS-STOP	PASSED STOP SIGN	Passed stop sign or red flasher
04	DIS SIG	DISREGRD TRAF SIGNAL	Disregarded traffic signal
05	LEFT-CTR	LEFT OF CTR/STRADDLE	Drove left of center on two-way road; straddling
06	IMP-OVER	IMPROPER PASSING	Improper overtaking
07	TOO-CLOS	FOLLOW TOO CLOSE	Followed too closely
08	IMP-TURN	IMPROPER TURN	Made improper turn
09	DRINKING	ALC OR DRUGS	Alcohol or Drug Involved
10	OTHR-IMP	OTHER DRIVE ERR	Other improper driving
11	MECH-DEF	MECH DEFECT	Mechanical defect
12	OTHER	OTHER	Other (not improper driving)
13	IMP LN C	IMP LANE CHANGE	Improper change of traffic lanes
14	DIS TCD	DISRG OTHR TCD	Disregarded other traffic control device
15	WRNG WAY	WRONG WAY / 1-WAY RD	Wrong way on one-way road; wrong side divided road
16	FATIGUE	DRIVER FATIGUED	Driver drowsy/fatigued/sleepy
17	ILLNESS	PHYSICAL ILLNESS	Physical illness
18	IN RDWY	ILLEGALLY IN RDWY	Non-motorist illegally in roadway
19	NT VISBL	NOT VISIBLE	Non-motorist not visible; non-reflective clothing
20	IMP PKNG	IMPROPER PARKING	Vehicle improperly parked
21	DEF STER	DEFECTIVE STEERING	Defective steering mechanism
22	DEF BRKE	DEFECTIVE BRAKES	Inadequate or no brakes
24	LOADSHFT	LOAD SHIFTED	Vehicle lost load or load shifted
25	TIREFAIL	TIRE FAILURE	Tire Failure
26	PHANTOM	PHANTOM VEHICLE	Phantom / Non-contact Vehicle
27	INATTENT	INATTENTION	Inattention
28	NM INATT	NON-MTRST INATTENT	Non-Motorist Inattention
29	F AVOID	FAIL AVOID VEH AHEAD	Failed to avoid vehicle ahead
30	SPEED	EXCED POSTED SPEED	Driving in excess of posted speed
31	RACING	SPEED RACING	Speed Racing (per PAR)
32	CARELESS	CARELESS DRIVING	Careless Driving (per PAR)
33	RECKLESS	RECKLESS DRIVING	Reckless Driving (per PAR)
34	AGGRESV	AGGRESSIVE DRIVING	Aggressive Driving (per PAR)
35	RD RAGE	ROAD RAGE	Road Rage (per PAR)
40	VIEW OBS	VIEW OBSCURED	View obscured
50	USED MDN	IMP USE MEDIAN/SHLDR	Improper use of median or shoulder
51	FAIL LN	F MAINT LANE	Failed to maintain lane
52	OFF RD	RAN OFF RD	Ran off road

ERR CODES

Code	Short Description	Medium Description	Long Description
000	NONE		No error
000			
001			
002			Failed to obey mandatory traffic turn signal, sign or lane markings
003			Left turn in front of oncoming traffic
005			Left turn where prohibited
005	ERM WRNG		
000			
007			
000	IMP STOP	IMP STOP	Improperly stopped in traffic lane
010		IMP/FAIL SIG	Improperty stopped in trainer and
010			Racking improperly (not parking)
012			Improperty narked
012		IMP STRT PARK	Improperty particular
014			Improper start from stopped position
015			Improper start from stopped position
015			Instention (Failure to Dim Lights prior to $1/1/97$)
010			Driving unsafe vehicle (no other error apparent)
017	OTH PARK	PRK MAN N/CLR	Entering leviting parked position w/ insufficient clearance: other improper parking maneuver
010			Dierogarded other driver's signal
020			
020	RAN STOP		Disregarded stan sign or flashing red
021		DISRG WRN SGN	Disregarded warning sign of itashing red
022			Disregarded valuing sign, haves of hashing amber
020			Disregarded siren or warning of emergency vehicle
024			Disregarded DR signal DR sign or DR flagman
025			Eailed to avoid stopped or parked vehicle aboad other than school hus
020			Did not have right-of-way over nedelcyclist
027			Did not have right-of-way
020			Eailed to vield right-of-way
029			Passing on a curve
030	PAS WRNG	PASS WRNG SID	Passing on the wrong side
032	PAS TANG	PASS TANGENT	Passing on straight road under unsafe conditions
033	PAS X-WK	PASS STP4PED	Passed vehicle stopped at crosswalk for nedestrian
034	PASINTR	PASS AT INTER	Passing at intersection
035		PASS ON HILL	Passing on crest of hill
036	N/PAS ZN	PASS N/PASSNG	Passing in No Passing" zone
037	PASTRAF	PASS ONC TRAF	Passing in front of oncoming traffic
038			Cutting in the lanes - two way only)
039	WRNGSIDE	DR WRONG SIDE	Driving on wrong side of the road (2-way undivided roadways)
040			Driving through safety zone or over island
041	F/ST BUS	F/STP SCHI BUS	Failed to stop for school bus
042	F/SLO MV	F/SLO SLO VEH	Failed to decrease speed for slower moving vehicle
043	TOO CLOSE	FOLLW TO CLOS	Following too closely (must be on officer's report)
044	STRDLIN	STRD/DR WRNG	Straddling or driving on wrong lanes
045	IMP CHG	IMP LANE CHG	Improper change of traffic lanes

Short Description	Medium Description	Long Description
WRNG WAY	WRNG WY/1 WAY	Wrong way on one-way roadway; wrong side divided road
BASCRULE	V BASIC RULE	Driving too fast for conditions (not exceeding posted speed)
OPN DOOR	OPN DOOR TRAF	Opened door into adjacent traffic lane
IMPEDING	IMPEDING TRAF	Impeding Traffic
SPEED	SPEED	Driving in excess of posted speed
RECKLESS	RECKLSS DRVNG	Reckless driving (per PAR)
CARELESS	CARELSS DRVNG	Careless driving (per PAR)
RACING	RACING	Speed Racing (per PAR)
X N/SGNL	X-INT NO SGNL	Crossing at intersection, no traffic signal present
X W/SGNL	X-INT W/ SGNL	Crossing at intersection, traffic signal present
DIAGONAL	X-INT DIAGNL	Crossing at intersection - diagonally
BTWN INT	X-BTWN INTER	Crossing between intersections
W/TRAF-S	W SHLD W/TRAF	Walking, running, riding, etc., on shoulder WITH traffic
A/TRAF-S	W SHLD A/TRAF	Walking, running, riding, etc., on shoulder FACING traffic
W/TRAF-P	W PAVE W/TRAF	Walking, running, riding, etc., on pavement WITH traffic
A/TRAF-P	W PAVE A/TRAF	Walking, running, riding, etc., on pavement FACING traffic
PLAYINRD	PLAY IN RDWY	Playing in street or road
PUSH MV	PUSH MV IN RD	Pushing or working on vehicle in road or on shoulder
WORK IN RD	WORK IN RD	Working in roadway or along shoulder
LAY ON RD	LYING IN RD	Standing or lying in roadway
NM IMP USE	N-M IMP USE	Improper use of traffic lane by non-motorist
ELUDING	ELUDING	Eluding / Attempt to elude
F NEG CURV	FAIL NEG CURV	Failed to negotiate a curve
FAIL LN	F MAINT LANE	Failed to maintain lane
OFF RD	RAN OFF RD	Ran off road
NO CLEAR	MISJUDGE CLR	Driver misjudged clearance
OVRSTEER	OVERSTEER	Over-correcting
NOT USED	NOT USED	Code not in use
OVRLOAD	OVERLOAD	Overloading or improper loading of vehicle with cargo or passengers
UNA DIS TC	UNA DISRG TCD	Unable to determine which driver disregarded traffic control device
	Short Description WRNG WAY BASCRULE OPN DOOR IMPEDING SPEED RECKLESS CARELESS CARELESS RACING X N/SGNL X W/SGNL DIAGONAL BTWN INT W/TRAF-S A/TRAF-S W/TRAF-P A/TRAF-P PLAYINRD PUSH MV WORK IN RD LAY ON RD NM IMP USE ELUDING F NEG CURV FAIL LN OFF RD NO CLEAR OVRSTEER NOT USED OVRLOAD UNA DIS TC	Short DescriptionMedium DescriptionWRNG WAYWRNG WY/1 WAYBASCRULEV BASIC RULEOPN DOOROPN DOOR TRAFIMPEDINGIMPEDING TRAFSPEEDSPEEDRECKLESSRECKLSS DRVNGCARELESSCARELSS DRVNGRACINGX-INT NO SGNLX W/SGNLX-INT W/ SGNLDIAGONALX-INT DIAGNLBTWN INTX-BTWN INTERW/TRAF-SW SHLD W/TRAFA/TRAF-SW SHLD A/TRAFW/TRAF-PW PAVE W/TRAFA/TRAF-PW PAVE M/TRAFPLAYINRDPLAY IN RDWYPUSH MVPUSH MV IN RDWORK IN RDLYING IN RDNM IMP USEN-M IMP USEELUDINGELUDINGF NEG CURVFAIL NEG CURVFAIL LNF MAINT LANEOFF RDRAN OFF RDNO CLEARMISJUDGE CLROVRSTEEROVERSTEERNOT USEDNOT USEDOVRLOADOVERLOADUNA DISTCUNA DISRG TCD

Code	Short Description	Medium Description	Long Description
001	FEL/JUMP	FELL/JUMPED MV	Occupant fell, jumped or was ejected from moving vehicle
002	INTERFER	PSNGR INTERFERED	Passenger interfered with driver
003	BUG INTF	ANML INTERFERED	Animal or insect in vehicle interfered with driver
004	INDRCT PED	PED INDRCTLY INVLV	Pedestrian indirectly involved (not struck)
005	SUB-PED	SUBSEQUENT PED	"Sub-Ped": pedestrian injured subsequent to collision, etc.
006	INDRCT BIK	BIKE INDRCTLY INVLV	Pedalcyclist indirectly involved (not struck)
007	HITCHIKR	HITCHHIKER	Hitchhiker (soliciting a ride)
008	PSNGR TOW	PSNGR TOWED	Passenger or non-motorist being towed or pushed on conveyance
009	ON/OFF V	ON/OFF STOP VEH	Getting on/off stopped/parked vehicle (occupants only; must have physical contact w/ vehicle)
010	SUB OTRN	SUBSEQ OVERTURN	Overturned after first harmful event
011	MV PUSHD	VEH BEING PUSHED	Vehicle being pushed
012	MV TOWED	VEH TOWED/TOWING	Vehicle towed or had been towing another vehicle
013	FORCED	FORCED BY IMPACT	Vehicle forced by impact into another vehicle, pedalcyclist or pedestrian
014	SET MOTN	MV SET IN MOTION	Vehicle set in motion by non-driver (child released brakes, etc.)
015	RR ROW	RAILROAD ROW	At or on railroad right-of-way (not Light Rail)
016	LT RL ROW	LIGHT RAIL ROW	At or on Light-Rail right-of-way
017	RR HIT V	TRAIN HIT VEH	Train struck vehicle
018	V HIT RR	VEH HIT TRAIN	Vehicle struck train
019	HIT RR CAR	VEH HIT RR CAR	Vehicle struck railroad car on roadway
020	JACKNIFE	JACKKNIFE	Jackknife; trailer or towed vehicle struck towing vehicle
021	TRL OTRN	TRAILER O'TURN	Trailer or towed vehicle overturned
022	CN BROKE	TRLR CONN BROKE	Trailer connection broke
023	DETACH TRL	DETCHD TRLR STRKNG	Detached trailing object struck other vehicle, non-motorist, or object
024	V DOOR OPN	V DOOR OPN IN TRAF	Vehicle door opened into adjacent traffic lane
025	WHEELOFF	WHEEL CAME OFF	Wheel came off
026	HOOD UP	HOOD FLEW UP	Hood flew up
028	LOAD SHIFT	LOAD SHIFTED	Lost load, load moved or shifted
029	TIREFAIL	TIRE FAILURE	Tire failure
030	PET	PET	Pet: cat, dog and similar
031	LVSTOCK	LIVESTOCK	Stock: cow, calf, bull, steer, sheep, etc.
032	HORSE	HORSE	Horse, mule, or donkey
033	HRSE&RID	HORSE & RIDER	Horse and rider
034	GAME	GAME NO DEER/ELK	Wild animal, game (includes birds; not deer or elk)
035	DEER ELK	DEER OR ELK	Deer or elk, wapiti
036	ANML VEH	ANIMAL-DRAWN VEH	Animal-drawn vehicle
037	CULVERT	CULVERT/MANHOLE	Culvert, open low or high manhole
038	ATENUATN	IMPACT CUSHION	Impact attenuator
039	PK METER	PARKING METER	Parking meter
040	CURB	CURB	Curb (also narrow sidewalks on bridges)
041	JIGGLE	JIGGLE BAR N/MED	Jiggle bar or traffic snake for channelization

Code	Short Description	Medium Description	Long Description
042	GDRL END	GUARDRAIL END	Leading edge of guardrail
043	GARDRAIL	GUARDRAIL	Guard rail (not metal median barrier)
044	BARRIER	MEDIAN BARRIER	Median barrier (raised or metal)
045	WALL	WALL	Retaining wall or tunnel wall
046	BR RAIL	BRIDGE RAIL	Bridge railing or parapet (on bridge or approach)
047	BR ABUTMNT	BRIDGE ABUTMENT	Bridge abutment (included "approach end" thru 2013)
048	BR COLMN	BRIDGE COLUMN	Bridge pillar or column
049	BR GIRDR	BRIDGE GIRDER	Bridge girder (horizontal bridge structure overhead)
050	ISLAND	TRAFFIC ISLAND	Traffic raised island
051	GORE	GORE	Gore
052	POLE UNK	POLE-UNKNOWN	Pole – type unknown
053	POLE UTL	POLE-UTILITY	Pole – power or telephone
054	ST LIGHT	POLE-ST LIGHT	Pole – street light only
055	TRF SGNL	POLE-TRAF SIGNAL	Pole – traffic signal and ped signal only
056	SGN BRDG	POLE-SIGN BRIDGE	Pole – sign bridge
057	STOPSIGN	STOP/YIELD SIGN	Stop or yield sign
058	OTH SIGN	OTHER SIGN	Other sign, including street signs
059	HYDRANT	HYDRANT	Hydrant
060	MARKER	DELINEATOR	Delineator or marker (reflector posts)
061	MAILBOX	MAILBOX	Mailbox
062	TREE	TREE/STUMP	Tree, stump or shrubs
063	VEG OHED	VEGTN OVER RDWY	Tree branch or other vegetation overhead, etc.
064	WIRE/CBL	CABLE ACROSS RD	Wire or cable across or over the road
065	TEMP SGN	TEMP SIGN/BARR	Temporary sign or barricade in road, etc.
066	PERM SGN	PERM SIGN/BARR	Permanent sign or barricade in/off road
067	SLIDE	SLIDE/ROCKS	Slides, fallen or falling rocks
068	FRGN OBJ	FOREIGN OBJECT	Foreign obstruction/debris in road (not gravel)
069	EQP WORK	EQUIP WORKING	Equipment working in/off road
070	OTH EQP	OTHER EQUIPMENT	Other equipment in or off road (includes parked trailer, boat)
071	MAIN EQP	MAINTNCE EQUIP	Wrecker, street sweeper, snow plow or sanding equipment
072	OTHER WALL	OTHER WALL	Rock, brick or other solid wall
073	IRRGL PVMT	IRREGULAR PAVEMENT	Other bump (not speed bump), pothole or pavement irregularity (per PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJ	Other overhead object (highway sign, signal head, etc.); not bridge
075	CAVE IN	CAVE IN	Bridge or road cave in
076	HI WATER	HIGH WATER	High Water
077	SNO BANK	SNOW BANK	Snow Bank
078	LO-HI EDGE	LOW-HIGH PVMNT EDGE	Low or high shoulder at pavement edge
079	DITCH	CUT SLOPE/DITCH	Cut slope or ditch embankment
080	OBJ FRM MV	OBJ FRM OTHR VEH	Struck by rock or other object set in motion by other vehicle (incl. lost loads)
081	FLY-OBJ	OTHER MOVING OBJ	Struck by rock or other moving or flying object (not set in motion by vehicle)
082	VEH HID	VEH OBSCURE VIEW	Vehicle obscured view
083	VEG HID	VEG OBSCURE VIEW	Vegetation obscured view

Code	Short Description	Medium Description	Long Description
	2000.000	2000000000	2000.000
084	BLDG HID	BLD OBSCURE VIEW	View obscured by fence, sign, phone booth, etc.
085	WIND GUST	WIND GUST	Wind Gust
086	IMMERSED	IMMERSION	Vehicle immersed in body of water
087	FIRE/EXP	FIRE/EXPLOSION	Fire or explosion
088	FENC/BLD	FENCE/BUILDING	Fence or building, etc.
089	OTHR CRASH	REFER OTHR CRASH	Crash related to another separate crash
090	TO 1 SIDE	TWO WAY ONE SIDE	Two-way traffic on divided roadway all routed to one side
091	BUILDING	BUILDING	Building or other structure
092	PHANTOM	PHANTOM VEH	Other (phantom) non-contact vehicle
093	CELL PHONE	CELL PHONE PER PAR	Cell phone (on PAR or driver in use)
094	VIOL GDL	VIOL GRAD DR LIC	Teenage driver in violation of graduated license pgm
095	GUY WIRE	GUY WIRE	Guy wire
096	BERM	BERM	Berm (earthen or gravel mound)
097	GRAVEL	GRAVEL IN RDWY	Gravel in roadway
098	ABR EDGE	ABRUPT EDGE	Abrupt edge
099	CELL WTNSD	CELL PHONE WITNESSED	Cell phone use witnessed by other participant
100	UNK FIXD	UNK FIX OBJ	Fixed object, unknown type.
101	OTHER OBJ	OTHER OBJ NOT FIXED	Non-fixed object, other or unknown type
102	TEXTING	TEXTING	Texting
103	WZ WORKER	WZ WORKER	Work Zone Worker
104	ON VEHICLE	RIDE ON VEH EXTERIOR	Passenger riding on vehicle exterior
105	PEDAL PSGR	PSNGR ON PEDALCYCLE	Passenger riding on pedalcycle
106	MAN WHLCHR	NONMOTOR WHEELCHAIR	Pedestrian in non-motorized wheelchair
107	MTR WHLCHR	MOTORIZED WHEELCHAIR	Pedestrian in motorized wheelchair
108	OFFICER	POLICE OFFICER	Law Enforcement / Police Officer
109	SUB-BIKE	SUBSEQUENT BICYCLIST	"Sub-Bike": pedalcyclist injured subsequent to collision, etc.
110	N-MTR	NM STR VEH	Non-motorist struck vehicle
111	S CAR VS V	ST CAR STRUCK VEH	Street Car/Trolley (on rails or overhead wire system) struck vehicle
112	V VS S CAR	VEH STRUCK ST CAR	Vehicle struck Street Car/Trolley (on rails or overhead wire system)
113	S CAR ROW	STREET CAR ROW	At or on street car or trolley right-of-way
114	RR EQUIP	VEH STRUCK RR EQUIP	Vehicle struck railroad equipment (not train) on tracks
115	DSTRCT GPS	DISTRACT GPS DEVICE	Distracted by navigation system or GPS device
116	DSTRCT OTH	DISTRACT OTHR DEVICE	Distracted by other electronic device
117	RR GATE	RR DROP-ARM GATE	Rail crossing drop-arm gate
118	EXPNSN JNT	EXPANSION JOINT	Expansion joint
119	JERSEY BAR	JERSEY BARRIER	Jersey barrier
120	WIRE BAR	WIRE BARRIER	Wire or cable median barrier
121	FENCE	FENCE	Fence
123	OBJ IN VEH	LOOSE OBJ IN VEHICLE	Loose object in vehicle struck occupant
124	SLIPPERY	SLIPPERY SURFACE	Sliding or swerving due to wet, icy, slippery or loose surface (not gravel)
125	SHLDR	SHLDR GAVE	Shoulder gave way
126	BOULDER	ROCKS / BOULDER	Rock(s), boulder (not gravel; not rock slide)

