

CITY OF OREGON CITY

**ENGINEERING POLICY 00-01
Guidelines for Development**

EFFECTIVE: April 10, 2000

PREPARED BY

PUBLIC WORKS DEPARTMENT

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Development Services Division

Applicability. This policy applies to applicants for land use decisions and site plan reviews with regard to providing public improvements and submittal of documentation. The following sections outline some of the important requirements and helpful hints for those unfamiliar with providing public improvements as required by the Oregon City Municipal Code and Oregon City Public Works Standards. This is not an all-inclusive list of City requirements and does not relieve the applicant from meeting [the Conditions of Approval](#) and all applicable City Code and Public Works Standards.

Availability of Codes and Standards. Copies of these City Codes and Standards are available [online at www.orcity.org](#) and at City Hall in hard copy or CD-ROM for a nominal price. Some engineering firms in the local metropolitan area already own these Codes and Standards to enable them to properly plan, design, and construct City projects.

General

- Applicants shall design and construct all required public works improvements to City Standards. These Standards include the latest version in effect at the time of application of the following list of documents: Oregon City Municipal Code, Water Master Plan, Transportation System Plan, Sanitary Sewer Master Plan, Drainage Master Plan, [and any adopted individual Drainage Basin Plans](#). It includes the Public Works Design Standards, which is comprised of Sanitary Sewer, Water Distribution System, Stormwater and Grading, and Erosion Control. This list also includes the Street Work Drawings and the Site Traffic Impact Study Procedures. It may also include the City of Oregon City Review Checklist of Subdivision and Partition Plats when the development is a Subdivision, Partition, or Planned Unit Development.

Water (Water Distribution System Design Standards)

- The applicant shall provide water facilities for their development. This includes water mains, valves, fire hydrants, blow-offs, service laterals, and meters.
- All required public water system improvements shall be designed and constructed to City standards.
- The Fire Marshall shall determine the number of fire hydrants and their locations. All hydrants to be completed, installed, and operational before beginning structural framing. Hydrants shall be painted with Rodda All-Purpose Equipment Enamel (1625 Safety Orange Paint) and all chains shall be removed from the fire hydrants.
- Backflow prevention assemblies are required on all domestic lines for commercial buildings, all fire service lines, and all irrigation lines [and require a plumbing permit issued by the City's Building Division](#). Backflow prevention assemblies are also required on residential domestic lines greater than or equal to 2-inch diameter. These assemblies are also required where internal plumbing is greater than 32 feet above the water main. The type of backflow prevention device required is dependent on the degree of hazard. City Water Department personnel, certified as cross connection inspectors, shall determine the type of device to be installed in any specific instance. All backflow prevention devices shall be located on the applicant's property and are the property owner's responsibility to test and maintain in accordance with manufacturer's recommendations and Oregon statutes.
- The applicant shall verify that there are no wells on site, or if any wells are on the site prior to connecting to the public water system; the applicant shall:
 - Abandon the well per Oregon State requirements and provide copies of the final approval of well abandonment to the City; or

- Disconnect the well from the home and only use the well for irrigation. In this case, the applicant shall [obtain a plumbing permit from the City's Building Division](#) to install a back flow preventor on the public service line. The applicant shall also coordinate with the City water department to provide a cross connection inspection before connecting to the public water system.
- [New water line system must be flushed, filled to test for bacteria and pressure tested; and City Water Division will obtain two bacteriological testing results within 24 hours, and contractor shall obtain City Water Division approval before final connection to existing water line system.](#)

Sanitary Sewer (Sanitary Sewer Design Standards)

- The applicant shall provide sanitary sewer facilities to their development. This includes gravity mains, manholes, stub outs, and service laterals.
- All required public sanitary sewer system improvements shall be designed and constructed to City standards.
- Applicant must process and obtain sanitary sewer system design approval from DEQ.
- Any existing septic system on site shall be abandoned and certification documentation provided from Clackamas County [to the City Development Services Division](#) before recording the plat or obtaining a certificate of occupancy.
- If the Land Use application involves a restaurant, deli, or the like, it will require a private grease interceptor installation which can be quite costly. The Applicant should look into this with their engineer/architect for proper location, installation, and cost estimate as part of their due diligence in deciding to do the project. There are also periodic maintenance costs as well.

