

**Curry County Community Development Department  
PLANNING COMMISSION STAFF REPORT**

**Application S-1901 is a request for Preliminary Plat approval to reauthorize a 33 lot Subdivision of an approved Planned Unit Development (PUD) on a 7.64 acre parcel zoned Light Commercial (C-1).**

**1. Background Information**

**Owner:** Sant Pacific Inc.  
5284 S. Commerce Dr. Suite C-274  
Murray, Utah 84107

**Applicant:** Joshua Richards  
94288 Agateway  
Gold Beach, OR 97444

**Agent:** Joshua Stout  
94288 Agateway  
Gold Beach, OR 97444

**Land Use Review:** Preliminary Plat and Plan review of a 33 lot subdivision of an approved Planned Unit Development (PUD)

**Property Description:** Assessor's Map 36-15-25BD, Tax Lot 2100

**Location** Located in the Wedderburn area just north of Gold Beach off of Ocean Way adjacent to Shore Pines Senior Living Community and inside the Gold Beach Urban Growth Boundary (UGB).

**Existing Development:** None. Property is vacant and cleared. Brush and small trees have been removed consistent with an approved Department of Environmental Quality (DEQ) NPDES Construction Stormwater Discharge Permit 1200-C. Grading and rough road layout has been established on site.



**Pacifica at Rogue Reef Subdivision-Existing Site Conditions**

**Proposed Development:** 33 lot Subdivision of an approved Planned Unit Development (PUD). Project previously obtained approval of the PUD and preliminary approval of the subdivision by the Curry County Planning Commission in 2007 (AD-0712) but was not completed. Planning Director's administrative decision to reauthorization the PUD occurred on July 2, 2019 (PUD-1902).

**Zone:** Light Commercial (C-1)

**Acreage:** Parcel is 7.64 acres in size

## II. Applicable Review Criteria

### Curry County Comprehensive Plan

#### Goal 10 Housing

### Curry County Zoning Ordinance (CCZO)

Section 3.150-3.156	Light Commercial (C-1)
Section 4.020	Off-Street Parking
Section 4.022	General Provisions Off-Street Parking and Loading
Section 4.050	Access Management
Section 3.300	Erosion Prevention and Sediment Control
Section 3.400	Storm and Surface Water Management Standards

### Curry County Land Division Ordinance (CCLDO)

Section 3.0210	Standards and Procedures for Submission of Preliminary Plans and Plats
Section 4.0110	Preliminary Plans - PUD
Section 6.0110	Availability of Public Services
Section 6.0210	Street and Road Specifications

## III. Background Information

The applicant has proposed a 33 unit single family dwelling subdivision on a 7.64 acre parcel zoned Light Commercial. This proposal is a re-evaluation of a prior approval of a conditional use for a PUD including a preliminary subdivision plat on the subject property with some changes. Application AD-0712, a 48 unit residential townhouse PUD and preliminary subdivision was approved on June 28, 2007 by the Curry County Planning Commission. A final plat and plan was not completed for the 48 unit townhouse PUD and the Conditional Use approval expired prior to any development occurring at the site.

The 33 unit single family dwelling PUD was approved administratively by the Curry County Planning Director on July 2, 2019. The appeal deadline expired for this decision on July 17, 2019 with no appeals submitted.

The approved PUD changes the lot size and housing density from the prior approved PUD (AD-0712) in that there are 33 single family dwellings proposed instead of 48 townhouse units. This change resulted in a larger lot size for each individual home ownership and thus allows for more open space per housing unit than the prior approved PUD (AD-0712).

The Curry County Zoning Ordinance (CCZO) provides for an administrative approval of a PUD through the Conditional Use process within the Light Commercial (C-1) Zoning District. The applicant has stated the need to divide and sell the lots approved in the PUD therefore a preliminary and final plat and plans for a major partition is required. The subdivision is required to be reviewed and approved by the Planning Commission pursuant to the provisions of the Curry County Land Division Ordinance.