C	Code	Short Description	Medium Description	Long Description
_	127	LAND SLIDE	ROCK OR LAND SLIDE	Rock slide or land slide
	128	CURVE INV	CURVE PRESENT	Curve present at crash location
	129	HILL INV	HILL PRESENT	Vertical grade / hill present at crash location
	130	CURVE HID	CURVE OBSCURED VIEW	View obscured by curve
	131	HILL HID	HILL OBSCURED VIEW	View obscured by vertical grade / hill
	132	WINDOW HID	WINDOW VIEW OBSCURED	View obscured by vehicle window conditions
	133	SPRAY HID	SPRAY OBSCURED VIEW	View obscured by water spray
	134	TORRENTIAL	TORRENTIAL RAIN	Torrential Rain (exceptionally heavy rain)

Appendix D 2019 Background Traffic Conditions

Intersection

Movement EBL E	BT EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	م ار		सीरे			\$			¢	
Traffic Vol, veh/h 7 12	22 19	12	1348	3	0	0	0	8	0	8
Future Vol, veh/h 7 12	22 19	12	1348	3	0	0	0	8	0	8
Conflicting Peds, #/hr 0	0 4	4	0	0	0	0	0	0	0	0
Sign Control Free Fr	ree Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized -	- None	-	-	None	-	-	None	-	-	None
Storage Length -		-	-	-	-	-	-	-	-	-
Veh in Median Storage, # -	0 -	-	0	-	-	0	-	-	0	-
Grade, % -	0 -	-	0	-	-	0	-	-	0	-
Peak Hour Factor 93	93 93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, % 0	1 0	0	3	0	0	0	0	0	0	0
Mvmt Flow 8 13	14 20	13	1449	3	0	0	0	9	0	9

Major/Minor	Major1		М	ajor2		ľ	Minor1		ſ	Minor2			
Conflicting Flow All	1453	0	0	1338	0	0	2094	2821	671	2149	2830	726	
Stage 1	-	-	-	-	-	-	1343	1343	-	1477	1477	-	
Stage 2	-	-	-	-	-	-	751	1478	-	672	1353	-	
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9	
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-	
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3	
Pot Cap-1 Maneuver	472	-	-	522	-	-	31	18	404	28	18	372	
Stage 1	-	-	-	-	-	-	163	223	-	135	192	-	
Stage 2	-	-	-	-	-	-	373	192	-	416	220	-	
Platoon blocked, %		-	-		-	-							
Mov Cap-1 Maneuver	· 472	-	-	522	-	-	26	15	402	24	15	372	
Mov Cap-2 Maneuver	· _	-	-	-	-	-	26	15	-	24	15	-	
Stage 1	-	-	-	-	-	-	152	207	-	126	167	-	
Stage 2	-	-	-	-	-	-	317	167	-	389	205	-	

Approach	EB	WB	NB	SB	
HCM Control Delay, s	0.5	0.9	0	127.9	
HCM LOS			А	F	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR S	SBLn1
Capacity (veh/h)	-	472	-	-	522	-	-	45
HCM Lane V/C Ratio	-	0.016	-	-	0.025	-	-	0.382
HCM Control Delay (s)	0	12.8	0.4	-	12.1	0.8	-	127.9
HCM Lane LOS	А	В	А	-	В	А	-	F
HCM 95th %tile Q(veh)	-	0	-	-	0.1	-	-	1.3

Intersection

Movement EBL EBI EBR WBL WBI WBR NBI NBI NBR SBL SBI SBR Lane Configurations Image: Configuration in the second in
Lane Configurations Image: height display="block">Image: height display="block">Image: height display="block">Image: height display="block">Image: height display="block"/>Image: height display="block"/>Image: height display="block"/>Image: height display="block"/>Image: height display="block"/>Image: height display="block"/>Image: height display="block"/Image: height display="block"/Image: height display="block"/Image: height display="block"/Image: height display="block"/Image: height display="block"/Image: height display="block"/>Image: height display="block"/Image: height display="bl
Traffic Vol, veh/h 4 1226 0 0 1351 7 12 0 14 0 0 0 Future Vol, veh/h 4 1226 0 0 1351 7 12 0 14 0 <t< td=""></t<>
Future Vol, veh/h 4 1226 0 0 1351 7 12 0 14 0 0 0 Conflicting Peds, #/hr 0 0 1 1 0<
Conflicting Peds, #/hr 0 0 1 1 0
Sign Control Free Free Free Free Free Stop
RT Channelized None None None - None
Storage Length
Storage Ecligit
Veh in Median Storage, # - 0 0 0
Grade, % - 0 0 0 0 -
Peak Hour Factor 92 92 92 92 92 92 92 92 92 92 92 92 92
Heavy Vehicles, % 0 1 0 0 3 0 0 0 0 0 0
Mvmt Flow 4 1333 0 0 1468 8 13 0 15 0 0 0

Major/Minor	Major1		Ма	jor2		Ν	/linor1			
Conflicting Flow All	1476	0	0 1	334	0	0	2076	2818	667	
Stage 1	-	-	-	-	-	-	1342	1342	-	
Stage 2	-	-	-	-	-	-	734	1476	-	
Critical Hdwy	4.1	-	-	4.1	-	-	6.8	6.5	6.9	
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	5.5	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	5.8	5.5	-	
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	
Pot Cap-1 Maneuver	462	-	-	524	-	-	47	18	406	
Stage 1	-	-	-	-	-	-	212	223	-	
Stage 2	-	-	-	-	-	-	441	192	-	
Platoon blocked, %		-	-		-	-				
Mov Cap-1 Maneuver	462	-	-	524	-	-	45	0	406	
Mov Cap-2 Maneuver	· _	-	-	-	-	-	45	0	-	
Stage 1	-	-	-	-	-	-	205	0	-	
Stage 2	-	-	-	-	-	-	441	0	-	

Approach	EB	WB	NB	
HCM Control Delay, s	0.2	0	66.1	
HCM LOS			F	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	
Capacity (veh/h)	86	462	-	-	524	-	-	
HCM Lane V/C Ratio	0.329	0.009	-	-	-	-	-	
HCM Control Delay (s)	66.1	12.9	0.2	-	0	-	-	
HCM Lane LOS	F	В	А	-	А	-	-	
HCM 95th %tile Q(veh)	1.3	0	-	-	0	-	-	

Intersection													
Int Delay, s/veh	0.5												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		đ þ			4î b			- 44			- 🗘		
Traffic Vol, veh/h	3	1226	14	2	1359	17	1	0	6	5	0	3	
Future Vol, veh/h	3	1226	14	2	1359	17	1	0	6	5	0	3	
Conflicting Peds, #/hr	2	0	3	3	0	2	2	0	0	0	0	2	
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	
RT Channelized	-	-	None										
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	
Veh in Median Storage,	# -	0	-	-	0	-	-	0	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95	
Heavy Vehicles, %	0	2	0	0	3	0	0	0	0	0	0	0	
Mvmt Flow	3	1291	15	2	1431	18	1	0	6	5	0	3	

Major/Minor	Major1		N	lajor2		Ν	Minor1		ľ	Minor2			
Conflicting Flow All	1450	0	0	1308	0	0	2028	2762	656	2098	2761	728	
Stage 1	-	-	-	-	-	-	1307	1307	-	1446	1446	-	
Stage 2	-	-	-	-	-	-	721	1455	-	652	1315	-	
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9	
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-	
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3	
Pot Cap-1 Maneuver	473	-	-	536	-	-	34	20	413	30	20	370	
Stage 1	-	-	-	-	-	-	172	232	-	141	199	-	
Stage 2	-	-	-	-	-	-	389	197	-	428	230	-	
Platoon blocked, %		-	-		-	-							
Mov Cap-1 Maneuver	472	-	-	536	-	-	32	19	412	29	19	369	
Mov Cap-2 Maneuver	· _	-	-	-	-	-	32	19	-	29	19	-	
Stage 1	-	-	-	-	-	-	168	226	-	137	195	-	
Stage 2	-	-	-	-	-	-	378	193	-	412	224	-	

Approach	EB	WB	NB	SB	
HCM Control Delay, s	0.1	0.1	29.7	105.3	
HCM LOS			D	F	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR S	SBLn1
Capacity (veh/h)	153	472	-	-	536	-	-	44
HCM Lane V/C Ratio	0.048	0.007	-	-	0.004	-	-	0.191
HCM Control Delay (s)	29.7	12.7	0.1	-	11.7	0.1	-	105.3
HCM Lane LOS	D	В	А	-	В	А	-	F
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.6

Intersection													
Int Delay, s/veh	2.8												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		\$			\$			4			\$		
Traffic Vol, veh/h	0	0	0	1	0	0	0	0	1	0	0	0	
Future Vol, veh/h	0	0	0	1	0	0	0	0	1	0	0	0	
Conflicting Peds, #/hr	1	0	1	0	0	0	1	0	0	0	0	1	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	
RT Channelized	-	-	None										
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	
Veh in Median Storage,	# -	0	-	-	0	-	-	0	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70	
Heavy Vehicles, %	0	2	0	2	2	2	0	0	2	2	0	0	
Mvmt Flow	0	0	0	1	0	0	0	0	1	0	0	0	

Major/Minor	Minor2		l	Vinor1		ľ	Major1		Ν	/lajor2			
Conflicting Flow All	4	3	3	3	3	2	2	0	0	1	0	0	
Stage 1	2	2	-	1	1	-	-	-	-	-	-	-	
Stage 2	2	1	-	2	2	-	-	-	-	-	-	-	
Critical Hdwy	7.1	6.52	6.2	7.12	6.52	6.22	4.1	-	-	4.12	-	-	
Critical Hdwy Stg 1	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-	
Critical Hdwy Stg 2	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-	
Follow-up Hdwy	3.5	4.018	3.3	3.518	4.018	3.318	2.2	-	-	2.218	-	-	
Pot Cap-1 Maneuver	1022	893	1087	1019	893	1082	1634	-	-	1622	-	-	
Stage 1	1026	894	-	1022	895	-	-	-	-	-	-	-	
Stage 2	1026	895	-	1021	894	-	-	-	-	-	-	-	
Platoon blocked, %								-	-		-	-	
Mov Cap-1 Maneuver	1020	892	1085	1018	892	1081	1632	-	-	1620	-	-	
Mov Cap-2 Maneuver	1020	892	-	1018	892	-	-	-	-	-	-	-	
Stage 1	1025	893	-	1022	895	-	-	-	-	-	-	-	
Stage 2	1025	895	-	1020	893	-	-	-	-	-	-	-	

Approach	EB	WB	NB	SB	
HCM Control Delay, s	0	8.5	0	0	
HCM LOS	Α	А			

Minor Lane/Major Mvmt	NBL	NBT	NBR EB	Ln1W	'BLn1	SBL	SBT	SBR	
Capacity (veh/h)	1632	-	-	-	1018	1620	-	-	
HCM Lane V/C Ratio	-	-	-	-	0.001	-	-	-	
HCM Control Delay (s)	0	-	-	0	8.5	0	-	-	
HCM Lane LOS	А	-	-	А	А	А	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-	-	

Appendix E 2019 Total Traffic Conditions

Intersection

											~~~	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		415			412			- 44			- 44	
Traffic Vol, veh/h	11	1226	19	12	1350	5	0	0	0	11	0	16
Future Vol, veh/h	11	1226	19	12	1350	5	0	0	0	11	0	16
Conflicting Peds, #/hr	0	0	4	4	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage,	# -	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	1	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	12	1318	20	13	1452	5	0	0	0	12	0	17

Major/Minor	Major1		Ma	ajor2		Ν	/linor1		ľ	Minor2			
Conflicting Flow All	1457	0	0	1343	0	0	2108	2839	673	2163	2846	728	
Stage 1	-	-	-	-	-	-	1356	1356	-	1480	1480	-	
Stage 2	-	-	-	-	-	-	752	1483	-	683	1366	-	
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9	
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-	
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3	
Pot Cap-1 Maneuver	470	-	-	520	-	-	30	18	402	27	17	370	
Stage 1	-	-	-	-	-	-	160	219	-	134	191	-	
Stage 2	-	-	-	-	-	-	373	191	-	410	217	-	
Platoon blocked, %		-	-		-	-							
Mov Cap-1 Maneuver	470	-	-	520	-	-	24	14	400	22	13	370	
Mov Cap-2 Maneuver		-	-	-	-	-	24	14	-	22	13	-	
Stage 1	-	-	-	-	-	-	143	196	-	120	166	-	
Stage 2	-	-	-	-	-	-	309	166	-	369	194	-	

Approach	EB	WB	NB	SB	
HCM Control Delay, s	0.7	0.9	0	149.1	
HCM LOS			А	F	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR S	SBLn1
Capacity (veh/h)	-	470	-	-	520	-	-	50
HCM Lane V/C Ratio	-	0.025	-	-	0.025	-	-	0.581
HCM Control Delay (s)	0	12.9	0.6	-	12.1	0.8	-	149.1
HCM Lane LOS	А	В	А	-	В	А	-	F
HCM 95th %tile Q(veh)	-	0.1	-	-	0.1	-	-	2.2

## 02/12/2018

## Intersection

Movement E	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4î b			सी है			¢				
Traffic Vol, veh/h	4	1233	0	0	1355	8	12	0	14	0	0	0
Future Vol, veh/h	4	1233	0	0	1355	8	12	0	14	0	0	0
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	0	0	0	0
Sign Control F	ree	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	1	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	4	1340	0	0	1473	9	13	0	15	0	0	0

Major/Minor	Major1		Ma	ajor2		Ν	/linor1			
Conflicting Flow All	1482	0	0 1	341	0	0	2086	2832	671	
Stage 1	-	-	-	-	-	-	1350	1350	-	
Stage 2	-	-	-	-	-	-	736	1482	-	
Critical Hdwy	4.1	-	-	4.1	-	-	6.8	6.5	6.9	
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	5.5	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	5.8	5.5	-	
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	
Pot Cap-1 Maneuver	460	-	-	521	-	-	47	18	404	
Stage 1	-	-	-	-	-	-	210	221	-	
Stage 2	-	-	-	-	-	-	440	191	-	
Platoon blocked, %		-	-		-	-				
Mov Cap-1 Maneuver	460	-	-	521	-	-	45	0	404	
Mov Cap-2 Maneuver		-	-	-	-	-	45	0	-	
Stage 1	-	-	-	-	-	-	203	0	-	
Stage 2	-	-	-	-	-	-	440	0	-	

Approach	EB	WB	NB	
HCM Control Delay, s	0.2	0	66.1	
HCM LOS			F	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	
Capacity (veh/h)	86	460	-	-	521	-	-	
HCM Lane V/C Ratio	0.329	0.009	-	-	-	-	-	
HCM Control Delay (s)	66.1	12.9	0.2	-	0	-	-	
HCM Lane LOS	F	В	А	-	А	-	-	
HCM 95th %tile Q(veh)	1.3	0	-	-	0	-	-	

Intersection													
Int Delay, s/veh	1.4												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		đ þ			सीनि			\$			\$		
Traffic Vol, veh/h	7	1229	14	2	1362	26	1	0	6	12	0	5	
Future Vol, veh/h	7	1229	14	2	1362	26	1	0	6	12	0	5	
Conflicting Peds, #/hr	2	0	3	3	0	2	2	0	0	0	0	2	
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	
RT Channelized	-	-	None										
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	
Veh in Median Storage,	# -	0	-	-	0	-	-	0	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95	
Heavy Vehicles, %	0	2	0	0	3	0	0	0	0	0	0	0	
Mvmt Flow	7	1294	15	2	1434	27	1	0	6	13	0	5	

Major/Minor	Major1		Μ	lajor2		Ν	/linor1		ľ	Minor2			
Conflicting Flow All	1463	0	0	1311	0	0	2042	2786	657	2116	2780	735	
Stage 1	-	-	-	-	-	-	1319	1319	-	1454	1454	-	
Stage 2	-	-	-	-	-	-	723	1467	-	662	1326	-	
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9	
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-	
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3	
Pot Cap-1 Maneuver	468	-	-	534	-	-	34	19	412	30	19	367	
Stage 1	-	-	-	-	-	-	169	229	-	139	197	-	
Stage 2	-	-	-	-	-	-	388	194	-	422	227	-	
Platoon blocked, %		-	-		-	-							
Mov Cap-1 Maneuver	467	-	-	534	-	-	31	18	411	28	18	366	
Mov Cap-2 Maneuver		-	-	-	-	-	31	18	-	28	18	-	
Stage 1	-	-	-	-	-	-	159	216	-	131	193	-	
Stage 2	-	-	-	-	-	-	374	190	-	393	214	-	

Approach	EB	WB	NB	SB	
HCM Control Delay, s	0.4	0.1	30.4	165.8	
HCM LOS			D	F	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR S	SBLn1
Capacity (veh/h)	149	467	-	-	534	-	-	38
HCM Lane V/C Ratio	0.049	0.016	-	-	0.004	-	-	0.471
HCM Control Delay (s)	30.4	12.8	0.3	-	11.8	0.1	-	165.8
HCM Lane LOS	D	В	А	-	В	А	-	F
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	1.6

### Intersection

Movement E	BL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		¢			¢			\$			\$	
Traffic Vol, veh/h	0	0	9	1	0	0	13	0	1	0	0	0
Future Vol, veh/h	0	0	9	1	0	0	13	0	1	0	0	0
Conflicting Peds, #/hr	1	0	1	0	0	0	1	0	0	0	0	1
Sign Control St	top	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	0	2	0	2	2	2	0	0	2	2	0	0
Mvmt Flow	0	0	13	1	0	0	19	0	1	0	0	0

Major/Minor	Minor2		l	Minor1		N	Major1		Ν	/lajor2			
Conflicting Flow All	41	41	3	47	40	2	2	0	0	1	0	0	
Stage 1	2	2	-	38	38	-	-	-	-	-	-	-	
Stage 2	39	39	-	9	2	-	-	-	-	-	-	-	
Critical Hdwy	7.1	6.52	6.2	7.12	6.52	6.22	4.1	-	-	4.12	-	-	
Critical Hdwy Stg 1	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-	
Critical Hdwy Stg 2	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-	
Follow-up Hdwy	3.5	4.018	3.3	3.518	4.018	3.318	2.2	-	-	2.218	-	-	
Pot Cap-1 Maneuver	968	851	1087	954	852	1082	1634	-	-	1622	-	-	
Stage 1	1026	894	-	977	863	-	-	-	-	-	-	-	
Stage 2	981	862	-	1012	894	-	-	-	-	-	-	-	
Platoon blocked, %								-	-		-	-	
Mov Cap-1 Maneuver	957	840	1085	933	841	1081	1632	-	-	1620	-	-	
Mov Cap-2 Maneuver	957	840	-	933	841	-	-	-	-	-	-	-	
Stage 1	1013	893	-	965	853	-	-	-	-	-	-	-	
Stage 2	968	852	-	999	893	-	-	-	-	-	-	-	

Approach	EB	WB	NB	SB	
HCM Control Delay, s	8.4	8.9	6.7	0	
HCM LOS	А	А			

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1\	VBLn1	SBL	SBT	SBR	
Capacity (veh/h)	1632	-	-	1085	933	1620	-	-	
HCM Lane V/C Ratio	0.011	-	-	0.012	0.002	-	-	-	
HCM Control Delay (s)	7.2	0	-	8.4	8.9	0	-	-	
HCM Lane LOS	А	А	-	А	Α	А	-	-	
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-	



CARLETON HART ARCHITECTURE P.C.