Stormwater (Stormwater and Grading Design Standards)

- The applicant shall provide stormwater and detention facilities for their development. This includes the stormwater mains, inlets, manholes, service laterals for roof and foundation drains, detention system if necessary, control structure if necessary, inflow and outflow devices if necessary, energy dissipaters if necessary, and landscaping when directed by the Public Works Stormwater and Grading Standards.
- [The applicant must design, construct, and complete the entire stormwater system, including the pond and it's landscaping prior to recording of the plat or obtaining a certificate of occupancy permit. The City will not accept a surety for the pond landscaping unless Staff determines that an adequate planting season is not available prior to submission of the final plat. Even if this is the case, Staff will still require a minimum of an adequate application of hydro seeding/erosion blanket, sod, or other means to ensure the pond performs adequately to meet turbidity regulations within the City's Erosion Control regulations.](#)
- The applicant shall design and construct required public stormwater system improvements to City standards and it shall be completed before building permits are issued. Each project is to coordinate with the City Drainage Master Plan, the Public Works Stormwater and Grading Standards, and the appropriate individual Basin Master Plan (as adopted) and incorporate recommendations from them as directed.
- The applicant shall design the stormwater system to detain any increased runoff created through the development of the site, as well as convey any existing off-site surface water entering the site from other properties.

- The applicant shall submit hydrology/detention calculations to the City Development Services Division for review and approval before approval of construction plans. The applicant shall provide documentation to verify the hydrology and detention calculations. The applicant shall show the 100-year overflow path and shall not design the flow to cross any developed properties.

Dedications and Easements

- The applicant shall obtain and record all off-site easements required for the project before City approval of construction plans.

Streets

- The applicant shall provide street facilities to their site including within the site and on the perimeter of the site where it borders on existing public streets. This includes half- and full-street width pavement as directed, curbs, gutters, planter strips or tree wells as directed, street trees, sidewalks, and bicycle lanes (when required by the type of street classification). This also includes city utilities (water, sanitary and storm drainage facilities), [handicap access ramps at intersections and mid-block as directed](#), traffic control devices, centerline/[intersection](#) monumentation in monument boxes, and street lights in compliance with the City Code for Oregon City and its various Master Plans. Half-street improvements include an additional 10-foot wide pavement past the centerline subject to City review of existing conditions. [This provides the required improvement on the applicant's portion of the roadway, and allows the opposing travel way to have safe passage on the new gradient.](#)
- All street names shall be reviewed and approved by the City ([Planning and Building Divisions 722-3789](#)) prior to approval of the final plat to ensure [names meet current Planning Division Street Name criteria and that](#) no duplicate names are proposed in Oregon City or the 9-1-1 Service Area.
- All street improvements shall be completed and street name and traffic control signs shall be installed before issuance of building permits.
- The applicant is responsible for all sidewalks in their development. The applicant may transfer the responsibility for the sidewalks adjacent to the right-of-way as part of the requirement for an individual building permit on local streets. However, failure to do so does not waive the applicant's requirement to construct the sidewalks. Applicant shall complete sidewalks on each residential or industrial/commercial lot in accordance with the Land Division (or Project) Compliance Agreement for the project (e.g.; subdivision, partition, or Planned Unit Development) or prior to the final sign off of a building permit.
- Applicant shall install sidewalks along any tracts within their development, any pedestrian/bicycle accessways within their development, along existing homes or industrial/commercial buildings within the development's property boundaries, and all handicap access ramps required in their development [at the time of street construction.](#)
- Street lights shall typically be owned by the City of Oregon City under PGE [Option "B"](#) and installed at the expense of the applicant. The applicant shall submit a street light plan, subject to City and PGE approval, prepared by a qualified electrical contractor. Streetlights shall be placed at street intersections and along streets at property lines. The required lights shall be installed by a qualified electrical contractor.
- Streetlights are to be spaced and installed per recommendations of the Illuminating Engineering Society of North America as published in their current issue of IES, RP-8 to provide adequate lighting for safety of drivers, pedestrians, and other modes of transportation. Streetlights for local streets shall be 100-watt high-pressure sodium fixtures

mounted on [direct-bury](#) fiberglass poles with a 25-foot mounting height unless otherwise specified. Streetlights for arterial, collector, and neighborhood collector streets shall be [200-watt](#) high-pressure sodium fixtures mounted on [base-mounted](#) brushed aluminum poles with a 30-foot mounting height unless otherwise specified. The applicant shall dedicate any necessary electrical easements on the final plat. All streetlight fixtures, mastheads, and poles shall be constructed of material approved by PGE for maintenance by PGE.