#### IV. **Findings**

**Curry County Comprehensive Plan Policies – Goal 10 – Housing** – *Curry County encourages the development of adequate housing for all of its citizens in terms of location, quality and affordability; recognizes the need for all forms of housing and has designated lands for residential use with conventional homes, multi-family dwellings, and mobile home parks; recognizes the housing needs of those people who desire to live in a planned community by providing a process by which planned unit developments can be created with unit ownership and common areas.*

**Finding:** Curry County is facing a workforce crisis due to the lack of housing.

According to an October, 2018 report commissioned by the Curry County Housing Study Task Force, an affordable home for a worker earning the County’s median income would exceed their housing budget by \$96,000. This difficult situation is in large part due to the fact that there is very limited housing options available within all sectors of the housing market except at the high end. The proposed subdivision would provide housing options for working families, a critical need in the County and consistent with the policies in the Comprehensive Plan. The proposed subdivision would provide quality and affordable housing in a location where it is needed. The proposed project will help meet the need for dwelling units within a zone that allows for such residential use.

**Section 3.150-3.153 CCZO – Light Commercial Zone (C-1)** – *The C-1 zone is designated to be applied to areas such as community shopping centers and business districts which cater to the needs of nearby residential areas. This zone is intended to be applied, only within urban growth boundaries identified by the Comprehensive Plan. Section 3.152 (6) includes the following conditional uses of land within the zoning designation:*

*(6) Planned Unit Development restricted to the uses and dwelling density allowed by the zone.*

**Finding:** This section of the CCZO states the purpose of the Light Commercial zoning district. The primary uses established in the area within the Light Commercial zone include a mix of

single family residences, light commercial businesses and a senior recreation facility. The proposed subdivision is a use consistent with the purpose of the zone and established uses in the area. The applicant is proposing a 33 unit subdivision with single family residences and open spaces. This use is allowed and was approved (PUD-1902) through a conditional use process in the C-1 zone. The applicant has submitted an application for a subdivision based on the conditions set forth in the approval of PUD-1902. The density proposed is 33 dwellings on 7.64 acres. The dwelling density allowed in the C-1 zone is 6,000 square feet per lot provided municipal sewer and water is available. The application as proposed would connect the subdivision dwellings to municipal water (Gold Beach) and sewer (Wedderburn Sanitary District) therefore the required dwelling density is 6,000 square feet. The 7.64 acre parcel is 332,798 square feet which results in a dwelling unit density of over 10,000 square feet per dwelling unit for the 33 residences including open space common areas. This standard of the CCZO is exceeded.

**Section 3.156 CCZO – Off-Street Parking and Section 4.022 General Provisions – Off-Street Parking and Loading (6.)**-*At the time of construction of a new structure or at the time of enlargement or change in use of an existing structure which would require additional parking spaces, off street parking spaces shall be provided in accordance with 1. Residential use, a.) dwelling – One space is required per dwelling unit. 6. Required parking spaces shall be available for the parking of operable passenger automobiles of residents, and shall not be for storage or vehicles or materials or for the parking of trucks used in conducting the business or use.*

**Finding:** A condition of the approved PUD-1902 and proposed for this preliminary subdivision is a requirement for a minimum of one space per dwelling unit pursuant to Section 3.156 of the CCZO. Further, the PUD includes areas for open space and it would be expected that visitors for 33 dwelling units will also need parking spaces. Based on the density and community aspects of the development, a minimum of 1.5 parking spaces per dwelling unit or 50 parking spaces is required and has been established as a condition of the approved PUD-1902. The applicant has stated that sixty six (66) parking spaces will be included in the subdivision. The 66 spaces proposed will include a 2 car driveway for each of the 33 lots. The paved road width of 30 feet will allow additional on-street parking for visitors. This finding is exceeded with the applicant's proposed 66 parking spaces.