830 sw 10th avenue #200 portland oregon 97205503 243 2252www.carletonhart.com

# APPENDIX F: PRODUCT DATA



# **NEW! LP[®] SmartSide[®] Cedar Texture Vertical Siding**

- Vertical siding creates a versatile charming or modern aesthetic
- 16' length allows for one piece installation and eliminates horizontal joints*
- Use in combination with 16' SmartSide Cedar Texture or Reversible Trim for a Board & Batten look
- For entire structure, or used as accent panel on tall walls, vertical columns, gable ends and more
- No Groove Square Edge
- Treated engineered wood strand substrate

*Vertical Siding may only span one plate-to-plate. Each vertical application is not to span beyond one floor to ceiling distance, or one floor to top of gable distance.

Refer to the LP Vertical Siding Application Instructions at Ipcorp.com for additional limitations.



Complete warranty details available at lpcorp.com





Cedar texture

38 Series Cedar Texture Vertical Siding (strar	nd)	LENGTH
	0.315 in. (8 mm)	16 ft. (192 in.)(4
◄ 15.94 in. (40.5 cm) →		

Siding (strand)	LENGTH	ACTUAL WIDTH	MINIMUM THICKNESS	
● 0.315 in. ● (8 mm)	16 ft. (192 in.)(4.9 m)	15.94 in. (40.5 cm)	0.315 in. (8 mm)	

## Visit LPSmartSide.com for full product catalog









Complete warranty details available at lpcorp.com

# **Board & Batten**

Pair LP[®] SmartSide[®] Vertical Siding with LP SmartSide Trim for your next Board & Batten project

## 38 Series Cedar Texture Vertical Siding (strand)

LENGTH	ACTUAL WIDTH	MINIMUM THICKNESS
16 ft. (192 in.)(4.9 m)	15.94 in. (40.5 cm)	0.315 in. (8 mm)

*Vertical Siding may only span one plate-to-plate. Each vertical application is not to span beyond one floor to ceiling distance, or one floor to top of gable distance. Refer to the LP Vertical Siding Application Instructions at Ipcorp.com for additional limitations.

## 440 and 540 Series Cedar Texture Trim (strand)

LENGTH	ACTUAL WIDTH	MINIMUM THICKNESS
16 ft. (192 in.)(4.9 m)	2.50 in. (6.4 cm)	0.625 in. (16 mm)
16 ft. (192 in.)(4.9 m)	3.50 in. (8.9 cm)	0.625 in. (16 mm)
16 ft. (192 in.)(4.9 m)	2.50 in. (6.4 cm)	0.910 in. (23 mm)
16 ft. (192 in.)(4.9 m)	3.50 in. (8.9 cm)	0.910 in. (23 mm)

## 440 and 540 Series Reversible Trim (fiber)

LENGTH	ACTUAL WIDTH	MINIMUM THICKNESS
16 ft. (192 in.)(4.9 m)	3.50 in. (8.9 cm)	0.625 in. (16 mm)
16 ft. (192 in.)(4.9 m)	3.50 in. (8.9 cm)	0.910 in. (23 mm)

## Visit LPSmartSide.com for full product catalog

Cal. Prop 65 Warning: Use of this product may result in exposure to wood dust, known to the State of California to cause cancer.
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lpsmartside.com

BUILD WITH US.



# **A DIFFERENCE YOU CAN SEE**

With less durable siding, unsightly damage can happen merely from everyday bumps and exposure to the elements.

 $LP^{\circ}$  SmartSide  $^{\circ}$  products combine the rich cedar-grain texture of traditional wood siding with the advanced performance of treated engineered wood – to help extend its curb appeal for years to come.

Read on for powerful evidence of LP SmartSide products' toughness.



All LP[®] SmartSide[®] products are treated to the core through our proprietary SmartGuard[®] process. With four components of protection, the SmartGuard process adds strength and helps LP SmartSide products withstand impacts, damage of freeze-thaw cycles, high humidity, fungal decay and more. See more about how LP SmartSide is made at **youtube.com/lpsmartside**.



# **BIG-TIME BREAK RESISTANCE**

Testing shows that LP[®] SmartSide[®] strand products offer outstanding impact resistance – better than vinyl and fiber cement siding – which means they can stand up better against everything from everyday bumps to airborne storm debris.

## A STRONG DEFENSE AGAINST HAIL

Third-party test results demonstrate that LP SmartSide lap siding resisted hail damage better than fiber cement and vinyl. In fact, the LP SmartSide warranty covers impacts from hail up to 1.75" in diameter.





LESS BREAKAGE FOR EASIER INSTALLATION

Because LP SmartSide is less fragile than fiber cement, it's less prone to accidental breakage during handling and installation. It's also lighter than fiber cement siding and can be carried by just one person without breaking under its own weight. All this helps make LP SmartSide siding faster and easier to handle and install, and results in less waste.

## NASA IMPACT DAMAGE RESISTANCE EVALUATION

To help prove the superior durability of LP SmartSide strand siding, LP Building Products asked the National Aeronautics and Space Administration (NASA) to evaluate the impact damage resistance of both engineered wood strand siding from the LP SmartSide brand and fiber cement siding. Here's a summary of some key findings.





LP SmartSide

Fiber Cement

### When Hit by Small Rocks

Small rocks shot at LP SmartSide strand siding at 107 miles per hour have barely left a mark. The same kinds of rocks can visibly damage fiber cement even at lower speeds.

LP SmartSide

## When Hit by Golf Balls

A golf ball traveling at 63 miles per hour left no visible damage to LP SmartSide strand siding. Golf balls moving at less than 50 miles per hour can visibly damage fiber cement.

LP SmartSide

Fiber Cement

## When Hit by Baseballs

LP SmartSide strand siding has been hit by a baseball at 77 miles per hour and shown no visible damage. Slower-moving baseballs have put holes in fiber cement.

# **NO FEAR OF NATURE**

## STAYS PUT IN HIGH WINDS

LP® SmartSide® Lap Siding is designed to withstand tough storms with wind gusts of up to 200 miles per hour. *Refer to ESR-1301, Table 2B, Lap Siding.* 



## ROT RESISTANT DESPITE MOISTURE & HUMIDITY

Since 1996, LP SmartSide strand substrate siding has undergone brutal testing in Hilo, Hawaii. An average temperature of more than 70 degrees, high levels of humidity and almost 170 inches of annual rainfall make Hilo's climate the perfect breeding ground for fungal decay. Yet our Exterior Exposure Program continues to validate that LP SmartSide siding performs over time.

## RESISTS WARPING & CRACKING FROM HEAT & SUN EXPOSURE

Thanks to industrial-grade binders and resins and a durable primed overlay, LP SmartSide siding has been shown to remain strong when well maintained, even after prolonged exposure to intense sunlight.



## **RESISTS DAMAGE THROUGH FREEZE-THAW CYCLES**

Many substrates delaminate when water is absorbed, then freezes and expands. LP SmartSide products, made with the SmartGuard[®] process, resist water and therefore are less subject to freeze-thaw cycle damage.

## **DEFIES TERMITE DAMAGE**

To put LP SmartSide siding products to the ultimate test, we exposed samples to Formosan termites, widely recognized as one of the world's most destructive pests. Each sample was placed on a grid, surrounded by untreated bait samples, then laid directly on top of termite colonies. The bait samples were damaged within three months – but even after a number of years, the LP SmartSide siding exhibited no structural damage.

#### Untreated Wood vs. LP SmartSide Product

Untreated wood devastated by Formosan termites (upper left) and undamaged LP SmartSide product protected with the SmartGuard process (lower right) during same testing period.



# A STRONG WARRANTY FOR TOTAL PEACE OF MIND

LP has your back with an industry-leading, transferable, limited warranty.

- 5-year 100% labor and material replacement
- 50-year prorated limited warranty on substrate
- *For complete warranty details visit lpcorp.com



Start using LP SmartSide products now. Call (888) 820-0325 or go to lpsmartside.com/advantages/durability.



#### lpsmartside.com

Cal. Prop 65 Warning: Use of this product may result in exposure to wood dust, known to the State of California to cause cancer.

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With 20 years of successful performance, it's easy to see why the LP® SmartSide® brand is one of the fastestgrowing brands for siding materials in the U.S. LP has redefined traditional building materials with treated engineered wood products that are designed to offer game-changing durability, beauty and workability.

## LP Has Workability Nailed

Our treated engineered wood siding cuts out the time you spend dealing with warped and split pieces when properly stored and applied. Virtually every piece leaves the mill straight and ready to use.



- Works and cuts like traditional wood
- Easier to install than fiber cement
- Requires fewer tools
- Weighs less, easier to carry, less breakage than fiber cement
- 16' lengths vs. fiber cement's shorter 12' lengths, often resulting in fewer seams or joints on your structure

## Beauty Designed for Peace of Mind

Choose your style to get the look you want with the beauty of treated engineered wood trim and siding. Our products offer you the versatility to achieve stunning results.



- Pre-primed for optimal paint adhesion
- No efflorescence
- Realistic woodgrain texture
- Longer lengths may mean fewer seams for better aesthetics
- Created with the renewable resource of wood, procured using processes certified by the Sustainable Forestry Initiative (SFI®)
- The LP SmartSide Siding 5/50 year limited warranty is longer and covers more than most fiber cement product warranties
- LP SmartSide limited warranty also includes damage from hail see warranty for details

## **Our Durability Difference**

Our products have the advanced performance of treated engineered wood for durability. Our SmartGuard[®] process adds strength and helps withstand impacts.



- The LP SmartSide limited warranty is longer than most fiber cement product warranties
- LP SmartSide Lap Siding products are more resistant to impact damage from common projectiles like golf balls and baseballs than fiber cement products
- Resists damage of freeze-thaw cycles
- Even with moisture and humidity SmartSide resists fungal decay

### www.LPSmartSide.com

Cal. Prop 65 Warning: Use of this product may result in exposure to wood dust, known to the State of California to cause cancer.



## **Prorated 50-Year Limited Warranty**

This warranty is limited to SmartSide[®] Strand and Fiber Substrate Lap Siding, Panel Siding (including panels with or without SmartFinish[®] or SilverTech[®]), Shake, Perfection Shingle, Trim & Fascia, Soffit, and ArmorStrand[®] Panel ("the Product(s)") installed on structures permanently located in the contiguous United States, Alaska, Hawaii, or Canada.

## 1. Warranty Coverage–Limited 50-Year Substrate Warranty Louisiana-Pacific Corporation

("LP")'s warranty is made to the original purchaser of the Product(s) ("Purchaser"); the original owner of the structure on which the Product(s) are installed; and to the next owner of that structure (together "Owner"). LP's express warranties may not be assigned to any subsequent owners of the structure.

a) LP warrants that the Product(s) will remain free from:
 (i) fungal degradation; (ii) buckling; and (iii) cracking, peeling, separating, chipping, flaking or rupturing of the resin-impregnated surface overlay for a period of 50 years from the date application is completed, when the Product(s) has been stored, handled, applied, finished and maintained in accordance with LP's application, finishing, and maintenance instructions in effect at the time of application.

LP SmartSide Strand Substrate Lap and Panel Siding product(s), LP SmartSide Fiber Substrate Lap and Panel Siding product(s), and ArmorStrand Panel are warranted against buckling when installed up to 16 inches o.c. stud spacing and when stored, transported, handled and maintained in accordance with applicable LP Application Instructions. Buckling is defined as 1/4 inch out of plane covering a distance no greater than 16 inches between studs. Waviness due to misaligned framing, crooked or bowed studs, foundation or wall settling, or improper nailing is not considered buckling. THIS WARRANTY DOES NOT COVER PERFORMANCE OF SIXTEEN (16) FOOT LONG 76 SERIES FIBER SUBSTRATE LAP SIDING IN ALASKA, BRITISH COLUMBIA, HAWAII, NORTHERN CALIFORNIA NORTH OF I-80, OR WEST OF THE CASCADES IN WASHINGTON, OREGON AND CALIFORNIA.

THIS WARRANTY DOES NOT COVER COATINGS APPLIED TO SMARTSIDE PRODUCTS.

LP SmartSide Strand Substrate 76 Series lap siding product(s) and LP SmartSide Strand Substrate 190 Series panel product(s) are warranted against buckling when installed up to 24 inches o.c. stud spacing and when stored, transported, handled and maintained in accordance with applicable LP Application Instructions. Buckling is defined as 3/8 inch out of plane covering a distance no greater than 24 inches between studs. Waviness due to misaligned framing, crooked or bowed studs, foundation or wall settling, or improper nailing is not considered buckling.

LP further warrants that the Product(s) have been treated with the borate-based SmartGuard[®] process during their manufacture to enhance their ability to resist structural damage due to termites and fungal decay.



b) Hail Damage Limited Warranty. LP warrants that its LP® SmartSide® Products will resist damage from hail when properly installed and maintained according to the LP application instructions in effect at the time of installation. Damage under this Hail Damage Limited Warranty is defined as a crack, chip or dent in the surface overlay exceeding 3/8 inch in length or diameter and is subject to the exclusions listed below.

Reimbursement by LP for damage to the SmartSide product is limited to the remedies in this Hail Damage Limited Warranty, and the property owner must follow the procedure in this Hail Damage Limited Warranty.

The following damages are excluded:

- (i) Any damage caused by hail greater than 1.75 inches in diameter;
- (ii) Any damage to the paint on the SmartSide products; and
- (ii) Any injury to persons or property caused by hail damaged SmartSide siding products.

Procedure; Proof of Damages; and Amounts to be paid by LP:

- (i) The property owner shall first make a claim on their property owners insurance, or other applicable insurance policy, and pursue the cost of replacement or repair of the damaged siding. Proof of such claim and its disposition for less than the full cost of replacement or repair for the damaged siding must be provided to LP, and property owner must also affirm that no other claims for the hail damage occurrence were made or are pending.
- (ii) The property owner shall provide evidence to LP through are liable third party such as the National Oceanic and Atmospheric Administration Storm Prediction Center (NOAASPC) that the hail that caused the SmartSide product damage was 1.75 inch in diameter or less.
- (iii) Upon receipt of evidence that the insurance claim proceeds for repair or replacement of the SmartSide product were insufficient to fully repair or replace the SmartSide products, and the evidence that the hail causing the damage was 1.75 inches or less, LP will pay the property owner an amountcalculated as follows:

Amount of payment by LP to property owner = A - B + C

Where the variables A, B and C are defined as:

A is the product replacement cost defined as the then current sales price per square foot for the same or similar SmartSide products, in the same geographic region as the property, multiplied by the square feet of damaged SmartSide product;

B is the homeowner's deductible (if one is applied by the insurance company) plus the portion of the insurance payment received by the property owner specifically for the hail-damaged SmartSide products;

C is the prorated deductible determined by multiplying the total deductible applied by the insurance company and the fraction created by dividing the amount of insurance payment paid specifically for the SmartSide products by the total amount of insurance paid for the hail damage claim. If there is no deductible applied, then C will be zero, and if there is no damage other than SmartSide products, then the fraction will be one (1).

(iv) The amount to be paid by LP, as calculated above, will be reduced according to the proration schedule in Section 2 of the LP® SmartSide® Siding and Trim Limited Warranty. No other costs incurred by the property owner relating to damaged siding, including but not limited to siding removal, disposal, house wrap, or labor costs will be reimbursed under this limited warranty.

## 2. Remedies for Breach of Limited Express Substrate Warranty

THIS SECTION 2 PROVIDES THE SOLE AND EXCLUSIVE REMEDY AVAILABLE TO A PURCHASER OR OWNER OF A STRUCTURE ON WHICH PRODUCT(S) HAS BEEN APPLIED.

In the event of a breach of this Limited Express Warranty (or of any implied warranty not otherwise disclaimed herein), LP will:

- a) during the first 5 years from the date of installation, pay an amount equal to the cost (as established by an independent construction estimator, such as R.S. Means) of repairing or replacing any Product(s) that fails to comply with the provisions of Section 1 a) or 1 b) above, or
- b) during the 6th through the 49th years from the date of installation, pay an amount equal to the cost of similar wood based replacement product, (no labor or other charges shall be paid) less an annual pro rata reduction of 2.22% per year (6th year, 2.22%; 7th year, 4.44%, etc.) such that from and after the 50th year the amount payable under this warranty will be zero.

Any dispute concerning the applicability of the warranty or whether the Product(s) met the manufacturer's standards in accordance with Section 1 shall be submitted to binding arbitration under the Commercial Arbitration Rules of the American Arbitration Association. The jurisdiction of the arbitrator over the dispute shall be exclusive and the decision of the arbitrator shall be binding and non-appealable.

## 3. Exclusion of Other Remedies

IN NO EVENT WILL LP BE LIABLE FOR ANY INCIDENTAL, SPECIAL, MULTIPLE, PUNITIVE, INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY DEFECT IN THE PRODUCT(S) SUPPLIED, INCLUDING, BUT NOT LIMITED TO, DAMAGE TO PROPERTY OR LOST PROFITS.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

## 4. Exclusion of All Other Warranties, Express or Implied

a) THIS LIMITED EXPRESS WARRANTY IS THE ONLY WARRANTY APPLICABLE TO THIS PRODUCT(S) AND EXCLUDES ALL OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANT ABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ANY WARRANTIES OTHERWISE ARISING FROM THE COURSE OF DEALING OR USAGE OF TRADE OR ADVERTISING, EXCEPT WHERE SUCH WARRANTIES ARISE UNDER APPLICABLE CONSUMER PRODUCT WARRANTY LAWS, AND CANNOT BE LAWFULLY DISCLAIMED, IN WHICH EVENT SUCH WARRANTIES ARE LIMITED TO THE MAXIMUM EXTENT PERMITTED BY SUCH LAWS.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

b) NO OTHER EXPRESS WARRANTY HAS BEEN MADE OR WILL BE MADE ON BEHALF OF LP WITH RESPECT TO THESE PRODUCT(S).

## 5. Certain Damages Excluded from Warranty Coverage

This Limited Express Warranty does not cover or provide a remedy for damage that results from:

- a) misuse or improper storage, handling, application, finishing or maintenance; alterations to the structure after the original application of the Product(s); acts of God, such as hurricane, tornado, earthquake, flood or other similar cause beyond the control of LP; design, application or construction of the wall system on which the Product(s) is applied; transport, storage or handling of the Product(s) prior to application;
- b) product(s) that is not applied, finished and maintained in strict accordance with LP's instructions in effect at the time of original application;
- c) swelling and/or edge checking. Such swelling and/or checking normally occurs in all wood products as they expand and contract in response to changes in climactic conditions;
- d) termite damage which does not affect the structural integrity of the Product(s); or

- e) design, application or construction of the structure on which the Product(s) are installed including but not limited to any damage or condition arising from the use of foam sheathing.
- f) use of Fiber Substrate Panel Siding on prefabricated or manufactured homes or structures.
- g) use of ArmorStrand panels on prefabricated or manufactured homes or structures.
- h) textured finish coatings applied to ArmorStrand Panels.