- [Street lights along certain designated traffic corridors such as Molalla Avenue require specially-approved non PGE approved lights. These systems are owned and operated by the City and require design by an Oregon-licensed Professional Electrical Engineer who shall stamp the appropriate street light plans. The design shall include the provision of either extending power from an existing City light system or providing a new meter for the power. Provisions to extend these light systems shall be provided.](#)

Grading And Erosion Control

- The applicant's engineer shall submit rough grading plan with construction plans. The engineer shall certify completed rough grading elevations to +/- 0.1 feet. For single family residential developments, a final residential lot-grading plan shall be based on these certified grading elevations and approved by the City Engineer before issuance of a building permit. If significant grading is required for the residential lots due to its location or the nature of the site, rough grading shall be required of the developer before the acceptance of the public improvements. (See Geotechnical section for cut and fill certification issues on building lots or parcels) There shall not be more than a maximum grade differential of two (2) feet at all site boundaries. Final grading shall in no way create any water traps, or create other ponding situations.
- Applicants shall obtain a DEQ 1200c permit when their site clearing effort is over one (1) acre, as modified by DEQ. Applicant shall provide a copy of their DEQ 1200c permit to the City before any clearing efforts are started.
- An Erosion Prevention and Sedimentation Control Plan shall be submitted for City approval. Applicant shall obtain an Erosion Control permit before any work on site.
 - Dewatering excavations shall not be allowed unless the discharge water meets turbidity standards (see next bullet) or is adequately clarified before it enters on-site wetlands, drainage courses, and before it leaves the site. Discharge from man-made, natural, temporary, or permanent ponds shall meet the same standard.
 - Construction activities shall not result in greater than 10 percent turbidity increase between points located upstream and downstream of construction activities.
 - Effective erosion control shall be maintained after site work is complete and throughout building permit issuance.
 - Plans shall document erosion prevention and control measures that will remain effective and be maintained until all construction is complete and permanent vegetation has been established on the site.
 - Responsible party (site steward) for erosion control maintenance throughout construction process shall be shown on the Erosion Control Plan.
 - Staff encourages applicant to select high performance erosion control alternatives to minimize the potential for water quality and fish habitat degradation in receiving waters.

Geotechnical

- Any structural fill to accommodate public improvements shall be overseen and directed by a geotechnical engineer. The geotechnical engineer shall provide test reports and certification that all structural fill has been placed as specified and provide a final summary report to the City certifying all structural fill on the site before City approval and acceptance of public improvements.
- Any cut or fill in building lots or parcels beyond the rough grading shall be subject to the Building Division's requirements for certification under the building permit.

Engineering Requirements

- Design engineer shall schedule a pre-design meeting with the City of Oregon City Development Services Division before submitting engineering plans for review.
- Street Name/Traffic Control Signs. Approved street name signs are required at all street intersections with any traffic control signs/signals/striping.
- Bench Marks. At least one benchmark based on the City's datum shall be located within a subdivision.
- Other Public Utilities. The applicant shall make necessary arrangements with utility companies for the installation of underground lines and facilities. The City Engineer may require the applicant to pay these utility companies to use trenchless methods to install their utilities in order to save designated and marked trees when the utility crosses within a dripline of a tree marked, or identified, to be saved. Applicant to bear any additional costs that this may incur.
- Technical Plan Check and Inspection Fees. The current Technical Plan Check and Inspection Fee shall be paid before approval of the final engineering plans for the required site improvements. The fee is the established percentage of a City-approved engineer's cost estimate or actual construction bids as submitted by the applicant. Half of the fee is due upon submitting plans [to Development Services](#); the other half is due upon approval of the final plans.
- It is the City's policy that the City will only provide spot check inspection for non public-funded improvements, and the applicant's engineer shall provide inspection and surveying services necessary to stake and construct the project and prepare the record (as-built) drawings when the project is complete.
- [The Applicant's inspector and contractor shall follow the City's Minimum Guidelines for Public Works Construction \(available on the City website\).](#)
- Applicant shall submit two (2) sets of final engineering plans for initial review by the City Development Services Division to include the drainage report (wet signed by the responsible engineer), and the cost estimate with half of the Technical Plan Check fee. The engineering plans shall be blackline copies, 22" x 34" or 24" x 36". Blueline copies are not acceptable.
- For projects such as subdivisions, partitions, and Planned Unit Developments, the applicant shall submit a completed copy of the City's latest final subdivision and partition plat checklist, the plat review fee, and a paper copy of the preliminary plat.
- Two (2) copies of any revised documents (in response to redlined comments) will be required for subsequent reviews, if necessary.
- The applicant shall submit, for the final City approval, seven (7) copies of the plans with two full sets wet signed in blue over the engineer's Professional Engineer Oregon stamp.
- Minimum Improvement Requirements. Applicant shall provide a surety on developments for uncompleted work including landscaping before a plat is recorded or a building sign off as required by a Compliance Agreement (available in hard copy or electronic version from City Development Services or on the City website). This occurs if the

applicant wishes to record the final plat before completion of all required improvements or occupy the new development prior to completion of the public improvements including landscaping. Surety shall be an escrow account, construction set-aside, performance guaranty, or in a form that is acceptable to the City Attorney (no bonds are allowed).