**Section 4.050 CCZO Access Management – Table 6B. Urban Standards for the City of Gold Beach Urban Growth Area** – *Local Road/Street water and sewer available – Minimum ROW – 50 feet; Minimum Roadway Paved Surface Width – 30 feet; Sidewalk Improvements – 4foot/both sides or 6 foot/one side.*



**Finding:** The applicant has proposed private streets that have a 50-foot ROW and will have a paved surface area of 30-feet. This meets the requirements of the CCZO. Sidewalks are not proposed in the subdivision. There are no sidewalks within the surrounding developments for new constructed sidewalk to connect to. However, discussions with the City of Gold Beach indicate that they are required pursuant to Section 4.050 Table 6B of the CCZO at a minimum of 6-foot on one side of the private streets. The inclusion of sidewalks to the design of the subdivision would result in elimination of individual driveways for several of the lots. This would likely cause an unintended increase in street parking. A potential resolution proposed by the applicant is placement of no-parking signs on one side of the 30-foot wide paved street and inclusion of a 6-foot wide painted area designated for pedestrian and bike use. This finding can be met with the inclusion of a designated painted area on one side of the street and posted no-parking signs to allow for pedestrian and bike use.

**Section 4.050 CCZO Access Management – 10. Additional criteria and standards – Land Divisions; 11. Corner Clearance; 20. Connectivity; 22. Liability for Maintenance; 23. County Private Road Standards; 27. Abatement and Penalty; 28. Inspection of Private Roads –** *These sections of the CCZO set forth the criteria, standards and responsibilities of the applicant to establish and construct the access management (roads) consistent with the provisions set forth for Curry County. They are the County road standards.*

**Finding:** The applicant has stated that they will design and construct the access management system (roads) consistent with the standards set forth in the CCZO and the County Road Standards as required to be reviewed and approved by the County Planning Department and County Road Department. The Proposed Preliminary Plat and Plans for the subdivision includes detail sheets for proposed new private roads which include Sawyer Way, Tara Way and Patriot Way. The applicant has stated that ingress and egress shall be by a private access with entrances on Ocean Way and Driftwood Drive. A shared road maintenance agreement will be established with CC&R's that will be created in conjunction with the Final Plat. Traffic calming devices, such as signs and pavement markings shall be installed at each entrance into the proposed subdivision on Ocean Way and Driftwood Drive.

The applicant has been working with both the Planning and Road Departments to address all of the County Road Standards and provide adjustments to the engineered plans as needed. For example, the road detail sheet that indicates an 8 inch aggregate base will be changed to the required County Road Standard of a 12 inch aggregate base. Further, the applicant has included a fence along the south side of the rain garden along Ocean Way as required by the conditions of approval of the PUD. This fence will be required to allow sight vision in order to meet the Road Standard requirement of corner vision clearance. Section 4.050 10. b) of the CCZO requires that the applicant submit a statement in writing from the County Roadmaster that the new roads as designed are consistent with the requirements for road construction as found in Article III of the

Curry County Code (County Road Standards). Further, a road maintenance agreement will be required to be reviewed and approved by the County for the private roads. Prior to Final Plat approval, “as-built” engineering/construction grade documents for all roads, driveway, grading transportation and utilities will be required and a statement from a Registered Professional Engineer that the roads have been constructed as preliminarily approved by the County.

This finding will be met provided the applicant continues to work closely with the County Planning and Road Department’s in addressing all of the specific requirements set forth in Section 4.050.

**City of Gold Beach Local Improvement Code 2.207 – Street Lights** – *Street Lighting shall be provided along all proposed streets within the City, and shall be provided to the following standards(1)Location. As part of a new street development, street lighting shall be installed at intersections and at a maximum distance of 220 feet apart; (2) Service. Nearest facility carrying 120 volts secondary and controlled by individual photoelectric control devices. All services shall be underground.; Materials and height. Galvanized steel, concrete, aluminum or fiberglass, or on existing wood distribution facilities, 25-30 feet in height.*

**Finding:** The City of Gold Beach would like to include street lights at the major intersections of the subdivision. This City requirement is a recommendation by the City to be applied just at the new road intersections of the proposed subdivision at the locations of the proposed stop signs. This includes the intersections of Ocean Way and Sawyer Way and Tara Way and Driftwood Drive. Section 7.0810 of the CCLDO General Provisions provide the Planning Commission the authority to initiate any matter pertaining to a proposed subdivision. Therefore, this finding can be met if the Planning Commission determines to apply this recommendation from the City of Gold Beach.