## 6. Responsibility of Purchaser or Owner

COMPLIANCE WITH EACH OF THE REQUIREMENTS SET OUT BELOW IN SECTIONS (a) AND (b) IS A CONDITION TO LP'S OBLIGATIONS UNDER THIS WARRANTY AND THE FAILURE TO COMPLY WITH ANY ONE OR MORE OF THE ITEMS SHALL VOID ANY RIGHTS OWNER AND PURCHASER MAY HAVE AGAINST LP:

- a) Any Purchaser or Owner seeking remedies under this warranty must notify LP, at the number listed below, within 90 days after discovering a possible nonconformity of the Product(s), and before beginning any permanent repair. This notice should include the date on which the Product(s) application was completed. It is the Owner's responsibility to establish the date of installation.
- b) LP must be given a 90-day opportunity to inspect the siding. Upon reasonable notice, the Purchaser or Owner must allow LP's agents to enter the property and structure on which the Product(s) is applied to inspect such Product(s).

## 7. Governing Law

All questions concerning the meaning or applicability of this limited warranty are to be decided under the laws of the State of Tennessee without reference to its choice-of-law rules.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

For further information, please call Customer Support at (800)450-6106, or write to: LP Corporation, 414 Union Street Suite 2000, Nashville, TN 37219.

**Cal. Prop 65 Warning:** Use of this product may result in exposure to wood dust, known to the State of California to cause cancer.



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Note: Louisiana-Pacific Corporation periodically updates and revises its product information. To verify that this version is current, call (800)450-6106.
#### **CEDAR TEXTURE PANEL**

- Rated for structural use by the Engineered Wood Association
- Ideal exterior for high winds or seismic activity
- Eliminates need for additional bracing on load-bearing walls
- Available in Groove or No Groove Cedar Texture panels
- Treated engineered wood strand substrate
- 5-/50-year Limited Warranty, including hail damage coverage*



38 SERIES	CEDAR	TEXTURE	PANEL	8″ O.C.	(STRAND)



	LENGTH	GROOVE	GROOVE WIDTH	ACTUAL WIDTH	MINIMUM THICKNESS
	6 ft. (72 in.)(1.8 m)	8 in. o.c.	3/8 in. (10 mm)	48.56 in. (123.3 cm)	0.315 in. (8 mm)
	7 ft. (84 in.)(2.1 m)	8 in. o.c.	3/8 in. (10 mm)	48.56 in. (123.3 cm)	0.315 in. (8 mm)
	8 ft. (96 in.)(2.4 m)	8 in. o.c.	3/8 in. (10 mm)	48.56 in. (123.3 cm)	0.315 in. (8 mm)
00 in. mm)	9 ft. (108 in.)(2.7 m)	8 in. o.c.	3/8 in. (10 mm)	48.56 in. (123.3 cm)	0.315 in. (8 mm)
	10 ft. (120 in.)(3.0 m)	8 in. o.c.	3/8 in. (10 mm)	48.56 in. (123.3 cm)	0.315 in. (8 mm)

38 SERIES CEDAR TEXTURE PANEL—NO GROOVE (STRAND)



LENGTH	GROOVE	GROOVE WIDTH	ACTUAL WIDTH	MINIMUM THICKNESS
8 ft. (96 in.)(2.4 m)	No Groove	N/A	48.56 in. (123.3 cm)	0.315 in. (8 mm)



#### IPUM THICKNESS 190 SERIES CEDAR TEXTURE PANEL 8" O.C. (STRAND)



190 SERIES CEDAR TEXTURE PANEL—NO GROOVE (STRAND)



76 SERIES CEDAR TEXTURE PANEL 4" & 8" O.C. (STRAND)



76 CEDIEC	CEDAD TEVTU			
70 SERIES	CEDAR IEATU	KE PANEL-IN	U GROUVE	(SIKAND)



LENGTH	GROOVE	GROOVE WIDTH	ACTUAL WIDTH	MINIMUM THICKNESS
8 ft. (96 in.)(2.4 m)	4 in. o.c.	3/8 in. (10 mm)	48.56 in. (123.3 cm)	0.375 in. (10 mm)
9 ft. (108 in.)(2.7 m)	4 in. o.c.	3/8 in. (10 mm)	48.56 in. (123.3 cm)	0.375 in. (10 mm)
10 ft. (120 in.)(3.0 m)	4 in. o.c.	3/8 in. (10 mm)	48.56 in. (123.3 cm)	0.375 in. (10 mm)
8 ft. (96 in.)(2.4 m)	8 in. o.c.	3/8 in. (10 mm)	48.56 in. (123.3 cm)	0.375 in. (10 mm)
9 ft. (108 in.)(2.7 m)	8 in. o.c.	3/8 in. (10 mm)	48.56 in. (123.3 cm)	0.375 in. (10 mm)
10 ft. (120 in.)(3.0 m)	8 in. o.c.	3/8 in. (10 mm)	48.56 in. (123.3 cm)	0.375 in. (10 mm)

LENGTH	GROOVE	GROOVE WIDTH	ACTUAL WIDTH	MINIMUM THICKNESS
8 ft. (96 in.)(2.4 m)	No Groove	N/A	48.56 in. (123.3 cm)	0.375 in. (10 mm)



LEN	GTH	GROOVE	GROOVE WIDTH	ACTUAL WIDTH	MINIMUM THICKNESS
8 ft.	. (96 in.)(2.4 m)	8 in. o.c.	3/8 in. (10 mm)	48.56 in. (123.3 cm)	0.530 in. (13 mm)
9 ft.	(108 in.)(2.7 m)	8 in. o.c.	3/8 in. (10 mm)	48.56 in. (123.3 cm)	0.530 in. (13 mm)
10 f	t. (120 in.)(3.0 m)	8 in. o.c.	3/8 in. (10 mm)	48.56 in. (123.3 cm)	0.530 in. (13 mm)

0.330 in. (8 mm)

LENGTH	GROOVE	GROOVE WIDTH	ACTUAL WIDTH	MINIMUM THICKNESS
8 ft. (96 in.)(2.4 m)	No Groove	N/A	48.56 in. (123.3 cm)	0.530 in. (13 mm)
9 ft. (108 in.)(2.7 m)	No Groove	N/A	48.56 in. (123.3 cm)	0.530 in. (13 mm)
10 ft. (120 in.)(3.0 m)	No Groove	N/A	48.56 in. (123.3 cm)	0.530 in. (13 mm)

0.330 in. (8 mm)









· Wood Framing with Wood Furring Strips

**V-Rustic** · OSB or Plywood Sheathing

Rev. 2 (2015)

1.06



























# BUILT AROUND YOU

## OWNER'S MANUAL

Painting, Staining, Care and Maintenance



Built around you.

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## Introduction

Thank you for your recent purchase of Marvin[®] windows and doors.

At Marvin, we build windows and doors the only way they should be built. One at a time. Made to order. No shortcuts. It's this philosophy of doing it the right way that makes us who we are at Marvin. From the moment we began back in 1912, in Warroad, Minnesota, right up through breakfast this morning. Our commitment to providing customers with unparalleled value and service doesn't stop after the purchase. We're proud to create windows and doors that are truly Built around you[®].

#### How to Use this Manual

This manual provides an overview on how to care for and maintain your new Marvin windows and doors. For information on Signature Products or for questions on service or maintenance not covered in this manual, please contact your local Marvin dealer or visit our website at <u>www.marvin.com</u>.

#### Warranty

Marvin is committed to bringing you products of the highest quality and value. Our made-to-order manufacturing philosophy is one example of our commitment. Our warranty, another.

Please visit the warranty section of our website (<u>www.marvin.com</u>) for full warranty details on your product.



## Windows

#### Window Part Identification

In the following pages you'll find operation and maintenance information on Marvin window products. Refer to the product illustrations for the names of your particular windows, and use the illustration below to help identify window components. Please refer to the Glossary Chapter for terms and their meanings.



* Next Generation Ultimate Double Hung shown for illustrative purposes only.

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#### Window Styles





Ultimate Push Out Awning



Ultimate Awning



Ultimate Double Hung Next Generation



Ultimate Push Out Casement



Ultimate Glider



Ultimate Venting Picture



Round Top/Polygon Direct Glaze



Magnum Tilt Turn



Ultimate French Casement



Magnum Hopper



Ultimate Push Out French Casement

## Ultimate Casement and Ultimate Awning

#### Operation and Maintenance

The powerful single-arm operator is the mechanism that you crank to open and close the Ultimate Casement and Ultimate Awning. To operate the window, first unlock it by pushing the lock handle 'up'. Crank the handle to open the window sash.



To lock the window, crank the window sash closed. Press down on the lock handle. The lock pulls the sash tightly against the weather strip and seals the window.

To keep your Casement or Awning operating smoothly, clean the window track occasionally with a dry brush. To help prevent the sash from sticking, apply a small amount of dry lubricant to the track (available at most home improvement stores) if necessary. Do not use oily lubricants.

#### Using the Wash-Mode Feature

The Ultimate Casement and Ultimate Replacement Casement feature a wash mode system which allows the entire window to be washed from inside the home.

NOTE: Wash mode available on Casement product with 20" widths and greater. Not available on Awning windows.



Crank the handle a couple times. Push down on the arm and push the window away. The arm can be disconnected anywhere within the first 45 degrees of opening. Crank the arm back to the closed position.



Swing the window all the way open and pull it across toward the lock. You now have access to the exterior of the window.

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## Ultimate Push Out Casement Ultimate Push Out Awning

#### **Operation and Maintenance**

Ultimate Push Out products offer a universal look and a more traditional alternative to crank out casements and awnings. To open, turn the lock handle horizontally and push the window sash open. To close, grab the handle and pull the sash to a closed position. Turn the handle downward to lock. The Push Out Casement features a friction limiter which holds the sash in place and allows the sash to lock open at multiple locations. To adjust the friction limiter, follow the <u>Marvin Ultimate Push Out Supplemental instructions</u> (part number 19970045) which can be found on <u>www.marvin.com</u>



To operate the Ultimate Push Out Awning, rotate the lock handle vertically and push the window open. To close, grasp the handle and pull the window sash shut. Lock the window by rotating the lock handle horizontally.



To keep your Ultimate Push Out Casement or Awning operating smoothly, clean the window track occasionally with a dry brush. To help prevent the sash from sticking, apply a small amount of dry lubricant to the track (available at most home improvement stores) if necessary. Do not use oily lubricants.

#### Wash-Mode Feature on the Push Out Casement

The Ultimate Push Out Casement features the revolutionary wash mode system which allows the entire window to be washed from inside the home.

Unlock and open the sash. Swing the window all the way open and pull it across toward the lock. You now have access to the exterior of the window.

#### Wash Mode on Ultimate Push Out Casement



To place sash in wash mode unlock and open the sash. Disconnect friction limiter arm from the sash and push it back under the hardware cover. Swing the window all the way open and pull it across toward the lock. You now have access to the exterior of the window.

## Magnum Tilt-Turn

#### Operation and Maintenance

Marvin Tilt-Turn windows offer a unique operating system that allows you to open the window in one of two ways. Turning the window handle from the downward "locked" position to a 90 degree angle (horizontal) lets the window swing open on the hinges. To open to a tilt position, close the window and turn the handle upright to a vertical position. Now the window will tilt on the hinges along the bottom of the unit.



#### WARNING

Failure to close the sash completely before rotating the handle could result in sash removal.



To watch a video on how to operate the Magnum Tilt-Turn, log on to www.marvin.com and navigate to the video gallery. Or, scan the code with your smart phone or similar device.



Occasionally use a silicone spray lubricant on the hinges and locking mechanism to keep the operation smooth. Be careful not to allow oil to come in contact with window surfaces. Occasionally clean the sill weep and drain channel area out with a vacuum. Interior and exterior finishes can be cared for in the same manner as any other Marvin window or door.

## Magnum Hopper and Magnum Inswing Casement

The Magnum Hopper and Magnum Inswing each offer one half of the operation features of the Magnum Tilt-Turn. The Magnum Hopper tilts open at the top while the Magnum Inswing Casement swings open like a door. Follow the care recommendations in the Magnum Tilt-Turn section.



## Round Top, Polygon and Direct Glaze

#### Maintenance

Most Marvin Round Top and Polygon windows and all Direct Glaze windows are non-operational, meaning they do not open or close, so there are no maintenance requirements for hardware or weather stripping. Clean the glass occasionally, and maintain the interior wood or exterior surfaces on the same schedule as your other windows. For maintenance on operational units, refer to specific product sections.



### Window Options

#### Casement Window Opening Control Device

Marvin offers a factory applied Window Opening Control Device for crank-out Ultimate Casement Products. See the Marvin website for <u>safety and operating information</u> for this optional feature





## Generation Window Opening Control Device

Marvin offers a Window Opening Control Device for the Clad Ultimate Double Hung Next Generation. See the Marvin website for <u>safety and operating information</u> for this optional feature.





To watch a video on how to operate the Window Opening Control Device, log on to www.marvin. com and navigate to the video gallery. Or, scan this code with your smart phone or similar device.

#### Wood Ultimate Double Hung Window Opening Control Device

Marvin offers a Window Opening Control Device for the Wood Ultimate Double Hung. See the Marvin website for <u>safety and</u> <u>operating information</u> for this optional feature.



#### Ultimate Glider Window Opening Control Device

Marvin offers a Window Opening Control Device for the Ultimate Glider. See the Marvin website for <u>safety and operating information</u> for this optional feature





To watch a video on how to remove the Ultimate Glider sash, log on to www.marvin.com and navigate to the video gallery. Or, scan this code with your smart phone or similar device.

## Doors

### Door Styles

#### **Door Part Identification**

In the following pages you'll find operation and maintenance information on Marvin door products. Refer to the product illustrations for the names of your particular doors, and use the illustration below to help identify door components. Please refer to the Glossary Chapter for terms and their meanings.





Ultimate Lift and Slide Door

#### How to Determine Handing of Swinging Doors

- 1. Stand on the side of the door swinging away from you with your back to the hinge of the door.
- 2. Reach out with your closest hand to the door handle
- 3. If your left hand is on the door handle and the door swings into the building, the operation of the door is Left Hand Inswing (LHI).
- 4. If your right hand is on the door handle and the door swings into the building, the operation of the door is Right Hand Inswing (RHI).
- 5. If your right hand is on the door handle and the door swings to the exterior of the building, the operation of the door is Right Hand Outswing (RHO).
- 6. If your left hand is on the door handle and the door swings to the exterior of the building, the operation of the door is Left Hand Outswing (LHO).
- 7. Use the same procedure to determine handing on the active panel of the XX doors standing with your back to the active panel hinge.



#### How to Determine Handing of Sliding Doors

To determine the handing of Sliding Doors, face the door from the exterior. If the panel travels toward the right, the door would be called out as a Right Hand (RH) active. If it moves toward the left it would be a Left Hand (LH) active. The stationary panel is designated with an "O". The active and inactive panels are designated with an "X".



For operating configurations for the Ultimate Lift and Slide door, please refer to the <u>Marvin Architectural Detail Manual chapter</u> online or contact your local dealer.

#### **Operation of Marvin Residential Doors**

To determine the Stationary and Active/Inactive panels of Marvin residential doors, view the door from the exterior of the building.

#### **Swinging Doors**

#### **Operation and Maintenance**

To operate the door from the interior, grasp the active panel's handle lever and rotate it downwards. Pull the door panel towards you for an Inswing door, or push the door outwards for an Outswing door.

Doors require very little maintenance to keep them functioning efficiently. Most problems can be eliminated by keeping the sill clean, ensuring



smooth door operation. Chemicals, solvents, paints, and other harsh substances should never come in contact with the sill. Remove any paint, grease or sealant with 50% isopropyl alcohol. Finished wood doors need to adjust to humidity levels in a home and may warp slightly as seasons change - allow one full year for your door to go through this process. Door handles can be wiped down with a damp cloth to remove fingerprints and smudges.

Marvin doors have a special weep drainage system incorporated into the sill design. Periodically check the sill to be sure the weep system is free from debris. To maintain sill appearance, wash only with mild soap and water solution.



#### Handle Operation for the Multi-Point Lock

Always close and lock your passive panel first and the operating panel (with thumb turn) second. Marvin's multi-point hardware has locking bolts at the head and base of the door. Lifting the handle 45 degrees upward will set the head and foot bolts in place for a secure seal. A 90 degree turn of the key from the outside or the thumb turn on the inside will lock the deadbolt in the handle assembly. When the deadbolt is unlocked, downward pressure on the handle will release the bolts and latch, and the door will open. Engaging only the deadbolt will offer some security. However, to obtain full security and full performance against air and water infiltration, engage the head and foot bolt along with the dead bolt.



engage both the head bolt and foot bolt.

NOTE: An operating passive panel will have either manual head and foot bolts or multi-point hardware.



To watch a video on multi-point lock operation, log on to www.marvin.com and navigate to the video gallery. Or, scan the code to the left with your smart phone or similar device.

### Scenic Doors -Ultimate Outswing Bi-Fold Door

#### **Operation and Maintenance**



The Ultimate Outswing Bi-fold Doors require very little maintenance to keep them functioning efficiently. Most problems can be eliminated by keeping the sill clean, ensuring smooth door operation. Chemicals, solvents, paints, and other harsh substances should never come in contact with the sill. Remove any paint, grease or sealant with 50% isopropyl alcohol, refer to the Ultrex cleaning instructions for further instructions. Finished wood doors need to adjust to humidity levels in a home and may warp slightly as seasons change - allow one full year for your door to go through this process. Door handles can be wiped down with a damp cloth to remove fingerprints and smudges.

## Minimum requirement for the maintenance of hardware is as follows:

Bearings: Apply a light spray of lubricant. Lubricant reduces wear, improves smoothness and further protects against corrosion of the track and bearings. Note that the stainless steel bearings also require periodical cleaning and lubrication that prevent corrosion.

Hangers, Pivots and Brackets: Wipe down with warm soapy water and a soft rag, rinse clean and dry all exposed surfaces well. Apply a light spray of lubricant. Remove excess with a dry cloth.

Hinges: Use warm soapy water on a soft rag. Wipe down the exposed surfaces. Follow with wiping with a clean damp rag. Maintain the original luster of the metal finish by application of a thin film of light machine oil or a corrosion preventing spray. Note that these materials may stain wood material and it's finish.

For operating configurations for the Ultimate Outswing Bi-Fold door, please refer to the <u>Marvin Architectural Detail Manual</u> <u>chapter</u> online or contact your local dealer.

## General Care and Maintenance

#### Semi-Annual Inspection List

- Inspect weather strip for damage or loss of performance. Contact your local Marvin dealer for parts if your weather strip requires replacement.
- □ Inspect exposed hardware screws; tighten if needed.
- Inspect exterior sealant around the outer edges of the window or door frame. Trim any loose sealant and reseal any gaps with a good quality sealant.
- Examine the window or door's interior and exterior finish. Periodic cleaning and touch-up can extend the life of your finish.
- Clean sand, dirt or dust from door and window hinges, sills and tracks.
- □ When soiled, wash the exterior of your doors and windows with warm soapy water; rinse with clean water and dry.