- Upon conditional acceptance of the public improvements by the City, the applicant shall provide a two-year maintenance guarantee as described in the Compliance Agreement. This Maintenance Guarantee shall be for fifteen (15) percent of the engineer's cost estimate or actual bids for the complete public improvements.
- The applicant shall submit a paper copy of the record (as-built) drawings, of field measured facilities, to the City Engineer for review before building permits are issued beyond the legal limit. Upon approval of the paper copy by the City Engineer, applicant shall submit a bond copy set and two 4-mil mylar record drawings sets as directed.
- The applicant shall submit one full set of the record (as-built) drawings, of field measured facilities, on AutoCAD files on CD-ROM, in a format acceptable to the City Engineer, and include all field changes.
- One AutoCAD file of the preliminary plat, if applicable, shall be furnished by the applicant to the City Addressing staff (in the Building Division) for addressing purposes. A sample of this format may be obtained from the City Geographical Information System Division. This information, and documents, shall be prepared at the applicant's cost.
- The applicant's surveyor shall also submit, at the time of recordation, a copy of the plat on a CD-ROM to the City in a format that is acceptable to the City's Geographic Information System Division.
- The City reserves the right to accept, or reject, record drawings that the City Engineer deems incomplete or unreadable that are submitted to meet this requirement. The applicant shall be responsible for all costs associated with meeting this condition. The applicant shall ensure their engineer submits the record drawings before the City will release final surety funds or residential building permits beyond the legal limit.
- Final Plat Requirements, if applicable. The final plat shall comply with ORS 92.010 through 92.190, and City Code. In addition the following requirements shall be required:
 - The applicant, and their surveyor, shall conform to the City's submittal and review procedures for the review and approval of plats, easements, agreements, and other legal documents associated with the division of this parcel.
 - Show the City Planning File Number on the final plat, preferably just below the title block.
 - A blackline copy of the final plat illustrating maximum building envelopes shall be submitted to the Planning Division concurrently with submittal of the plat to ensure setbacks and easements do not conflict.
 - Use recorded City control surveys for street centerline control, if applicable.
 - Show state plane coordinates on the Point of Beginning.
- The civil construction drawings, once approved by the City Development Services Division, shall have an approval period of one year in which to commence with construction. The plans and drawings shall be valid, once the City Engineer holds the preconstruction conference and construction activity proceeds, for as long as the construction takes. If the construction drawings expire before construction commences, the applicant shall ensure the civil construction documents and plans conform to the latest Standards, Specifications, and City Codes that are in place at the time of the update. The applicant shall bear the cost associated with bringing them into conformance, including additional technical plan check and review costs. [The applicant is reminded that the City Code requires that the final plat be submitted to the Development Services Division within two years after land use decision.](#)

- The applicant shall include a statement in proposed Conditions, Covenants, and Restrictions (CC & R's), plat restrictions, or some other means acceptable to the City Attorney for:
 - Maintaining surface runoff patterns established for each lot,
 - Maintaining any proposed private storm lines or detention, and
 - Conformance by individual lot owner to the City's erosion control standards when establishing or renovating landscaping.
 - The applicant shall submit the proposed method and statement to the Planning staff for review and approval, before final plat approval.
- Construction vehicles and other vehicles associated with the development shall only use the entrance as approved by the City Development Services Division to enter their site and these vehicles shall park or wait on the construction site. The applicant should provide a specified area of off street parking for the site's construction workers which meets the erosion/sedimentation control measures. Supplier vehicles and trailers (hauling vehicles) and actual construction vehicles shall not park, or wait, in such a manner that would block or hinder access for emergency vehicles. This includes private vehicles belonging to construction workers, supplier vehicles and trailers, and actual construction vehicles.
- Site construction activity is to only occur between 7:00 AM and 6:00 PM on Monday through Friday; between 9:00 AM and 6:00 PM on Saturday. No site improvement construction activity is allowed on Sunday. Construction activity includes all field maintenance of equipment, refueling, and pick up and delivery of equipment as well as actual construction activity.
- The applicant shall ensure that all applicable outside agencies are contacted and any appropriate approvals obtained for the construction of the project. The applicant shall supply copies of approvals to the City. Failure to do so shall be a justification for the City to prevent the issuance of a construction or building permit or to revoke an issued permit for this project.
- The applicant shall be responsible for paying all fees associated with the recording of documents such as non-remonstrance agreements, easements, and dedications.
- Should the applicant, or any assigns or heirs, fail to comply with any of the conditions set forth here, the City may take the appropriate legal action to ensure compliance. The applicant shall be responsible for any City legal fees and staff time associated with enforcing these conditions of approval.

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