**Section 3.300 – CCZO Erosion Prevention and Sediment Control** – *All development activity shall comply with the requirements for erosion prevention and sediment control. The intent of these provisions is to minimize the amount of sediment and pollutants that exit the site of development activity and, thereby, minimize the amount of such material that reaches waterways, wetlands public improvements and the property of others. These provisions are intended to require that temporary and permanent measures be taken for all development activity that require or result in the disturbance of the surface or soil and/or vegetation.*

**Finding:** A detailed Erosion and Sediment Control Plan (ESCP) for clearing and grading the site was submitted and approved by the County and the Department of Environmental Quality in February/March, 2019. The detailed ESCP provides erosion control measures to remain in place throughout the development of the subdivision to insure compliance with the County requirements set forth in Section 3.300 of the CCZO as well as compliance with DEQ’s NPDES

1200-C permit. A copy of the applicant's ESCP plan has been submitted as a part of this proposed subdivision. This finding will be met with the inclusion of the applicant's ECSP as a condition to this proposed subdivision if approved.

**Section 3.400-3.450 CCZO Storm and Surface Water Management Standards** – *No permit for construction of new development or tenant improvements that results in impervious cover greater than 500 square feet for development activity on any land within Curry County that is not within the limits of an incorporated city, or under federal ownership, at the date of an application shall be issued until effects on storm water management are evaluated. The Oregon Department of Transportation (ODOT) shall require storm water and water quality management plan coordination, design approval to state standards, and applicable permits for all development impacting state transportation drainage facilities.*

**Finding:** The above sections of the CCZO identify detailed requirements of a storm water management plan (SWMP) submittal. The applicant's engineer, Stuntzner Engineering and Forestry, has submitted the attached two-page SWMP and a drainage plan sheet to identify the subdivision plan for storm water management. The two-page SWMP lacks the specificity in detail required by the CCZO and does not include enough information for the County or ODOT to conduct a thorough review and recommendation. As of the date of writing this staff report, the applicant's proposed storm water provisions are not sufficient to meet the requirements of the CCZO. Concerns raised by the County and ODOT include basic inadequacies such as pipe size, location of discharge (no outfalls are shown), inverts do not match between plan sheets, determination of adequacy of area of rain garden not documented, infiltration rate of the rain garden unknown, and knowledge that the current County and ODOT storm water system to which the proposed subdivision is discharging into has existing inadequacies during some storm events.

The applicant has stated that the storm water conveyance structures will be sized to convey the post construction 25-year 24-hour peak storm discharge. The project was delineated into two separate storm water basins according to the contributing surface area of the outfall of each basin. These basins are named Phase 1 and Phase 2&3. The names are based on the phases the development will be completed. Phase 1's outlet is along Ocean Way in the southern portion of the area and Phase 2&3 flows from the intersection of Driftwood Drive westerly until turning south to the western corner of the property. The area near Driftwood Drive is tributary to the Phase 2&3 basin in the pre-construction scenario, in the post construction scenario the same area is tributary to Phase 1 basin. This is a change from the existing drainage pattern of the area which will require approval from ODOT and the County. It also would result in needing to upgrade the roadside ditch along Ocean Way which is within ODOT ROW.



As of the date of this staff report (August 6, 2019) the applicant has stated that they will work with ODOT and the County to provide a storm water management plan that meets the requirements of Section 3.400-3.450 of the CCZO and the requirements of ODOT. This finding cannot be met with the current inadequacy of the submitted storm water management plan.

**Section 3.0210 – CCLDO Standards and Procedures for Submission of Preliminary Plans and Plats** – *(1) (a) through (s) lists specific items to be included on the preliminary plat such as: name of the subdivision, north point and scale, name and address of the subdivider and surveyor, map and tax lot numbers, roads, existing and proposed utilities, easements, lot sizes and numbers, etc.*

**Finding:** Staff has reviewed the submitted preliminary subdivision plat provided and is satisfied that all the required elements outline in Section 3.0210(1) have been provided. The proposed subdivision therefore meets the requirements of Section 3.0210(1).