NOTE: In harsh environments, such as near salt water, Marvin Windows and Doors recommends quarterly inspections and maintenance. Salt and other corrosive or abrasive substances must not be allowed to build up on exterior surfaces.

#### Salt Water Care

If you live near a sea coast (salt water), make sure salt and other corrosive or abrasive materials do not build up on the exterior surfaces. Clean the exterior with a mild detergent soap and water at least every three months and more frequently if necessary to prevent build up. Any scratches, chips or areas of abrasion to the exterior coating must be repaired immediately.

#### Condensation

During cold winters, there is a large temperature difference between the interior and exterior of your home. When the temperature drops outdoors, the glass on your windows tend to have a lower surface temperature than other surfaces in your home and is the first place that you'll notice condensation in your home. This is not due to any defect in your window or door, it's simply a sign of needing to reduce the humidity in your home.

If condensation is a chronic occurrence in your home, chances are that you have excessive humidity. If water is accumulating on glass, chances are it is accumulating on other harder to see surfaces such as wall and roof cavities. If left uncontrolled, excess moisture can have serious consequences, including:

- Mold or mildew
- Damp, ineffective insulation
- Warping

condensation".

- Discolored or blistered paint
  Moisture inside walls and attic
- Roof ice build-up
- Excessive interior humidity is more likely to occur in newer or recently remodeled homes with tight, energy efficient construction, causing a build up of moisture to the interior. Information on excessive humidity and how to reduce condensation on your windows can be found on the internet by searching for "window

#### **Cleaning the Glass**

The best method to clean the glass on your Marvin window or door is to first soak the glass surface with a clean water and soap solution to loosen dirt or debris; rinse clean. Next, wash your window or door with a mild glass cleaning solution and a non-abrasive applicator. Use a clean dry cloth to remove cleaning solution from the glass. Finally, wipe off any cleaning solution that made contact with the weather strip, sash or frame.

Do not use razor blades, knives or scrapers for cleaning glass surfaces.

For more information on cleaning the glass or for instructions on how to properly remove the labels from the glass, see the <u>Removing</u> <u>Labels from Glass</u> section of our website (<u>www.marvin.com</u>).

#### Tempered Glass

Certain Marvin windows and doors use tempered glass for safety reasons. Tempered glass is heated, then cooled at an accelerated rate, adding strength and shatter resistance. You may notice some distortion - this is normal and due to the tempered glass fabrication process. The logo in the corner of each piece of tempered glass is required by code and safety regulation.

DO	DON'T			
• Clean glass when dirt and residue appear	• Use scrapers of any size or type for cleaning glass			
<ul> <li>Determine if coated glass surfaces are exposed*</li> </ul>	<ul> <li>Allow dirt and residue to remain on glass for an extended period of time.</li> </ul>			
• Exercise special care when cleaning coated glass surfaces*	<ul> <li>Trap abrasive particles between the cleaning materials and the glass surface</li> </ul>			
• Start cleaning at the top of the building and continue to lower levels	<ul> <li>Allow water or cleaning residue to remain on the glass or adjacent materials</li> </ul>			
<ul> <li>Soak the glass surface with a clean water and soap solution to loosen dirt and debris</li> </ul>	• Begin cleaning without rinsing excessive dirt and debris			
• Use a mild, non-abrasive commercial window cleaning solution	• Use abrasive cleaning solutions or materials			
<ul> <li>Wipe all cleaning solution from window gaskets, sealants and frames</li> </ul>	• Allow metal parts of cleaning equipment to contact the glass			
• Remove any labels on the	• Clean glass in direct sunlight			
glass immediately after product installation	<ul> <li>Allow splashed materials to dry on the glass surface</li> </ul>			
* Such as an energy panel with hard coat Low E.				

## Finishing or Painting Bare Interior Wood

If you have a brand new, bare wood Marvin window or door, you must finish it immediately to prevent possible damage to the wood. Make sure the bare interior surface is clean and dry. Remove any handling marks, debris, or effects of exposure to moisture by sanding lightly with fine sandpaper and wiping clean before applying your choice of finish. Marvin uses a rubber-like material between glass panes and wood sash frames to ensure a weather tight seal. Occasionally, an excess of this silicone sealant, called "squeeze-out", appears around the edge of the glass. You can safely but gently scrape off squeeze-out with a plastic putty knife without damaging the weather tightness of your door or window.

When applying a finish, it is imperative that you do not come in contact with weather strip, vinyl, plastic, metal or any other nonwood parts. Do not apply a finish to any surface which has an abrasive or sliding contact with another surface such as Double Hung and Single Hung Tilt Pacs; Clad Ultimate Double Next Generation, Magnum Double Hung and Single Hung Tilt Pacs, and Magnum Panning Systems. Solvents in paints, stains and varnishes will cause plastic or vinyl parts, in particular, to become brittle and require replacement.

Prior to staining it may be desirable to apply a wood conditioner to obtain a more even finish. Follow the manufacturer's recommended instructions.

#### Lock Status Sensor

If your window or door incorporates a wireless lock status sensor option, do not paint or caulk over the joint between the head jamb part stop and the frame. Wireless transmitters use a small battery that you will need to change at some time.

#### Staining

Apply stain according to the manufacturer's instructions. Apply as many coats of stain as necessary to achieve the desired color. After the stain is thoroughly dry, apply at least two coats of sealer (i.e. varnish or polyurethane).

#### Painting

Use only high quality primer and paint. To provide a good adhesion of paint, a compatible prime coat should be applied. Paint with sash or panels open (or removed) and do not close until thoroughly dry. Apply primer and paint according to the manufacturer's instructions.

## Factory Applied Interior Finishes

#### (Painted, Stained, Clear Coat)

If your product came with one of Marvin's factory-applied interior finishes, avoid getting any cleaning solutions (such as glass cleaner) on the wood as they may discolor the finish. To clean marks off of the wood, use a soft cloth dampened with water. Rub gently to remove the mark. Once the mark has been removed, dry the area with a clean, soft, dry cloth. If the mark is still evident, add 3-5 drops of non-abrasive detergent to a pint of water and mix it well. Rub gently with a damp cloth to remove the mark. Rinse the detergent from the area then dry clean with a soft dry cloth.

If touch-up repair is needed for any scratches or minor dents, follow the instructions on our <u>website</u>.

#### Exterior Wood and Cladding

The exteriors of Marvin windows and doors are made from either wood or extruded aluminum cladding. There are different ways to care for each - make sure you follow cleaning instructions closely to prevent any inadvertent damage to your exteriors.

Periodically inspect sealant around the exterior perimeter of the unit, remove any loose sealant and apply new sealant.

#### Finishing a Wood Exterior

A bare wood, brand new Marvin window or door must be painted immediately to prevent possible damage to the wood, even if the window or door is already primed. Primers function to maximize adhesion between the wood and the paint; they do not offer any protective qualities.

Make sure all bare wood window and door surfaces are clean and dry. Fill exterior nail holes with an exterior grade wood filler and sand smooth. Remove any handling marks, debris, or effects of exposure to moisture by sanding lightly with fine sandpaper and wipe clean before applying paint.

Before finishing, run a strip of masking tape along the edge of the glass, leaving a 1/16" (2 mm) gap between the tape and the wood.

This will allow you to lap the finish coat onto the glass for a proper seal. To make sure you get good paint adhesion, high quality primer should be used. Apply one coat of primer and two coats of top quality paint. Follow the paint manufacturer's instructions. use only a



high quality oil base or latex paint. Paint windows with sash or panels opened (or removed) and do not close or reinstall until thoroughly dry. Carefully follow paint instructions, and make sure you wear adequate hand and eye protection.

Windows and doors with a wood exterior should be inspected and repainted periodically. Any signs of blistering, peeling or cracking in the finish should be immediately repaired to protect the wood. Consult with a local paint store or house painting contractor for the best solution for your needs. If you notice any cracks, they should be filled prior to repainting with a high quality paintable sealant. Smaller cracks may be filled with an exterior grade wood filler.

NOTE: Marvin does not recommend the use of stain or clear coat finishes on exterior surfaces.

#### Attention

Paints, stains and varnishes contain solvents which, when coming in contact with plastics and vinyls used in weather stripping, cause these materials to lose their flexible qualities, making them brittle. Even momentary contact between the finish and the plastic will cause this to occur. Also, do not allow strong detergents, ammonia, solvents, chemicals or other harsh cleaning substances to come in contact with painted exterior surfaces as they can be damaged.

### Aluminum Clad Exterior Care

Marvin clad products have a tough armor of extruded aluminum coated with a minimum of 70% Kynar[®], a fluoropolymer resin enhanced with ceramic pigmentation. This coating translates into a beautiful, low maintenance exterior that retains its original color for years to come.

Use a soft brush such as a long-handled car washing brush, with clear water to remove any bugs, grime, dirt or dust that may gather on the aluminum cladding. Before using any cleaners, test the solution on an inconspicuous area. A thorough clear water rinse should follow.

#### Mildew on Exterior Surfaces

Mildew thrives on warmth and moisture and will grow best under these conditions. It is so adaptable, however, that it can flourish to some degree under all climatic conditions. Mildew growth is usually brown or black in color and, for this reason, may be mistaken for dirt. The presence of mildew on your exterior can be confirmed by placing a drop of household bleach on the suspected mildew area. If small gas bubbles develop in the droplet of bleach and the area bleaches out, mildew does exist and should be removed.

Use this basic solution for controlling exterior mildew problems:

- 1/3 cup (79 ml) powder laundry detergent
- 2/3 cup (158 ml) trisodium phosphate (TSP)
- 1 quart (946 ml) household bleach
- 3 quarts (2839 ml) water

Apply solution with a soft bristle brush using medium pressure. Rinse well with clear water after cleaning.

#### Attention

Stronger concentration of cleaner can damage the coating surface or finish. Always wear protective eyewear and skin protection when using harsh cleaning products.

### Caring for Hardware

#### **General Guidelines**

- Use a clean, soft, damp cloth to polish and remove finger prints and dirt from the window and door hardware.
- Do not use household cleaners, window cleaning solutions, abrasive cleansers, bleaches, solvents, polishes or other chemical compounds to clean your window or door hardware unless specifically recommended by the hardware's manufacturer. These products may remove protective coatings or scratch and remove finishes. Keys, rings or other sharp objects should be kept from striking the hardware.

#### Solid Brass Hardware Maintenance

NOTE: If your window's or door's solid, brightbrass lacquered hardware does not have a PVD finish, please follow the directions below to care and maintain your bright-brass hardware. These instructions do not apply to antique brass, chrome-plated or nickel-plated brass finishes, oilrubbed bronze hardware or PVD hardware finishes.



Solid brass hardware is typically factory-finished with clear lacquer. The durability of lacquer depends on the specific manufacturer involved and the circumstances of wear and environment.

Lacquers are affected by pollutants, temperature extremes, ultraviolet light, marine salt air or spray, paint fumes, and household cleaning solutions which contain bleaches, abrasive, or solvents. Ordinary wear from frequent handling is also a factor. The harsh salt air environment of beach-front properties is perhaps the most severe condition frequently encountered, where lacquers can fail in a matter of weeks.

It is STRONGLY RECOMMENDED that ANY BRASS HARDWARE USED OUTDOORS BE COATED WITH WAX - either a nonabrasive paste furniture wax or a nonabrasive automotive wax. This waxing should be done immediately when the hardware is installed, and maintained frequently thereafter.

For more information on the care and maintenance of solid brass hardware, see the <u>Caring for Window and Door Hardware</u> section of our website.

#### Oil Rubbed Bronze Hardware Maintenance

Your dark oil rubbed bronze finish is not coated with lacquer and is designed to age naturally over a period of time. How quickly this process occurs is both dependant upon usage and whether the product is used externally. The natural ageing process will allow the brass color of the underlying metal to show through along areas of wear.

To retain luster to the product, clean periodically once every 2 or 3 months with a soft cloth and apply a light coating of bee's wax to the product and buff up using a soft cloth. Alternatively you can leave the product to naturally age with elegance.



Do not use any abrasive or non abrasive cleaning materials or solvents when cleaning your oil rubbed bronze product or the Bronze color may be removed completely.

## Hardware with a Physical Vapor Deposition (PVD) Finish

Your PVD finished product has undergone a state of the art process known as Physical Vapor Deposition. A layer of hard-wearing metals are deposited onto the solid brass substrate which means it has been given a tough finish to resist fading and discoloration by direct sunlight, humidity, and most other environmental factors, even in coastal areas.

To help retain the appearance of your PVD products for many years to come, a little periodic maintenance is required to remove any atmospheric deposits from the surface of the product.

- Once every two months clean the surface of the product thoroughly with a soft cloth moistened with light soapy water.
- To remove heavier deposits, a spot of non-abrasive kitchen cleaner may be used with a moistened cloth. Remove traces of water and cleaner and dry thoroughly with a soft cloth.
- When using any proprietary cleaner always follow the advice given by the manufacturers in handling cleaning materials.
- Do not use any abrasive cleaning materials or solvents when cleaning your PVD products.

#### Gallery Collection Hardware

Marvin Gallery Collection Hardware features designer handle sets from leading hardware manufacturers that compliment a wide variety of architectural and design styles. For care and maintenance recommendations, please consult the specific hardware manufacturer.

Bouvet[®] - <u>www.bouvet.com</u> Rocky Mountain - <u>www.rockymountainhardware.com</u> Ashley Norton[®] - <u>www.AshleyNorton.com</u> Baldwin[®] - <u>www.baldwinhardware.com</u>

#### Lacquer Failure

The initial symptom of lacquer failure consists of tiny darkened spots on the brass. If tarnishing is allowed to continue, the brass will eventually acquire an overall greenish brown "antique" look which some people enjoy. To restore a bright brass appearance, the hardware must be stripped of any remaining lacquer, buffed to luster, then either relacquered, waxed or routinely polished.

Old lacquer can be stripped using very fine #0000 steel wool soaked in a light oil or soapy solution to reduce abrasion marks. Soaking the hardware in lacquer thinner might be necessary to loosen stubborn lacquer, but be certain the hardware contains no plastic parts, which the thinner will destroy. Then the brass can be polished either by hand with a soft cloth, or on a buffing machine, using brass polish or "wadding" compounds. Appropriate supplies can sometimes be obtained in kit form, such as Gillespie Refinishing Kit.

Do-it-yourself aerosol lacquers are seldom successful, and professional lacquers require very specialized equipment an facilities to be safely applied. The best lacquers are often two component "epoxy" type and are applied by opposite electrostatic charges on the metal and spray equipment. Special air cleaning, fume evacuation and explosion proof equipment is needed. A number of commercial plating or metal refinishing shops can be found in most large cities, and are apt to have the necessary equipment and experience to refinish your hardware. After relacquering, the hardware should be waxed just like new hardware.

### Screens, Interior Shades and Energy Panels

#### Screen Maintenance

If you live in a cold climate, it is recommended that during the winter months, you remove any exterior screens to avoid snow and ice from collecting, causing the mesh to sag.

The most effective method of cleaning the screens on your windows and doors is to remove the screens, lay them on a flat clean area (such as a sidewalk), and spray off any dust or debris with water from your garden hose. Allow the screens to completely air dry before replacing in the window or door. Contact your Marvin dealer if you require assistance with screen replacement.

#### Attention

Marvin screens are designed to stand up to everyday use. However, these screens are not intended to act as a safety device. Every screen installed on Marvin products has a nonremovable label affixed to it that states the following: "WARNING: Screen will not stop child from falling out window. Keep child away from open window."

NOTE: Certain size screens have a factory bow in the frame; this is to ensure a snug fit and is NOT a defect.

#### Window Screen Removal and Installation

Some screens utilize screen lifts located on the bottom of the screen. To remove the screen, simply pull up on the screen lift and pivot the screen toward you from the bottom and remove. Release tension and guide the screen from the window. To install, reverse the procedure.

Other screens utilize a plunger pin system. To remove the screen, grasp the plunger pins and pull inward until the pins clear the screen lip on the frame cladding. On the Clad Ultimate Double Hung, push the screen outward, grasp the screen frame and pull down slightly. Turn the screen sideways and bring it into the dwelling. To reinstall the screen, place the screen sideways through the window frame, turn to an upright position and place the top plunger pins against the screen lip at the head jamb. Pull the screen toward the interior, holding the plunger in the open position. Once flush against the frame, release the plunger to lock against the screen lip.

NOTE: For easier removal of the screen, Marvin recommends that you remove the operating sash on double hung units.

#### Wood Swinging Screen - Windows

For information on how to install or remove the Wood Swinging Screen, please refer to the <u>Marvin Push Out</u> <u>Casement Wood Screen Installation</u> <u>Instruction</u> (part number 19970098) on www.marvin.com.



#### Retractable Screen -Ultimate Double Hung Next Generation

To operate the Retractable Screen on the Next Generation Double Hung product, grasp the pull bar with one hand placed on both ends of the pull bar. With a downward motion, pull the screen down to the desired latch point, at the check rail or sill. Latches will bypass the check rail latch point when pulling the screen down.



To return the screen to the concealed position, retract the latches, by pulling inwards on the finger tabs, at both ends of the pull bar simultaneously. Lift the pull bar past the latch points at the sill or check rail. Latches must



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be fully retracted at the sill and check rail latch points when lifting the screen up. Gently assist the screen to the concealed position by pushing the pull bar upward to the top of the unit.
## Retractable Screen - Ultimate Casement, Ultimate Awning

To operate the Retractable Screen on a Casement product, grasp the pull bar and slide the screen horizontally until the pull bar meets the opposite jamb. For an Ultimate Awning, the screen operates vertically from top to bottom. To close, slide the pull bar back to its original position.

For information on how to install or remove the Retractable Screen, please refer to the <u>Retractable Screen Installation and Service</u> <u>instruction</u> (part number 19970288) on <u>www.marvin.com</u>.



## Interior Shade - Ultimate Casement, Direct Glaze, Double Hung, Sliding Door and Swinging Door

To operate the Interior Shade, grasp the pull bar with both hands and slide interior shade vertically on Ultimate Casement, Direct Glaze, Double Hung and Swinging Door. Grasp Sliding Door pull bar at handle height and move horizontally. To close, slide the pull bar back into its original position.

For information on care and cleaning of your Interior Shade please refer to the Marvin Interior Shade Care and Cleaning Instruction (part number 19915280).

For information on installing of your Interior Shade please refer to the Marvin Interior Shade Sliding Door installation Instruction (part number 19915668), Marvin Interior Shade Swinging Door installation instruction (part number 19915149), or the Marvin Interior Shade UCA/DG installation instruction (part number 19915147).

For any further information please refer to <u>marvin.com</u>.



## Standard Swinging Screen - Doors

To remove the standard swinging screen door, first open the active screen panel and disconnect the autocloser. Remove the  $\#6 \times 1/2"$  (13mm) screw attaching the closer to the head jamb bracket. Then, remove the hinge pins from the active screen panel hinges, remove the panel from the hinges and store. On XX configurations, open the passive screen panel and remove the hinge pins in the same manner as the active.

Adjust the closing tension on your swinging screen door by loosening the two screws attaching the door bracket to the screen panel. Slide the bracket and closer left or right as needed and tighten the screws. Adjust the closing speed by tightening or loosening the adjusting screw located on the cylinder assembly.



