



STATE OF WASHINGTON

STATE BUILDING CODE COUNCIL

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May 14, 2015

TO: Building Fire and Plumbing Codes Committee Members and All Interested Parties
FROM: Plumbing Code Technical Advisory Group
SUBJECT: **Plumbing Code TAG Report**

The Plumbing Code TAG has completed their review of the majority of the 2015 Uniform Plumbing Code, the proposed changes, and the existing state amendments. There are two additional meetings scheduled. The following is a summary of their recommendations for Council action.

Code Change Proposals

Code Change Proposals Received:

By March 1 Deadline	27*
Between March 2 and April 15	7 (Have not yet been assigned to TAG)
Proposals to other codes requiring coordinating review	1

Reviewed to Date: 21 (5 tabled for additional research)

Recommendations: A = 7 AM = 4 D = 9 WD = 1

See attached report for details on the proposal actions and modifications.

*One proposal was acted on by the Council and disapproved

Existing State Amendments

Existing State Amendments: 82

Reviewed to Date: 65

Recommendations:

Retain	30
Retain but modify	14 ^a + 8 ^b
Delete	13

^aMove but retain same language

^bUpdate with 2015 UPC language

Note: The 2015 UPC completely reformatted Chapter 4 and eliminated the stand-alone Water Conservation section. The state amendment to this section is now spread throughout the chapter.

Other Changes

In addition to the modifications outlined above, the TAG recommends the following amendments based on changes made to the 2015 UPC.

The TAG has yet to review Chapters 2, 8, 10, 11 and 13. There are also two possible amendments that will be recommended for Chapter 7, but those provisions are still being researched.

<p>Section 415.2</p>	<p>415.2 Drinking Fountain Alternatives Reserved. Where food is consumed indoors, water stations shall be permitted to be substituted for drinking fountains. Bottle filling stations shall be permitted to be substituted for drinking fountains up to 50 percent of the requirements for drinking fountains. Drinking fountains shall not be required for an occupant load of 30 or less.</p> <p>TAG recommends deleting this section since the IBC would take precedence.</p>
<p>*Section 606.5</p>	<p>606.5 Control Valve. A control valve shall be installed immediately ahead of each water-supplied appliance and immediately ahead of each slip joint or appliance supply.</p> <p>Parallel water distribution systems shall provide a control valve either immediately ahead of each fixture being supplied or installed at the manifold, and shall be identified with the fixture being supplied. Where parallel water distribution system manifolds are located in attics, crawl spaces, or other locations not readily accessible, a separate shutoff valve shall be required immediately ahead of each individual fixture or appliance served.</p> <p>TAG recommends amending this section to specify accessible location rather than readily accessible to decrease the cost of this provision.</p> <p>*There is a minority report on this item.</p>
<p>Section 612</p>	<p>612.0 Residential Fire Sprinkler Systems.</p> <p>TAG recommends retaining the current amendment to Section 612.1 and deleting the rest of the new sections.</p> <p>Existing: 612.1 General. Where residential fire sprinkler systems are installed, they shall be installed in accordance with the International Building Code or International Residential Code.</p>

2015 Plumbing Proposals

Log #	Proponent	Code Section(s)	Title or Subject	TAG Review		Committee Action
				Economic Impact	Recommendation	
15-P01	Mike Kennedy	WSEC C405 new section	Booster pumps	+FC	4/1: tabled for further info	
<p>C405.10 Service Water Pressure Booster Systems. Service water pressure booster systems shall be designed such that</p> <ol style="list-style-type: none"> one or more pressure sensors shall be used to vary pump speed and/or start and stop pumps. The sensor(s) shall either be located near the critical fixture(s) that determine the pressure required, or logic shall be employed that adjusts the setpoint to simulate operation of remote sensor(s). no device(s) shall be installed for the purpose of reducing the pressure of all of the water supplied by any booster system pump or booster system, except for safety devices. no booster system pumps shall operate when there is no service water flow. 						
15-P02	DOH	UPC 407.3	Hot water/public lavs	+ FC	4/15: Tabled	
<p>407.3 Limitation of Hot Water Temperature for Public Lavatories. Hot water delivered from public-use lavatories shall be limited to a maximum temperature of 120°F (49°C) by a device that conforms to ASSE 1070 or CSA B125.3 The water heater thermostat shall not be considered a suitable control for meeting this provision. <u>Automatically mixed water (where the user cannot adjust the temperature) will be tempered water, between 85°F (29°C) and 105°F (41°C).</u></p> <p>TAG tabled the proposal to wait on the outcome of the ICC hearings on related requirements</p>						
15-P03	DOH	UPC 408.3	Tub/shower control valves	+FC	4/15: Tabled	
<p>408.3 Shower and Tub-Shower Combination Control Valves. Showers and tub-shower combinations in buildings shall be provided with individual control valves of the pressure balance, thermostatic, or combination pressure balance/thermostatic, mixing valve type that provide scald and thermal shock protection for the rated flow rate of the installed showerhead. These valves shall be installed at the point of use and in accordance with ASSE 1016 or ASME A 112.18.1/CSA B 125.1. Gang showers, where supplied with a single temperature-controlled water supply pipe, shall be controlled by a mixing valve that is in accordance with ASSE 1069. Handle position stops shall be provided on such valves and shall be adjusted per the manufacturer's instructions to deliver a maximum mixed water setting of <u>120°F (49°C) between 105°F (40°C) and 110°F (43°C).</u> Where separate hot and cold water is provided, the hot water shall not exceed 120°F (49°C). The water heater thermostat shall not be considered a suitable control for meeting this provision.</p> <p>TAG tabled the proposal to wait on the outcome of the ICC hearings on related requirements</p>						
15-P04	Dave Cantrell	UPC 507.2	Water heater strapping	None	AM	
<p>507.2 Seismic Provisions. In seismic design categories C, D, E, and F D0, D1 and D2, and in townhouses in seismic design category C, Water heaters shall be anchored or strapped to resist horizontal displacement due to earthquake motion. Strapping shall be at points within the upper one-third and lower one-third of its vertical dimensions. At the lower point, a distance of not less than 4 inches (102 mm) shall be maintained from the controls to the strapping.</p>						