**Section 3.0210(2)(a) through (e) CCLDO** – *lists specific items to be included in the preliminary plan such as: drainage plan, unusual topographic or geologic features, vicinity map, proposed method of water and sewer service.*

**Finding:** The applicant has **NOT** submitted an adequate Storm Water Management Plan (SWMP) addressing drainage. The applicant has included the other items required pursuant to this section of the CCZO for the preliminary plan. This finding cannot be met with the inadequacy of the submitted storm water management plan (SWMP).

**Section 4.0110 – 4.0310 CCLDO – Preliminary Plans – Planned Unit Developments** – *lists specific items to be included in the preliminary plans and plats for a subdivision that is a PUD including large scale plan maps, location and dimensions of all proposed and existing structures, housing densities, etc.*

**Finding:** Staff has reviewed the submitted preliminary plans and plats for the subdivision and is satisfied that all the requirements of Section 4.0110-4.0310 have been provided. The proposed subdivision therefore meets the requirements of these sections of the CCZO.

**Section 6.0110 – CCLDO Availability of Public Services** – *A statement shall accompany all initial applications describing the availability of public services, such as fire protection, electric, or other utilities. The statement shall indicate the proximity of such services in addition to giving an estimate of the capacity of the service to effectively absorb the increased demand reasonably anticipated to be place on the services as a result of the land development.*

**Finding:** The applicant has stated that the proposed method for sanitary sewerage collection shall be directed and tied to the Wedderburn Sanitary District's existing system. Water shall be provided by the City of Gold Beach and electricity shall be provided by Coos Curry Electric. All overhead lines will be placed underground in a shared trench on the east side of the property and continue north to run along the north boundary line towards the west. Coos Curry Electric and Charter Cable will provide underground power and cable to each lot from the new underground utility trench.

The application includes a letter from the Wedderburn Sanitary District which indicates that the District has sufficient capacity in the 8-inch sewer line in Ocean Way and in the existing sewer treatment plant to serve the proposed 33 lots. The District points out that its approval is based on a connection at Ocean Way and if this changes, then their approval is void. Further, the District states that construction plans need to meet the standards, codes and ordinances of the District as well as DEQ and the County.

The City of Gold Beach submitted a letter stating that they have enough excess water capacity in Wedderburn to serve the proposed development. The water system development will need to include extension of the City's water mains, hydrant installation and service connections which need to be engineered by a state certified engineer and presented to the City of Gold Beach for review.

The City of Gold Beach Fire and Rescue has submitted a letter stating that they can serve the proposed PUD provided that all road systems and turnarounds are constructed to current County Road Standards and the installation of three (3) hydrants will be installed at the locations indicated and agreed upon.

**Section 6.0210 CCLDO Street and Road Specification** – *All streets within partitions, subdivisions and planned unit developments, shall meet local standards for road construction as established in the roads standards adopted by Curry County and in Section 4.050 of the CCZO.*

**Finding:** This section of the Curry County Land Division Ordinance (2006) references the road standards set forth in the CCZO Section 4.050 which were updated and adopted in June, 2017. These standards are addressed in the Section 4.050 and finding for that section above.

## **VI. Public Comments**

Notification to surrounding property owners within 500 feet of the subject parcel was mailed on July 23, 2019 (notification attached). The notification included a statement that there would be a public hearing for the project on August 15<sup>th</sup>. Notification was also published in the three (3) newspapers of record for Curry County and posted on the Planning Commission web site. No public comments have been received as of the date of this staff report (August 6, 2019).

## **VII. Staff Recommendation**

Application **S-1901** for a Preliminary Subdivision Plat and Plan approval for an approved 33 lot PUD on a 7.64 acre parcel zoned Light Commercial (C-1) located on Assessor's Map 36-15 Section 25BD, Tax Lot 2100 can be approved with the following conditions **AND** provided the applicant submits a complete storm water management plan that meets the requirements set forth by ODOT and Section 3.400-3.450 of the CCZO.