## Ultimate Swinging Screen - Doors

The Ultimate Swinging Screen for Inswing Doors has a mesh screen option which can be removed and replaced by a storm insert. Directions on how to remove one and install the other can be found in the <u>installation</u> <u>instructions</u> (part number 19970256) or by visiting the <u>installation section</u> of the marvin website (<u>www.marvin.com</u>).



## Standard Sliding Screen - Doors

To remove the Standard Sliding Screen panel, start at the bottom corner and pry the screen panel guide up with a putty knife. Pull the guide off the screen sill track and work your way to the other end. Once the sill end of the screen panel is completely released from the sill track, pivot the bottom of the screen out and



Panel guide

push the panel toward the head jamb. This will release the screen panel rollers from the head jamb screen track. Remove the panel from the door.

The screen can be adjusted from the interior by loosening or

tightening the top roller screw nearest the locking jamb. Adjust the screen so that it is parallel to the locking jamb or casing. An even reveal should be achieved along the entire height of the jamb. If more adjustment is necessary, the other roller



adjustment screw can be used but the screen panel will need to be removed for access.

More information on how to install or remove the screen can be found in the <u>instructions</u> (part number 11701015) or by visiting the installation section of the marvin website <u>www.marvin.com</u>.



To watch a video on how to remove the standard sliding screen, log on to www.marvin.com and navigate to the video gallery. Or, scan this code with your smart phone or similar device.

## Ultimate Sliding Screen - Doors

To remove the Ultimate Sliding Screen, simply remove the plugs from the screen track to reveal the access hole. Remove the screws attaching the screen to the roller bar and lift it off the guide.

Screen adjustment is possible by loosening or tightening the adjustment screw found in the roller bar assembly. Slide



screen panel so that adjustment screw lines up with access hole. Turn the adjustment screw(s) counterclockwise or clockwise. An even reveal should be achieved along the entire height of the jamb. For detailed instructions on how to install the screen, see our installation instructions or go to our website www.marvin.com.



To watch a video on how to remove the Ultimate Sliding Screen, log on to www.marvin.com and navigate to the video gallery. Or, scan this code with your smart phone or similar device.

## Wood Combination for Wood Inswing Door

A Wood Combination is a wood framed assembly containing an interchangeable storm panel and screen. This door is installed on the exterior of the Marvin Swinging French Door. For assembly and installation information see the <u>installation instructions</u> (part number 19970612) or visit <u>www.marvin.com</u>.

## **Energy Panels**

Occasionally make sure that all fasteners on your energy panels are closed securely. Clean and maintain glass the same way as your other windows for regular interior and exterior care.

NOTE: Hard coat Low E energy panels require a cleaning solution of one part vinegar with ten parts water.

## Lock Status Sensor

If you have any questions regarding our lock status sensor option, visit our website, <u>www.marvin.com</u> and search for "lock status sensor".

## Contact Marvin

If you are having a problem not explained in this manual, or if the solution seems inappropriate for your situation, contact your local Marvin dealer. If you are unsure who your local dealer is, visit our <u>website</u> and use the "Find a Dealer" locator tool in the upper right hand corner of the home page. While there, visit our <u>troubleshooting section</u> to find more information on your problem.

If you need help identifying the appropriate dealer or distributor, or if you feel the timeliness of the response was not adequate, please contact Marvin Windows and Doors to initiate the service request resolution. You may contact Marvin at 1-888-537-7828 or visit our website (<u>www.marvin.com</u>) and select "Contact Us".

When contacting your Marvin dealer, please provide them with the "Customer Service Serial Number" etched on the corner of your Marvin window or door. Also if you know the approximate purchase date of your products, please provide that information as well.





## **TECHNICAL GUIDE**

PROJECTED, CASEMENT and FIXED

Architectural Windows

## 2250i, 3250i and 4250i-XLT INvent™ Retro Series







## **Features**

- ✓ 2 7/8", 3 7/8" and 4 7/8" frame depth with extra-wide polyamide thermal barrier
- ✓ AAMA AW-100 Performance Class
- ✓ Beveled, cove, ogee or square exterior face to replicate putty-glazed window profiles
- ✓ Equal sight line option at vents and fixed lites (2250i-XLT)
- ✓ Fixed, project-out awning, project-in hopper, or casement
- Flush vent construction reduces collection of dust and debris
- Muntins available for historical renovation choose from true divided lites, removable grids, between-glass, or tape-applied options
- ✓ Dual glazed option with hinged or lift-out access panels
- ✓ 5/8" or 1" between-glass Venetian blinds available
- ✓ Slide-in heavy duty steel anchors
- ✓ 1/8" principal wall thickness
- ✓ Multi-lock hardware option for improved accessibility
- ✓ Head, sill and jamb receptors available
- Broad selection of renovation panning
- Offered through Advantage by Wausau
- ✓ NFRC labeled
- High recycled content aluminum framing







DISCLAIMER: Wausau Window and Wall Systems takes no responsibility for product selection or application, including, but not limited to, compliance with building codes, safety codes, laws, merchantability or fitness for a particular purpose; and further disclaims all liability for the use, in whole or in part, of this Technical Guide in preparation of project specifications and/or other documents. Technical Guides are subject to change at any time, without notice, and at Wausau's sole discretion. ©2014 Wausau

## Select Seam®

**Select Seam** is a concealed fastener, non-structural, batten seam metal roof system.

**Select Seam's** wide pan appearance offers a clean, classic architectural effect ideal for institutional and commercial work, such as educational facilities, commercial office buildings, hotels, fire stations and retrofit applications.



Section Properties									
Gauge	Base Steel Thickness (in)	Yield (ksi)	Tensile (ksi)	Wt. (Ibs/ft²)	l+ (in⁴/ft)	S+ (in³/ft)	l- (in³/ft)	S- (in³/ft)	
12" Select Se	12" Select Seam (13¼" Wide Batten)								
24	0.0232	50	65	1.49	0.0039	0.0032	0.0063	0.0073	
22	0.0294	50	65	1.86	0.0039	0.0032	0.0063	0.0096	
16" Select Se	am (17¼" Wi	de Batten)							
24	0.0232	50	65	1.36	0.0029	0.0024	0.0047	0.0055	
22	0.0294	50	65	1.71	0.0029	0.0024	0.0047	0.0072	
21¼" Select \$	21¼" Select Seam (22½" Wide Batten)								
24	0.0232	50	65	1.25	0.0021	0.0019	0.0036	0.0042	
22	0.0294	50	65	1.57	0.0021	0.0019	0.0036	0.0054	
NOTEO The		- 14		the loss of a file set in the		2/0			

**NOTES:** The moments of inertia, I⁺ and I⁻, presented for determining deflection are:  $(2I_{Effective} + I_{Gross})/3$ 

## standard features

- Factory applied sealant is a standard for Narrow Batten, except for curved applications and short cuts.
- Available Batten width options: Narrow Batten: 12", 16" and 21¼" Wide Batten: 13¼", 17¼" and 22½"
- Available in 24ga and 22ga in standard finishes. (Refer to AEP Span Color Charts for full range of color options, prints textures, finishes and paint systems).
- Custom manufactured sheet lengths from 5'-0" to 45'-0".
- Recommended minimum slope of 3:12.
- Performance testing (ratings based on specific assemblies): Wind uplift – Meets UL 580- Class 90 wind uplift requirements (24 ga minimum). Per ASTM E1592: 12", 16" Narrow Batten, 17¼" Wide Batten. Air & water infiltration per ASTM E283 and ASTM E331: Narrow Batten only with sealant.
- Panel (12" and 16") evaluated by accredited third party. All structural performance data is contained within an IBC/IRC 2015 code compliance report.

## optional features

- Short cut sheets from 5'-0" to 1'-0". Additional fees and lead times may apply.
- Longer lengths available up to 60'-0". Additional fees and lead times may apply.
- Subtle striations available between ribs to reduce the appearance of oil canning.
- Stucco embossed Subject to 500 square feet minimum. Additional fees and lead times may apply.
- Available tapered for unique architectural applications.
- Factory applied butyl sealant for ease of installation and weathertightness.
- Narrow Batten panels can be field curved to a 4' radiused application.

#### DESCRIPTION

The EPIC Collection delivers custom luminaire flexibility with high quality, yet availability expectations of standard specification grade product. The EPIC Collection can be dressed to suit any application. Recognizing evolving environmental and legislative trends, the EPIC Collection delivers world class LED optical and performance solutions to the decorative luminaire marketplace.

injection-molded acrylic. Optics are

precisely designed to shape the

technology, creates consistent

distributions with the scalability

to meet customized application

requirements. Offered Standard in

4000K (+/- 275K) CCT and nominal

70 CRI. Optional 3000K CCT and

5000K CC. For the ultimate level

of spill light control, an optional

house-side shield accessory can

be field or factory installed. The

house-side shield is designed to

LED drivers mount to die-cast

and prolonged life. Standard

60Hz or 480V 60Hz operation,

heat sinking, operation efficacy,

SL3 or SL4 optics.

Electrical

seamlessly integrate with the SL2,

aluminum back housing for optimal

drivers feature electronic universal

voltage (120-277V 50/60Hz), 347V

greater than 0.9 power factor, less

that 20% harmonic distortion, and

is suitable for operation in -40°C

to 40°C ambient environments.

All fixtures are shipped standard

optics, maximizing efficiency and

application spacing. AccuLED Optic

## Invue

Catalog #		Туре
Project		
Comments		Date
Prepared by		

#### SPECIFICATION FEATURES

#### Construction

TOP: Cast aluminum top housing attaches to cast aluminum mounting arm hub with four stainless steel fasteners. One-piece silicone gasket between mounting hub and top casting seals out moisture and contaminants. (See the mounting accessories section for a full selection of mounting arms. (Only these arms are compatible with the Epic luminaire). MIDSECTION: Continuous silicone gaskets seal lens to top casting and shade. The mid section features cast aluminum construction and stainless steel assembly. SHADES: Heavy gauge precision spun aluminum shades offer superior surface finish and consistency in form. DOORFRAME: Die-cast aluminum 1/8" thick door and doorframe seal to underside of shade with a thick wall continuous silicone gasket. Mounting hub ships attached to mounting arm.

#### Optics

Choice of twelve patented, highefficiency AccuLED Optic[™] technology manufactured from

#### DIMENSIONS



See configurations for more detailed information.



Warranty Five-year warranty.

with 10kV/10kA common -

and differential - mode surge

protection. LightBARs feature

and IP66 enclosure rating and

maintain greater than 95% lumen

maintenance at 60,000 hours per

IESNA TM-21. Occupancy sensor

and dimming options available.

Housing is finished in five-stage

super TGIC polyester powder coat

Finish





## ECM/EMM EPIC MEDIUM LED

1 - 4 LightBARs Solid State LED

#### DECORATIVE AREA LUMINAIRE

CERTIFICATION DATA UL/cUL Listed IP66 LIghtBARs LM79 / LM80 Compliant 2G Vibration Tested

#### ENERGY DATA

ISO 9001

Electronic LED Driver >0.9 Power Factor <20% Total Harmonic Distortion 120-277V 50/60Hz, 347V/60Hz, 480V/60Hz -40°C Minimum Temperature 40°C Ambient Temperature Rating

EPA Effective Projected Area: (Sq. Ft.) 0.94

SHIPPING DATA Approximate Net Weight: 45 lbs. [20 kgs.]



#### TD500028EN 2017-03-29 10:21:56



CONFIGURATIONS



#### POWER AND LUMENS BY BAR COUNT (21 LED LIGHTBARS)

Number of LightBARs		E01	E02	E03	E04		
Drive Curre	ent	350mA Drive Current					
Power (Watts)		25W	52W	75W	97W		
Current @	120V (A)	0.22	0.44	0.63	0.82		
Current @	277V (A)	0.10	0.20	0.28	0.36		
Power (Wa	tts)	31W	58W	82W	99W		
Current @	<b>347V</b> (A)	0.11	0.19	0.28	0.29		
Current @	480V (A)	0.09	0.15	0.20	0.21		
To	Lumens	2,948	5,896	8,844	11,792		
12	BUG Rating	B1-U0-G1	B2-U0-G2	B3-U0-G3	B3-U0-G3		
<b>T</b> 0	Lumens	2,936	5,873	8,809	11,745		
13	BUG Rating	B1-U0-G1	B2-U0-G2	B3-U0-G3	B3-U0-G3		
<b>T</b> 4	Lumens	2,876	5,752	8,627	11,503		
T4	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G2	B2-U0-G3		
5MQ	Lumens	3,054	6,108	9,161	12,215		
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2		
514/0	Lumens	2,987	5,975	8,962	11,949		
5000	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2		
EXO	Lumens	2,982	5,963	8,945	11,926		
570	BUG Rating	B2-U0-G1	B3-U0-G2	B3-U0-G3	B4-U0-G3		
01.0	Lumens	2,878	5,756	8,634	11,512		
5L2	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2		
01.0	Lumens	2,894	5,788	8,682	11,576		
5L3	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2		
014	Lumens	2,823	5,647	8,470	11,294		
314	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2		
DW/	Lumens	2,957	5,915	8,872	11,829		
RVV	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3		
	Lumens	2,616	5,231	7,847	10,462		
SLL/SLK	BUG Rating	B1-U0-G2	B1-U0-G2	B1-U0-G3	B2-U0-G3		

Number of	LightBARs	F01	F02	F03	F04
Drive Curre	ent		1A Drive	Current	
Power (Wa	tts)	26W	26W 55W 78W		102W
Current @	120V (A)	0.22	0.46	0.66	0.86
Current @	<b>277V</b> (A)	0.10	0.21	0.29	0.37
Power (Wa	tts)	32W	60W	85W	105W
Current @	347V (A)	0.11	0.19	0.28	0.30
Current @	480V (A)	0.09	0.15	0.21	0.22
T2	Lumens	2,434	4,867	7,301	9,735
12	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3
T2	Lumens	2,424	4,848	7,272	9,696
13	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3
<b>T</b> 4	Lumens	2,374	4,748	7,122	9,496
14	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G2	B2-U0-G2
5MQ	Lumens	2,521	5,042	7,563	10,084
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G2
514/0	Lumens	2,466	4,932	7,398	9,864
5₩0	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2
EVO	Lumens	2,461	4,923	7,384	9,845
570	BUG Rating	B2-U0-G1	B3-U0-G2	B3-U0-G2	B4-U0-G3
01.2	Lumens	2,376	4,752	7,127	9,503
512	BUG Rating	B1-U0-G1	B1-U0-G1	B2-U0-G2	B2-U0-G2
01.2	Lumens	2,389	4,778	7,167	9,556
5L3	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G2	B2-U0-G2
014	Lumens	2,331	4,662	6,993	9,323
514	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G2	B2-U0-G2
DW/	Lumens	2,441	4,883	7,324	9,765
RVV	BUG Rating	B1-U0-G1	B2-U0-G2	B3-U0-G3	B3-U0-G3
	Lumens	2,159	4,318	6,478	8,637
SLL/SLR	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G3	B1-U0-G3

#### LUMEN MAINTENANCE

Ambient Temperature	25,000 Hours*	50,000 Hours*	60,000 Hours*	100,000 Hours	Theoretical L70 (Hours)
25°C	> 99%	> 97%	> 96%	> 93%	> 450,000
40°C	> 98%	> 97%	> 96%	> 92%	> 425,000
50°C	> 97%	> 96%	> 95%	> 91%	> 400,000

^{*} Per IESNA TM-21 data.



#### LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
10°C	1.02
15°C	1.01
25°C	1.00
40°C	0.99
50°C	0.96



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Specifications and dimensions subject to change without notice.

#### CONTROL OPTIONS

#### 0-10V (DIM)

This fixture is offered standard with 0-10V dimming driver(s). The DIM option provides 0-10V dimming wire leads for use with a lighting control panel or other control method.

#### Photocontrol (PC, PER and PER7)

Optional button-type photocontrol (PC) and photocontrol receptacles (PER and PER7) provide a flexible solution to enable "dusk-to-dawn" lighting by sensing light levels. Advanced control systems compatible with NEMA 7-pin standards can be utilized with the PER7 receptacle.

#### Dimming Occupancy Sensor (MS/DIM-LXX, MS/X-LXX and MS-LXX)

These sensors are factory installed in the luminaire housing. When the MS/DIM-LXX sensor option is selected, the occupancy sensor is connected to a dimming driver and the entire luminaire dims when there is no activity detected. When activity is detected, the luminaire returns to full light output. The MS/DIM sensor is factory preset to dim down to approximately 50 percent power with a time delay of five minutes. The MS-LXX sensor is factory preset to turn the luminaire off after five minutes of no activity. The MS/X-LXX is also preset for five minutes and only controls the specified number of light engines to maintain steady output from the remaining light engines.

These occupancy sensors includes an integral photocell that can be activated with the FSIR-100 accessory for "dusk-to-dawn" control or daylight harvesting - the factory preset is OFF. The FSIR-100 is a wireless tool utilized for changing the dimming level, time delay, sensitivity and other parameters.

A variety of sensor lens are available to optimize the coverage pattern for mounting heights from 8'-40'.



#### LumaWatt Pro Wireless Control and Monitoring System (LWR-LW and LWR-LN)

The LumaWatt Pro system is a peer-to-peer wireless network of luminaire-integral sensors for any sized project. Each sensor is capable of motion and photo sensing, metering power consumption and wireless communication. The end-user can securely create and manage sensor profiles with browser-based management software. The software will automatically broadcast to the sensors via wireless gateways for zone-based and individual luminaire control. The LumaWatt Pro software provides smart building solutions by utilizing the sensor to provide easy-to-use dashboard and analytic capabilities such as improved energy savings, traffic flow analysis, building management software integration and more.

For additional details, refer to the LumaWatt Pro product guides.