1. The final plat and plans shall meet all the requirements of the Curry County Zoning and Land Division Ordinances for submission of final plans prior to final plat approval.
2. Prior to scheduling a hearing for final plat approval the applicant shall provide a disclosure statement as required in Section 6.0410 of the CCLDO.
3. The applicant shall provide a road maintenance agreement for the private roads proposed within the development.
4. The applicant shall provide a maintenance agreement for the storm water management facilities within and facilities conveying storm water to the County and ODOT storm water conveyance systems.
5. The final plat must be filed within twelve (12) months of the date of this approval. Approval shall become null and void unless the final plat is recorded or a written request for an extension of time is received by the Planning Department.
6. The water system for this development shall conform to all State of Oregon and local standards for its construction.
7. Final Detailed Plat and Plans for the land division in accordance with the Curry County Land Division Ordinance shall be submitted and approved by the Planning Commission prior to construction of the home sites.
8. The applicant shall comply with all conditions of service of the Gold Beach Wedderburn Fire District in regards to street widths, access, water supply, hydrant number and location.
9. The applicant shall comply with all conditions of service of the Wedderburn Sanitary District including a connection at Ocean Way and construction plans that meet the standards, codes and ordinances of the District as well as DEQ and the County.

10. A maintenance agreement for all portions of the PUD and subdivision that are in shared ownership shall be completed and submitted with the Final Land Division Plat and Plans.
11. Compliance with the DEQ NPDES 1200-C Erosion Control permit and County approved Erosion Control Plan shall be maintained at all times throughout construction. Erosion control structures shall be maintained until vegetation becomes established.
12. Work within the State ROW, Oregon Department of Transportation (ODOT) will require a permit from ODOT.
13. A complete Storm Water Management Plan is required to be submitted for review and approval by ODOT and the County prior to commencing with further work on the property.
14. Hydraulic calculations will be needed per Chapter 4, Appendix C of the ODOT Hydraulic Manual (2014). Specifics on all storm water outfalls to ODOT property or contributing to ODOT drainage will be needed. Proposed storm water outfall quantities should be based on existing flow to the outfall point. The quantity of flows expected to be infiltrated into existing soils needs to be identified.
15. The County Road Department agrees with ODOT's requirements for hydraulic calculations, and for any outfall to the county right of way. This will also affect ODOT in that the water that outfalls onto the county road Ocean Way then flows under Highway 101.
16. Applicant needs to show the existing storm drains locations on Ocean Way, west of the project site, with pipe sizes, flow direction and conditions noted.
17. Profiles of the underdrain system are needed showing catch basin and culvert elevations and grades.
18. Curry County Road Standards require a minimum 12" of base material. See Section 3.01.090 of the County Road Standards.
19. A no-parking area shall be designated on one side of the proposed private roads which include Sawyer Way, Tara Way and Patriot Way. This area shall be posted with No Parking signs.
20. A six (6) foot wide lane shall be designated and painted along the No Parking area for pedestrian and bike use.
21. The No Parking signs and painted six-foot designated pedestrian and bike lane shall be maintained in perpetuity.
22. Any work done within the county right of way will require a facility permit. The applicant may obtain a permit by contacting the road department at [roadinfo@co.curry.or.us](mailto:roadinfo@co.curry.or.us) or calling 541.247.7097.
23. Any work done in the ODOT right of way will require a permit from ODOT.
24. Stop signs (30" X 30") shall be located at the two intersections at Ocean way and at Driftwood Drive.
25. Street lights shall be installed consistent with the City of Gold Beach Local Improvement Code 2.207 standards at the two intersections at Ocean Way and at Driftwood Drive.

26. A protective fencing or buffer shall be placed between Open Space B and Ocean Way.  
The fencing shall meet the County Road Standards for sight clearance.
27. Property line boundaries for the lots shall be staked prior to construction of the dwellings.
28. A 30-foot buffer area shall be maintained adjacent to the creek during construction.  
Utility companies may encroach into this area as needed for installation of utilities.
29. Traffic calming devices shall be installed at entrances to the PUD. These can include physical changes to the road surface, signage, or paintings on the road to alert drivers to slow down.
30. The subdivision shall include at least 50 parking spaces.
31. Prior to Final Design, the applicant shall submit a statement in writing from the County Road Master that the new roads as designed are consistent with the requirements for road construction as found in Article III of the Curry County Code (County Road Standards).
32. Prior to Final Plat approval, engineering/construction grade documents for all roads, driveways, grading, storm water, transportation and utilities will be required and a statement from a Registered Professional Engineer that preliminary work has been constructed as approved by the County and ODOT as appropriate.



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RE: Pacifica at Rogue Reef Subdivision, Stormwater Management Plan

Pacifica at Rogue Reef Planned Unit Development (PUD) will develop 7.62 acres into a 33 single family dwelling PUD. This project located in Tax Lot 2100 in T. 36 S, R. 15 W, Section 25 Willamette Base Meridian. This stormwater management plan will access and mitigate possible stormwater effects from the increase in impervious surface area. Peak storm discharge can increase with the addition of impervious area. The increase in peak storm discharge will be analyzed at the 25-year 24-hour. Detention volumes will be sized to retain the 25-year 24-hour peak discharge rate. The ODOT’s Rational Method will be utilized to quantify these parameters.

The project was delineated into 2 stormwater basins according to the contributing surface area of the outfall of each basin. These basins are named Phase 1 and Phase 2&3, the names are based on the phases the development will be completed. Phase 1’s outlet is along Ocean Way in the southern portion of the area and Phase 2&3 flows from the intersection of Driftwood Drive westerly until turning south to the western corner of the property. The area near Driftwood Drive is tributary to the Phase 2&3 basin in the pre-construction scenario, in the post-construction scenario the same area is tributary to Phase 1 basin.

Using Zone 1 Oregon Rainfall IDR Curve of the 25-year 24-hour, the time of concentration ( $T_c$ ) and rainfall intensity ( $i$ ) can be solved for iteratively using an initial calculation of  $T_c$ . The Rational Method’s peak storm discharge is calculated to access the pavement’s effect on peak storm discharge.

$$Q_{\text{peak}} = C \times i \times A \times C_f$$

Post Development	C	<i>i</i> (in/hr)	$T_c$ (min)	A (acre)	$C_f$ Conv. Factor	$Q_{\text{peak}}$ (cfs)
Phase 1	0.55	2.6	12.1	3.19	1.1	5.02
Phase 2&3	0.55	3.5	5	3.07	1.1	6.5

Equation 12-32 from the ODOT Hydraulics Manual is used to quantify the required detention volume for each drainage area to prevent an increase in peak storm discharge. With the exception that we are using the peak discharge from post development only. This exceeds the required detention in order to reduce runoff from the site.



$$V_S = T_c (Q_i - Q_o)$$

(eqn. 12-32)

Where:

$V_S$  = Storage volume estimate (cubic feet)

$Q_i$  = Post-Improvement peak discharge (cfs)

$Q_o$  = Pre-Improvement peak discharge (cfs)

$T_c$  = Post-Improvement Time of Concentration

$$V_{\text{Phase 1}} = 3650 \text{ ft}^3$$

$$V_{\text{Phase 2\&3}} = 1950 \text{ ft}^3$$

Stormwater detention will be achieved with rain gardens (retention basins). Raingardens will be placed in areas that best accommodated post construction drainage direction while avoiding areas poorly suited for detention facilities, i.e. steep slopes. Both raingardens are located near the outfall location of the natural grade. Refer to the plans set for construction specifications of raingardens. The intention of the rain gardens is to retain in excess of the 2-yr storm which is above the Curry County Zoning Ordinance, section 3.443 requirements. Stormwater above the 25-yr storm will be conveyed to the existing storm systems

Concrete catch basins with overflow piping will be used to convey the excess of the 25-yr flow from the rain gardens. Phase 1 culvert outlet will flow over a spillway into the gutter on Ocean way, then dump into the existing storm catch basins in front of Shore Pines. Phase 2&3 culvert overflow will travel over a spillway into the existing storm water ditch along HWY101. The overflow piping and spillway will further dissipate flows from the rain gardens and are intended to convey storms in excess of the 25-yr storm.

Respectfully,



Mark E Hampton, PE

Stuntzner Engineering & Forestry, LLC