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#### ORDERING INFORMATION

Sample Number: ECM-E04-I ED-E1-T2-EL-GM

Product Family ¹	Number of LightBARs ^{2, 3}	Lamp Type	Voltage	Distribution	Mid Section Type	Shade Type	Color 5
ECM=Epic Classical Medium EMM=Epic Modern Medium	E01=(1) 21 LED LightBAR E02=(2) 21 LED LightBARs E03=(3) 21 LED LightBARs E04=(4) 21 LED LightBARs F01=(1) 7 LED LightBARs F02=(2) 7 LED LightBARs F03=(3) 7 LED LightBARs F04=(4) 7 LED LightBARs	LED=Solid State Light Emitting Diodes	E1=Electronic (120-277V) 347=347V 480=480V ⁴	T2=Type II T3=Type II T4=Type IV SL2=Type II w/Spill Control SL3=Type II w/Spill Control SL4=Type IV w/Spill Control 5MQ=Type V Square Medium 5WQ=Type V Square Wide 5XQ=Type V Square Extra Wide RW=Rectangular Wide SLL=90° Spill Light Eliminator Left SLR=90° Spill Light Eliminator Right	SO=Solid SR=Solid Rings	SN=Straight Narrow SW=Straight Wide BL=Bell FL=Flute	AP=Grey BZ=Bronze BK=Black DP=Dark Platinum GM=Graphite Metallic WH=White
Options (Add as Suff	ïx)	Accessories (Or	der Separately) 14				
2L=Two Circuits ⁶ 7030=70 CRI / 3000K 7050=70 CRI / 3000K 8030=80 CRI / 3000K LCF=LightBAR Cover Finish MS-LXX=Motion Ser MS/X-LXX=Motion Ser Switchin PMXX=Pendant Mou Inches, 9.5" n HSS=Factory Installe DIM=0-10V Dimming LWR-LW=LumaWatt f Lens for 8' LWR-LN=LumaWatt f	CCT ⁷ CCT ⁷ CCT ⁷ Plate Matches Housing asor for ON/OFF Operation ⁸ Sensor for Bi-Level g ⁹ nt (XX=Pendant Length in in - 48.0° max) ¹⁰ d House Side Shield ¹¹ Driver ¹² Pro Wireless Sensor, Wide - 16' Mounting Height ¹³ Pro Wireless Sensor, Narrow ' - 40' Mounting Height ¹³	Classical VA6150-XX=Bis VA6150-XX=Bis VA6152-XX=Tra VA6153-XX=Tra VA6153-XX=Tra VA6154-XX=Bis VA6156-XX=Bis VA6156-XX=Tra VA6159-XX=Tra VA6160-XX=Tra VA6160-XX=Tra VA6160-XX=Tra VA6163-XX=Tra VA6163-XX=Tra VA6163-XX=Tra VA6163-XX=Tra VA6163-XX=Tra VA6163-XX=Tra VA6163-XX=Tra VA6163-XX=Tra VA6103-XX=Tra VA6103-XX=Bis VA6103-XX=Bis VA6103-XX=Bis VA6103-XX=Bis VA6103-XX=Bis VA6103-XX=Bis VA6103-XX=Bis VA6103-XX=Bis VA6103-XX=Bis VA6103-XX=Bis VA6103-XX=Bis VA6103-XX=Tra VA6110-XX=Bis VA6103-XX=Tra VA6110-XX=Bis VA6103-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113-XX=Tra VA6113	shop Wall Mount A shop Wall Mount A ditional Wall Mou aditional Wall Mou aditional Wall Mou shop Single Pole N shop Single Pole N shop Twin Pole Mo aditional Single Po- aditional Twin Pole aditional Wall Mount A shop Single Pole N shop Single Pole N shop Single Pole N shop Single Pole N shop Twin Pole Mo shop Single Pole N shop Twin Pole Mo aditional Single Po- aditional Single Po- aditional Single Po- aditional Single Po- aditional Single Po- aditional Single Po- aditional Twin Pole aditional Twin Pole	Arm Arm with Cross Rod Junt Arm Junt Arm with 45° Strap Mount Arm Mount Arm with Cross Rod John Arm John Arm with Cross Rod John Arm John Arm with Cross Rods Johe Mount Arm with Rounded Upper Bar Johe Mount Arm with 45° Upper Bar 16 Johe Mount Arm with 45° Upper Strap a Mount Arm with 45° Upper Bars a Mount Arm with 80 unded Lower Bars a Mount Arm with 80 unded Lower Bars a Mount Arm with 45° Upper Bars b Mount Arm with 45° Upper Straps Arm Arm Arm Arm Arm Arb 45° Upper Straps Mount Arm With 45° Upper Straps Johe Mount Arm With Rounded Upper Bar Johe Mount Arm With Rounded Upper Bar Johe Mount Arm With 45° Upper Bar Johe Mount Arm With 45° Upper Bar Johe Mount Arm With 45° Upper Bar Johe Mount Arm With Rounded Upper Bar Johe Mount Arm With 80 Upper Bar Johe Mount Arm With 80 Upper Bar Johe Mount Arm With 80 Upper Bar Johe Mount Arm With 75° Upper Bars a Mount Arm With Rounded Upper Bars a Mount Arm With Rounded Lower Bars a Mount Arm With 80 Upper Bars	GA/RA1016=N OA/RA1027=N OA/RA1027=N OA/RA1027=N OA/RA1013=P LB/HSS-21=Fi "f" Accessory Op V=Victorian Fi A=Architectur. N=Nostalgic F R=NEMA Twis 15 5 15	NEMA Twistlock Photocont IEMA Twistlock Photocont IEMA Twistlock Photocont IeMA Twistlock Photocontrol Istalled House Side S 2" LightBARs ^{11,16} eld Installed House Side S 2" LightBARs ^{11,16} tions ¹⁷ nial ¹⁸ al Finial ¹⁸ inial ¹⁸ tlock Photocontrol Recept	rol - Multi-Tap rol - 480V rol - 347V hield for hield for

NOTES:

NOTES:
1. Arm not included. Order separately. See accessories.
2. Standard 4000K CCT and greater than 70 RI.
3. 21 LED LightBAR powered by 350mA and 7 LED LightBAR powered by 1A.
4. Only for use with 480V Wye systems. Per NEC, not for use with ungrounded systems, impedance grounded systems or corner grounded systems (commonly known as Three Phase Three Wire Delta, Three Phase High Leg Delta and Three Phase Corner Grounded Delta systems).
5. Custom and RAL color matching available upon request. Consult your lighting representative at Eaton for more information.
6. Low-level output varies by bar count. Consult factory. Requires quantity of two or more LightBARs.
7. Consult customer service for lead times and multiplier.
8. Sensor mounted to the luminaire. Available in E02-E04 and F01-F04 configurations. Replace "X" with mounting height in feet for proper lens selection, (e.g., MS-L25). Consult factory for additional information.
9. Sensor mounted to the luminaire. Available in E02-E04 and F01-F04 configurations. Replace "X" with mounting height in feet for proper lens selection, (e.g., MS-L25). Consult factory for additional information.
9. Sensor mounted to the luminaire. Available in E02-E04 and F01-F04 configurations. Replace "X" with number of LightBARs operating in low output mode and replace XX with mounting height in feet for proper lens selection, (e.g., MS/3-L25). Consult factory for additional information.
10. Pendant mount option "PMXX" must be used with Invue Pendant mount kit only. Includes pendant pipe, swivel hangar and canopy cover. Other pendant lengths can be specified in inches (XX). Minimum pendant length is 9-1/2". For lengths above 48", consult your lighting representative at Eaton for more information.
10. Only for use with SL2, SL3 and SL4 distributions.
12. Dimmkurg target with color suffix.
13. LumaWatt wireless sensors are factory installed only, requiri

16. One required for each LightBAR.

To Add as suffix to accessory. Example: VA6109-BK-R.
 Not available with finials, pendant mount "PM48" or bishop wall mounts.
 Requires use of 4" O.D. round straight pole.



#### MOUNTING ACCESSORIES

Pole mount arms are designed to fit both medium ECM/EMM housings. (Only these arms are compatible with the Epic luminaire). Arms feature a precision welded cast aluminum mounting hub for attachment of fixture head to arm with four stainless steel fasteners. Wall mount arms compliment pole mount luminaires and attractively transition fixture scale in lower mounting height pedestrian environments. Wall mount arms are designed to fit both medium ECM/EMM housings. Arms feature a precision welded cast aluminum mounting hub for attachment of fixture head to arm with four stainless steel fasteners.



BISHOP SINGLE POLE MOUNT ARM VA6105 (Modern), VA6154 (Classical)

Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon. Weight: 24 lbs. E.P.A: 0.92



## TRADITIONAL SINGLE POLE MOUNT ARM VA6109 (Modern), VA6158 (Classical)

Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon. Weight: 20 lbs. E.P.A: 0.86



TRADITIONAL SINGLE POLE MOUNT ARM WITH 45° LOWER BAR VA6113 (Modern), VA6162 (Classical) Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon. Weight: 24 lbs. E.P.A: 1.17



**BISHOP SINGLE POLE MOUNT ARM** WITH CROSS ROD VA6106 (Modern), VA6155 (Classical) Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon Weight: 25 lbs. E.P.A: 0.98



## TRADITIONAL SINGLE POLE MOUNT ARM WITH ROUNDED UPPER BAR

VA6110 (Modern), VA6159 (Classical) Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon. Weight: 28 lbs. E.P.A: 1.4



TRADITIONAL SINGLE POLE MOUNT ARM WITH 45° UPPER STRAP VA6114 (Modern), VA6163 (Classical) Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon. Weight: 24 lbs. E.P.A: 1.17





**BISHOP TWIN POLE MOUNT ARM** VA6107 (Modern), VA6156 (Classical) Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon. Weight: 37 lbs. E.P.A: 1.43

#### BISHOP TWIN POLE MOUNT ARM WITH CROSS RODS VA6108 (Modern), VA6157 (Classical) Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon.

Weight: 39 lbs. E.P.A: 1.55

30-15/16" [786mm] · 26-3/4" [679mm] 18-7/8 [480mm]

TRADITIONAL SINGLE POLE MOUNT ARM WITH ROUNDED LOWER BAR VA6111 (Modern), VA6160 (Classical)

35-7/16" [900mm]

Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon. Weight: 25 lbs. E.P.A: 1.16



TRADITIONAL SINGLE POLE MOUNT ARM WITH 45° UPPER BAR VA6112 (Modern), VA6161 (Classical) Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon. Weight: 28 lbs. E.P.A: 1.38



TRADITIONAL TWIN POLE MOUNT ARM

VA6116 (Modern), VA6165 (Classical) Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon. Weight: 30 lbs. E.P.A: 1.44



Specifications and dimensions subject to change without notice

#### MOUNTING ACCESSORIES



TRADITIONAL TWIN POLE MOUNT ARM WITH ROUNDED UPPER BARS VA6117 (Modern), VA6166 (Classical)

Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon. Weight: 43 lbs. E.P.A: 2.28



#### TRADITIONAL TWIN POLE MOUNT ARM WITH 45° LOWER BARS

VA6120 (Modern), VA6169 (Classical) Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon. Weight: 40 lbs. E.P.A: 2.0

#### Wall Mount Accessories



BISHOP WALL MOUNT ARM VA6101 (Modern), VA6150 (Classical) Mounts to wall with four stainless steel lag bolts (provided by other). Weight: 16 lbs.



TRADITIONAL TWIN POLE MOUNT ARM WITH ROUNDED LOWER BARS VA6118 (Modern), VA6167 (Classical) Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon. Weight: 40 lbs. E.P.A: 2.04



TRADITIONAL TWIN POLE MOUNT ARM WITH 45° UPPER STRAPS VA6121 (Modern), VA6170 (Classical) Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon. Weight: 37 lbs. E.P.A: 1.81

Radius

12" [304mm]

> 51-3/8" [1306mm]

[51mm]

30-5/8" [777mm] -

**BISHOP WALL MOUNT ARM** 

VA6102 (Modern), VA6151 (Classical)

Mounts to wall with four stainless

steel lag bolts (provided by other).

WITH CROSS ROD

Weight: 17 lbs.



TRADITIONAL TWIN POLE MOUNT ARM WITH 45° UPPER BARS VA6119 (Modern), VA6168 (Classical) Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon. Weight: 43 lbs. E.P.A: 2.24



MAST ARM ADAPTER

VA6122 (Modern), VA6171 (Classical) Secures fixture to nominal 2" pipe (2-3/8" horizontal O.D.) Weight: 4 lbs.



**NEMA TWISTLOCK PHOTOCONTROL** (R) Order separately (Not compatible with finials or wall mount bishop arms)



TRADITIONAL WALL MOUNT ARM VA6103 (Modern), VA6152 (Classical) Mounts to wall with four stainless steel lag bolts (provided by other). Weight: 17 lbs.



TRADITIONAL WALL MOUNT ARM WITH 45° STRAP VA6104 (Modern), VA6153 (Classical) Mounts to wall with four stainless steel lag bolts (provided by other). Weight: 18 lbs.



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TECH LIGHTING[®]

An architectural profile reminiscent of beautifully classic roof lines delivers significant light output in this modern LED wall sconce suitable for both indoor and outdoor applications. The Pitch Single's die-cast metal body houses powerful LED light sources that create visual appeal as light cascades down along a wall.

## High quality LM80-tested LEDs

for consistent long-life performance and color

## **Outstanding protection against the elements:**

- Marine-grade powder coat finishes
- Stainless Steel mounting hardware
- Impact-resistant, UV stabilized frosted acrylic lensing

## Can be mounted for up lighting or down lighting

## **SPECIFICATIONS**

DELIVERED LUMENS	823
WATTS	26.1
VOLTAGE	120V, 277V
DIMMING	ELV
LIGHT DISTRIBUTION	Symmetric
MOUNTING OPTIONS	Downlight or Uplight
ССТ	3000K
CRI	80+
COLOR BINNING	3 Step
BUG RATING	B1-U0-G0
DARK SKY	Compliant (Downlight)
WET LISTED	IP65
GENERAL LISTING	ETL
CALIFORNIA TITLE 24	Can be used to comply with CEC 2016 Title 24 Part 6 for outdoor use. Registration with CEC Appliance Database not required.
START TEMP	-30°C
FIELD SERVICEABLE LED	No
CONSTRUCTION	Aluminum
HARDWARE	Stainless Steel
FINISH	Marine Grade Powder Coat
LED LIFETIME	L70; 70,000 Hours
WARRANTY*	5 Years



PITCH SINGLE shown in black



**PITCH SINGLE** shown in charcoal



PITCH SINGLE shown in bronze



**PITCH SINGLE** shown in silver

* Visit techlighting.com for specific warranty limitations and details.

## ORDERING INFORMATION

S SINGLE

700WSPIT SIZE

FINISH **B** BLACK BRONZE

H CHARCOAL I SILVER

z

IAMP

-LED830 LED 80 CRI, 3000K 120V -LED830277 LED 80 CRI, 3000K 277V





## PHOTOMETRICS*

## PITCH SINGLE

Total Lumon Output:	873
iotal Lumen Output.	025
Total Power:	26.2
Luminaire Efficacy:	31.4
Color Temp:	3000K
CRI:	80+
BUG Rating:	B1-U0-G0



## PROJECT INFO

## FIXTURE TYPE & QUANTITY

(I)

JOB NAME & INFO

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NOTES



GENERATION BRANDS 7400 Linder Avenue, Skokie, Illinois 60077 T 847.410.4400 F 847.410.4500

*For latest photometrics, please visit www. techlighting.com/OUTDOOR



## **FEATURES & SPECIFICATIONS**

**INTENDED USE** — Our recessed LED module is the most economical means to create a well lit environment with exceptional energy efficiency and near zero maintenance. Great for retrofit into existing downlight cans or new construction and remodel applications. Unique torsion spring and friction clip retention allows fitment into nearly 100% of installed cans. The LED module maintains at least 70% light output for 50,000 hours.

**CONSTRUCTION** — Aluminum die cast reflector with deep baffle configuration for reduced glare. Combined LED and driver printed circuit board attached. Inner reflector cone funnels light through the pressed-in diffused lens.

Baffle and open trim inserts are available in multiple finishes.

**OPTICS** — Diffused lens at end of mixing chamber to provide even light distribution for general illumination, equivalent to 65W BR30 or 100W BR30 lamp.

Wide flood beam angle at  $>45^{\circ}$ .

**ELECTRICAL** — Center 2 Edge[™] (patent pending) technology created for a single point source. Primary power disconnect provided for simple connection to a dedicated LED connector in the housing. Dimming down to 10%. For compatible dimmers, refer to <u>Compatible Dimmers Chart</u>.

725-lumen P series has an input wattage of 12.7 watts, 57 lumens per watt, equivalent to 65-watt

incandescent. P Series' patent pending driver has zero inrush, which allows power loads to be calculated with actual

rated wattages. Example: 47 units of 6BPMW LED fixtures can be installed in line with a 600-watt dimmer. 600W/12.7W = 47 fixtures.

950-lumen P series has an input wattage of 15.2 watts, 63 lumens per watt, equivalent to 100-watt incandescent.

*Actual wattage may differ by +/-5% when operating at 120V +/-10%.

**INSTALLATION** — Suitable for installation in standard and shallow-height rough-in sections.

E26 socket adapter and splice kit ships standard. This enables easy installation or permanent conversion to an LED source for Title 24 compliance.

Twin torsion springs ensure easy installation.

Friction clips included to allow fitment into cans without torsion brackets from an inside diameter of 6.0" to 7.0".

LISTINGS — CSA certified to US and Canadian safety standards. ENERGY STAR[®] qualified; California T24 compliant. Wet location listed for indoor use only. WSEC ASTM E283 for Air-Tight (with IC housings). WARRANTY — 5-year limited warranty. Complete warranty terms located at

www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Actual performance may differ as a result of end-user environment and application. Note: Specifications subject to change without notice.

PATENTS PENDING.

ORDERING INFORMATION



All dimensions are inches (centimeters) unless otherwise indicated.

## Example: 6BP TRMW LED 27K 90CRI

(19.4

Series/Finish	Lamp	CCT/CRI/W	/ Lumens ¹	Voltage		Options	
68PMW       6" Baffle LED module, matte white         6BP TRMW       6" Baffle LED module, black baffle, matte white flange         6BPBN       6" Baffle LED module, brushed nickel         6BPORB       6" Baffle LED module, oil-rubbed bronze	LED HL LED	(blank) 27K 90CRI 30K 90CRI 40K 90CRI (blank) 27K 90CRI	3000 K / 83 CRI / 12.7W / 725L 2700 K / 93 CRI / 10.25W / 600L 3000 K / 93 CRI / 10.25W / 600L 4000K / 92CRI / 9.9W / 650L 3000 K / 83 CRI / 15.2W / 950L 2700 K / 93 CRI / 16.7W / 860L	(blank) 120V		L7XLED T24 L7XRLED T24 LC6LED T24 L7X L7XR L7XR L7XP L7XPR	New construction rough-in LED base Remodel rough-in LED base New construction rough-in LED base New construction rough-in ² Remodel rough-in ² New construction shallow rough-in ² Remodel shallow rough-in ²
		30K 90CRI 40K 90CRI	3000 K / 93 CRI / 16.7W / 860L 4000K / 92CRI / 16.4W / 950L			LC6 LCP	New construction rough-in ² New construction shallow rough-in ²
60PA       6" Open LED module, clear diffuse         60PAZ       6" Open LED module, clear specular         60PA TRMW       6" Open LED module, clear diffuse, matte         white flange       60PAZ TRMW         60PAZ TRMW       6" Open LED module, clear specular, matte         white flange       60PAZ TRMW	LED HL LED	(blank) 27K 90CRI 30K 90CRI 40K 90CRI (blank) 27K 90CRI	3000 K / 83 CRI / 12.7W / 725L 2700 K / 93 CRI / 10.25W / 600L 3000 K / 93 CRI / 10.25W / 600L 4000K / 92 CRI / 9.9W / 650L 3000 K / 83 CRI / 15.2W / 950L 2700 K / 93 CRI / 16.7W / 860L	(blank)	120V	L7XLED T24 L7XRLED T24 LC6LED T24 L7X L7XR L7XR L7XP L7XP	New construction rough-in LED base Remodel rough-in LED base New construction rough-in LED base New construction rough-in ² Remodel rough-in ² New construction shallow rough-in ² Remodel shallow rough-in ²
		30K 90CRI 40K 90CRI	3000 K / 93 CRI / 16.7W / 860L 4000K/ 92CRI / 16.4W / 950L			LC6 LCP	New construction rough-in ² New construction shallow rough-in ²

Lead times will vary depending on options selected. Consult with your sales representative.

Catalog

Number

# Accessories: Order as separate catalog number. TSA6 Makes non-bracket housing compatible with the LED module; ships as units, J6 or J25 FL2LED Makes L7XF housings compatible with the LED module

Notes

1 Total system delivered lumens.

2 Must be ordered on a separate line.

See page 2 for Trim Inserts.

## 6" LED Module

## **TRIM INSERTS**

TRIM INSERT	'RIM INSERTS (for field configuration; ordered separately) Examp				
Series/Finisł	1			Packa	aging
6BP TRMW 6BPBN 6BPORB 60PA	6" Baffle black, matte white flange insert 6" Baffle brush nickel insert 6" Baffle oil-rubbed bronze insert 6" Open clear diffuse insert	60PAZ 60PA TRMW 60PAZ TRMW	6" Open clear specular insert 6" Open clear diffuse, matte white flange insert 6" Open clear specular, matte white flange insert	R12 U	Retail pack of 12 units Unit







Black Baffle with Mattte White Trim Ring (TRMW)

Brushed Nickel Baffle (BN)

Oil-rubbed Bronze Baffle (ORB)



Clear Diffuse with Matte White

Trim Ring (A TRMW)



Clear Diffuse (A)





Clear Specular (AZ)

## **ADDITIONAL DATA**

ENERGY DATA* - 3000K Standard Lumens						
	CRI - 83	CRI - 93				
Lumens	725	600				
Min. starting temp	-18°C (0°F)	-18°C (0°F)				
Max. temp	46°C (115°F)	46°C (115°F)				
EMI/RFI	FCC Title 47 CFR, Part 15, Class B	FCC Title 47 CFR, Part 15, Class B				
Sound rating	A standards	A standards				
Input voltage	120V	120V				
Min. power factor	0.97	0.97				
Input frequency	50/60 Hz	50/60 Hz				
Rated wattage	12.7W	10.5W				
Input power	12.7W	10.5W				
Input current	.11A	.09A				
*Values at non-dimming li	ne voltage.					

Trim finish	Lumen multiplier
Matte White	1.00 (Baseline)
Clear Diffuse	0.99
Clear Specular	0.99
Brushed Nickel	0.83
Black Baffle	0.76
Oil Rubbed Bronze	0.78



ENERGY DATA* - 3000K Hi Lumens												
	CRI - 83	CRI - 93										
Lumens	950	860										
Min. starting temp	-18°C (0°F)	-18°C (0°F)										
Max. temp	46°C (115°F)	46°C (115°F)										
EMI/RFI	FCC Title 47 CFR, Part 15, Class B	FCC Title 47 CFR, Part 15, Class B										
Sound rating	A standards	A standards										
Input voltage	120V	120V										
Min. power factor	0.97	0.97										
Input frequency	50/60 Hz	50/60 Hz										
Rated wattage	15.2W	16.7W										
Input power	15.2W	16.7W										
Input current	.13A	.14A										
«Values at non-dimming li	ne voltage											

Color temperature	Lumen multiplier
2700K	0.97
3000K	1.00 (Baseline)
4000K	1.08



## 6" LED Module

## **PHOTOMETRICS**

Distribution Curve	Distribution Data	Output Data		Illuminance Data at 30″ Above Floor for a Single Luminaire							
6BPMW LED, 3000 K LEDs	s, input watts: 12.7, deliv	vered lumens: 703, LM/W=	55.4,1	test no. LTL2571	1P, tested in ac	cordance with	IESNA LM 7	9-08			
			pr pc	80%	20%	50%					
	Ave Lumens	Zone Lumens % Lamp	p0 pw	50% 30% 10%	50% 30% 10%	50% 30% 10%					
	80° 0 434 5 430 41 15 388 109	$\begin{array}{c} \hline 0^{\circ} - 30^{\circ} & 299.1 & 42.6 \\ 0^{\circ} - 40^{\circ} & 463.5 & 66.0 \\ 0^{\circ} - 60^{\circ} & 637.8 & 90.8 \end{array}$	0 1 2	119 119 119 107 104 101 97 91 86	116 116 116 105 102 99 95 90 85	111 111 111 101 98 96 91 87 84	In	ital FC	50% bear 55.1°	ı - 10% I 92	beam - 2.6°
	25 325 150	0° - 90° 702.6 100.0	3	87 81 75	86 80 75	83 78 73	Mounting C	Center			
	60° 35 267 164	90° - 180° 0.0 0.0	4	79 72 66	78 71 66	76 70 65	Height E	Beam Di	ameter F	C Diamete	er FC
200HTINX	45 149 115	0° - 180° 702.6 *100.0	5	72 65 59	71 64 59	69 63 58	8.0	77	5./ /	2 11.5	1.4
	55 63 59	*Efficiency	6	66 59 53	65 58 53	64 57 52	10.0	1.1	7.8 3	9 15.7	0.8
$K \land K \land I$	65 38 38		7	61 53 48	60 53 48	59 52 48	12.0	4.0	9.9 2	4 19.9	0.5
	75 20 21		8	56 49 44	56 49 44	54 48 43	14.0	3.3	14.1 1	0 24.1	0.3
	85 5 6 90 0 40°		9 10	52 45 40 49 42 37	52 45 40 48 41 37	51 44 40 47 41 37	16.0	2.4	14.1 1	2 20.3	0.2
400 20°											

68PMW LED 90CRI, 3000 K LEDs, input watts: 10.3, delivered lumens: 634, LM/W= 62, test no. LTL 23864P, tested in accordance with IESNA LM 79-08

												pi				20	J70										
												pc		80%			70%			50%							
		+				Ave I	Lumens	_	Zone	Lumens	% Lamp	pw	50%	30%	10%	50%	30%	10%	50%	30%	10%						
		+		80°	0	389			0° - 30°	272.6	43.0	0	119	119	119	116	116	116	111	111	111			50% be	am -	10% be	am -
	1/////	$\sim$		00	5	384	36		0° - 40°	420.3	66.2	1	107	104	101	105	102	99	101	99	96			56.0	0	93.1	0
	THX.	$\mathbb{N}^{-1}$	$\sim$		15	353	99		0° - 60°	579.6	91.4	2	97	91	87	95	90	86	92	87	84		Inital FC				
	<b>[</b> ] \ \		. 1		25	299	137		0° - 90°	634.5	100.0	3	87	81	76	86	80	75	83	78	74	Mounting	Center				
	$  \rangle \rangle$	$\backslash V \land$	$\searrow$	eu.	35	239	148	9	90° - 180°	0.0	0.0	4	79	72	67	78	71	66	76	70	65	Height	Beam	Diameter	FC	Diameter	FC
	$  \rangle \rangle$	$\mathcal{M}$	. / 1	00	45	137	106		0° - 180°	634.5	*100.0	5	72	65	59	71	64	59	69	63	58	8.0	12.8	5.8	6.4	11.6	1.3
~~~	Ht	()	ХI		55	57	54			Efficienc	V	6	66	59	53	66	58	53	64	57	53	10.0	6.9	8.0	3.5	15.8	0.7
200	1 \	\setminus \vee \checkmark			65	33	33					7	61	54	48	60	53	48	59	52	48	12.0	4.3	10.1	2.2	20.1	0.4
		$\wedge \wedge \wedge$			75	16	17					8	57	49	44	56	49	44	55	48	44	14.0	2.9	12.2	1.5	24.3	0.3
		X	\setminus]		85	4	4					9	52	45	40	52	45	40	51	44	40	16.0	2.1	14.4	1.1	28.5	0.2
	-+	- X \	\sim		90	0						10	49	42	37	48	42	37	47	41	37						
		Λ	/ Y	40°																							
	\square	-t '	$\langle \rangle$																								
()°	20°																									

6BPMW HL LED 80CRI, 3000 K LEDs, input watts: 15.2, delivered lumens: 950, LM/W=63, test no. LTL23864, tested in accordance with IESNA LM 79-80

								pf				20	%										
								рс	;	80%			70%			50%							
			Ave L	umens	Zone	Lumens	% Lamp	pw	50%	30%	10%	50%	30%	10%	50%	30%	10%						
	80°	0	578		0° - 30°	405.5	43.0	0	119	119	119	116	116	116	111	111	111			50% be	am -	10% be	am -
HHY		5	572	54	0° - 40°	625.2	66.2	1	107	104	101	105	102	99	101	99	96			56.0	0	93.1	1°
- 1177.	\times	15	525	147	0° - 60°	862.2	91.4	2	97	91	87	95	90	86	92	87	84		Inital FC				
		25	444	204	0° - 90°	943.9	100.0	3	87	81	76	86	80	75	83	78	74	Mounting	Center				
200		35	355	220	90° - 180°	0.0	0.0	4	79	72	67	78	71	66	76	70	65	Height	Beam	Diameter	FC	Diameter	FC
	$X \times 1^{\circ\circ}$	45	204	157	0° - 180°	943.9	*100.0	5	72	65	59	71	64	59	69	63	58	8.0	19.1	5.8	9.6	11.6	1.9
H	$\forall \rangle > 1$	55	85	80	*	Efficiency	,	6	66	59	53	66	58	53	64	57	53	10.0	10.3	8.0	5.1	15.8	1.0
		65	50	49		-		7	61	54	48	60	53	48	59	52	48	12.0	6.4	10.1	3.2	20.1	0.6
	+	75	24	26				8	57	49	44	56	49	44	55	48	44	14.0	4.4	12.2	2.2	24.3	0.4
400		85	5	6				9	52	45	40	52	45	40	51	44	40	16.0	3.2	14.4	1.6	28.5	0.3
		90	0					10	49	42	37	48	42	37	47	41	37						
	40°																						
0°	20°																						

6BPMW HL LED 90CRI, 3000 K LEDs, input watts: 16.6, delivered lumens: 910, LM/W= 55, test no. LTL 23864P1, tested in accordance with IESNA LM 79-08





6BP-60P LED

LIGHTING FACTS







6BP-60P LED



Catalog #:

Type: Date:

Project: Notes:

2-1/2" x 4-3/4" LED Step Light

120V Input

Fits a single gang box

Electrical Data				
Catalog Number	Wattage	Source Lumens	Efficacy	
SS3006	3W	120lm	40lpw	

Construction

Die-cast aluminum housing with solite lens. Surface mount luminaire illuminates stairs, steps or pathways. Energy-saving LED emits through the solite glass lens.

LED Light Engine

- Wattage: 3W
- Lumens: 120lm
- Color Temperature: 2700K (available in amber, see SS3006-AMB)
- Color Rendering Index: 90 CRI

Electrical

- Integral 120V input driver
- Consult factory for dimming options

Finishes

Available in bronze, silver metallic or white.

Installation

Fits in standard single-switch box, and a 2" x 3" handy box. Junction box mounts vertically.

Listings

• UL listed to US and Canadian standards for wet locations

ADA compliant







Order Matrix

Step Light Order Matrix (Example: SS3006-BZ)

Series

SS3006-BZ (Bronze LED Step Light) SS3006-SM (Silver Metallic LED Step Light) SS3006-WT (White LED Step Light)







Optional connectors allow simple plug 'n play installation and connection.

A Perfect Blend

Patented optical system provides close-to-fixture illumination with short mixing distance and blended color.

With a wide lateral throw, even large spaces and turns are filled in with even light. Too wide? We have baffles too.



Additional extension brackets make sign lighting and wall washing simple.



Proper Finish Black or Clear anodized aluminum.

Lumens / ft



Emitting Angles Lengths 12" 18" 24" 65° 30° 82° 36″ 48"

Advanced Engineering

Versatile Mounting

make mounting simple.

hinged, and fixed brackets

Adjustable (shown),



Designed & Made in the USA



Thousands of Architectural LED installations worldwide since 2006.



Inspected Burned-in Leak Tested Family Owned



1% Dimming

With patented LightLink[™] technology, dim hundreds of Gen3 fixtures to 1% with a single O-10V interface. No trimming, no flicker, no worries.



Active Thermal

Patent-pending on-board temperature monitoring discreetly dims the fixture upon signs of overheat. Constantly protecting your investment.

LED COLORS AVAILABLE

4500°K

Perfect Color

• 85 typical CRI

*for CCT <= 4500 °K

- LEDs Placed In-House
- 3-Step MacAdam Ellipse binning*
- 3000°K• 5000°K 3500°K 5700°K 4000°K• 6500°K Green, Blue, Red

2700°K•

• 90+ CRI option available

More Online

Visit our website for Spec Sheets, Installation Guides, IES & REVIT files and more.

www.i2Systems.com

Gen3[®] MiniWasher[®]

i2Systems

MODEL V3285 | LED LINEAR LUMINAIRE | WET LOCATION

Gen3 is an architectural-grade, wet-location LED luminaire engineered for the illumination & highlighting of walls & surfaces.



US 8,255,487 | US 8,264,172 Additional Patents Pending

FIXTURE BUILDER

				1	
V3285	A				OPTIONS Select one of each option below
FIXTURE TYPE	OUTPUT	LENGTH	BEAM ANGLE	LED COLOR	LOCATION
Gen3 MiniWasher	A 8W / Ft	1 12"	3 30°	AAH Cool White – 6500°K	Outdoor*
		8 18″	6 65°	AAG Cool White – 5700°K*	
		2 24"	8 82°	AAF Cool White – 5000°K	Indoor
*factory defaults		3 36"		BBE Neutral White – 4500°K	
		4 48"		BBD Neutral White – 4000°K*	FINISH
				BBDR Neutral White – 4000°K - 90+ CRI	Rlack Apodize*
				CBC Warm White – 3500°K	
				CBB Warm White – 3000°K*	Clear Anodize
				CBBR Warm White – 3000°K - 90+ CRI	
				CBA Warm White – 2700°K	
				CBAR Warm White – 2700°K - 90+ CRI	
				DC Green	
				EC Blue	

ACCESSORIES

DIMMING CONTROL

POWER BOXES

BRACKETS & BAFFLES

Red

HC

LIGHTLINK		INDO	OR RAT	ED		BRACKETS	5
LL-205-10V	0-10V Bridge & Dimmer			VOLTAGE	POWERS	VLA-14	Rotational Adjustab
		E05P	75W	120-277V AC	10 ft	VLA-5	Hinge Adjustable
	BLE					VLA-15	Fixed
685-01561-100	Indoor, 100ft, Plenum	OUTE	OOR R	ATED		EXTENDED	BRACKETS
685-02026-100	Outdoor, 100ft, Water/UV	E05PV	v 75W	120-277V AC	10 ft	VLAX2-6	6" Adjustable
						VLAX2-12	12" Adjustable

BAFFLES (INDOOR ONLY) Black 810-02663-**xx**B White 810-02663-**xx**W xx = fixture length

QUICK SPECS PHOTOMETRICS Additional Angles at i2Systems.cor 48" GEN3 MINIWASHER (V3285A-46CBB) RESULTS 20-30V DC, 24V nom. Input Voltage Humidity 0 to 95% Non Condensing Diameter of Mounting fc @ Power / Ft 8 Watts CRI 85 typ. 90+ Optional Height Center Beam Lighted Plane Lumens / Ft 400 lms typ. @ 3000°K 50 Feet from Last Light to 4.78 ft 4.0 ft 61.1 fc Max. Wire Distance Power Box using 16 AWG 25 Efficiency 51 lms / W typ. @ 3000°K 60 ft 27.2 fc 718 ft Mil-Spec Anodized Housing 8.0 ft 15.3 fc 9.57 ft 50 **Operating Temp** -20°C to 40°C Aluminum 10.0 ft 978 fr 12 0 ft Max. Case Temp 50°C Lens UV Resistant Acrylic 75 12.0 ft 6.79 fc 14.4 ft 12.42" [316mm] 14.0 ft 4.99 fc 16.7 ft 100 18.42" [468mm] 19.1 ft 3.82 fc 1.01" [26mm] 16.0 ft 24.42" [621mm] for lux, multiply by 10.8 -- 0 Deg. Plane 90 Deg. Plane 36.42" [926mm] 48.42" [1230mm] 1.05" [27mm] All results are according to IESNA LM-79-**Multiplier Table** 3000°K 4000°K 5700°K 2008: Approved Method for the Electrical and Standard CRI x105 x110

Outdoor Lengths Shown. Subtract .15 inches [3.8mm] for Indoor Lengths. For complete technical information refer to the Gen3 Installation Guide available at www.i2Systems.com



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High CRI

x0.90

x0.95

*Product specified as "Outdoor" is rated for exterior applications, however it is not rated for submersible applications and should not be mounted in conditions where there is, or is a possibility of, standing water. When installing in wet or damp locations, it is good practice to seal all fixtures and junction boxes with electronics-grade RTV silicone sealant to ensure that moisture cannot enter or accumulate in wiring compartments, cables, or other electrical parts. Product should not be installed in extreme locations, including but not limited to those outside of its temperature/humidity rating, environments subject to greater-than-average temperature shifts, and/or applications where product is subject to water runoff or downspouts. For more information, please refer to the Gen3 Installation Guide available at www.i2systems.com.

x1.00

Photometric Testing of Solid-State Lighting

092-02334B

Visit www.timberform.com to view and download drawings (PDF or DWG), product specifications and placement guidelines.

CYCLOOPS®TWIST



CYCLOOPS° ARCH







	Specifi	cations						
	Model #	# Bikes	Description	weight	length	width	height	Space Requirement
\checkmark	6006	1	Wall Mount	16.7 lbs	18.6"	4.9"	53.3"	71"h x 45"w
•	Specifi	cations						
	Model #	# Bikes	Description	weight	length	width	height	Space Requirement
	6003C	1	Wall Mount	10 lbs.	5.3"	2.9"	53.3"	71"h x 45"w
	Specifi	cations						
	Model #	# Bikes	Description	weight	length	width	height	Space Requirement
	6003T	1	Wall Mount	9 lbs.	5.3"	2.9"	53"	71"h x 45"w

Note: Saris Parking Systems representatives can assist with custom layout and spacing to meet your room dimensions and desired bike capacity.

Bike Tracs

Recommended Spacing



Product Details

- Wide wheel track accepts all bikes •
- Full length tray keeps bike in place and protects wall . surface
- Two locking mechanism options available



Anchors must be purchased separately

6006



53.3



6003C

53.

48.0

6003T





Downloadable product resources available online:



www.sarisparking.com

CAD Files

SketchUp Files Written Specs

Photos



DOOR PULLS - BRASS 8" PULLS



Wilshire Pull (86078)

Projection: $2^{1/8}$ " A= $8^{7/8}$ " Base: $1^{1/8}$ " Diameter



Knoxville Pull (86077)

Projection: $2^{1/2}$ " A= $8^{13/16}$ " Base: 3/4" Diameter



Ribbon & Reed Pull (86080)

Projection: $2^{3}/8^{\circ}$ A= $8^{15}/16^{\circ}$ Base: 1" Diameter



Projection: $2^{1/8}$ " A= $8^{7/8}$ " Base: $1^{1/8}$ " Diameter

> Baden Pull (86184) Stainless Steel Baden Pull (S86002)

Projection: 2 ¹/₈" A= 8 ⁵/₈" Base: 1" x ¹/₁₆"



Brisbane Pull (86170) Projection: 1 ¹³/6" A= 8 %6" Base: ¹³/6" x %6"

A 1" + + +

Zeus Pull (86183) Stainless Steel Zeus Pull (S86001)

Projection: 2 ¹/₈" A= 8 ⁵/₈" Base: 1" x ¹/₁₆"

Screw Specifications - Brass 8" Pulls

Standard Components:

PEWTER FINISH

- 1", 10-32 Screws
- 1", 1/4"-20 Screws
- Inserts for 1/4"-20 screws
- Inserts for 10-32 screws

1





Standard with Sandcast Bronze Deadbolt Locks

- Schlage C Keyway
- Standard Door Prep and Installation
- Solid Brass Cylinder
- Sandcast Bronze Collar and Inside Rosette
- Hardened Steel Bolt
- Heavy Gauge Steel Understrike and Brass Trim Strike Shipped with Every Deadbolt