15-P05	DOH	UPC 601.1	Backflow-general	None	A	
<p>601.1 Applicability. This chapter <i>shall</i> govern the materials, design, and installation of <i>water supply systems</i>, including <u>backflow prevention devices, assemblies, and methods and devices</u> used for <i>backflow</i> prevention.</p>						
15-P06	DOH	UPC 609.9	Disinfection of potable water system	None	A	
<p>(4) The procedure <i>shall</i> be repeated where it is shown by <u>when a standard bacteriological examination test for drinking water, performed by a laboratory certified for drinking water in Washington State, made by an approved agency shows unsatisfactory results indicating that contamination persists in the system.</u></p>						
15-P07	DOH	UPC 611.1	Drinking water treatment units	None	AM	
<p>611.1 Application. Drinking water treatment units <i>shall</i> comply with NSF 42 or NSF 53. Water softeners <i>shall</i> comply with NSF 44. Ultraviolet water treatment systems <i>shall</i> comply with NSF 55. Reverse osmosis drinking water treatment systems <i>shall</i> comply with NSF 58. Drinking water distillation systems <i>shall</i> comply with NSF 62. <u>The installation of a water treatment unit on a building that serves the public may result in the building being regulated as a public water system under chapter 246-290 WAC. The applicability of chapter 246-290 WAC shall be determined by the Washington Department of Health, Office of Drinking Water.</u></p> <p><u>The owner of a building that serves potable water to 25 or more people at least 60 or more days per year and that installs drinking water treatment units, including but not limited to the treatment units in Section 611.1, may be regulated (as a Group A public water system) by the Washington State Department of Health under chapter 246-290 WAC. See Washington State Department of Health publication 331-488 for guidance.</u></p>						
15-P08	DOH	UPC 612.2	Sprinkler protection		D	
<p>612.2 Types of Systems. This section <i>shall</i> apply to stand-alone and multipurpose <i>wet-pipe</i> sprinkler systems that do not include the use of antifreeze. A multipurpose fire sprinkler system <i>shall</i> provide <i>potable water</i> to both fire sprinklers and <i>plumbing fixtures</i>. A stand-alone sprinkler system <i>shall</i> be separate and independent from the <i>potable water</i> distribution system. A backflow preventer shall not be required to separate a stand-alone sprinkler system from the water distribution system where the sprinkler system material is in accordance with the requirements of Section 604.0.</p> <p>TAG recommendation to keep existing state amendment and not adopt new language in Section 612:</p> <p>612.1 General. Where residential fire sprinkler systems are installed, they shall be installed in accordance with the International Building Code or International Residential Code.</p>						
15-P09	Dave Cantrell	UPC 908.2.4	Horizontal wet vent	None	A	
<p>908.2.4 Water Closet. The water closet fixture drain or trap arm connection to the wet vent shall be downstream of fixture drain or trap arm connections to the horizontal wet vent.</p>						
15-P10	Steven Huff	UPC New Section 912	Air admittance valves		D	
<p>912.0: Air Admittance Valves</p> <p>912.1: <u>Individual and branch line plumbing vents shall be permitted to terminate with a connection to an air admittance valve (AAV) where conventional venting of the fixtures would be impractical or burdensome. AAV's shall only vent fixtures that are on the same floor level and connect to a horizontal branch drain. AAV's shall not be installed in non-neutralized special</u></p>						

waste systems as described in Chapter 8 of the Uniform Plumbing Code unless specifically approved for such use by the manufacturer.

912.2: Air admittance valves shall conform to ASSE 1051. AAV's shall be installed in accordance with the requirements of this section and the manufacturer's installation instructions. The AAV shall be rated in accordance with the standard for the size of vent to which it is connected.

912.3: AAV's shall be located a minimum of four (4) inches above the branch drain or trap arm being vented and a minimum of six (6) inches above any insulation material. The AAV shall be located within the maximum developed length permitted for the vent in accordance with Chapter 7, Table 7-5. AAV's shall not be located in spaces utilized as a supply or return air plenum. AAV's shall not be used for venting a sump or ejector pump without written approval of the manufacturer.

912.4: AAV's shall be installed in accessible locations. The valve shall be located within a ventilated space that allows air to enter the valve, such as below a kitchen or bathroom cabinet. The AAV may be installed in a wall only if it is provided with a ventilated access panel and is approved for such installation by the manufacturer.

912.5: Relief Vent: A relief vent is not required on horizontal branch drains which connect to the drainage stack or building drain within four (4) branch intervals (stories) from the top of the stack. All other horizontal branch drains shall be provided with a relief vent that shall extend outdoors to the open air or shall connect to a vent stack or stack vent that terminates outdoors to the open air. The relief vent shall connect to the horizontal branch drain between the stack or building drain and the most downstream fixture drain connected to the horizontal branch drain. The relief vent shall be at least ½ the diameter of the drain served, but in no case less than 1 ¼-inch in diameter, and shall be installed in accordance with Section 905.0 and the length limitations of Chapter 7, Table 7-5. The relief vent shall be permitted to serve as a vent for other fixtures.

The TAG recommended disapproval on the basis that this particular language is specific to a single manufacturer and not all types of air admittance valves; and because this is already allowable through alternate materials and methods and engineered systems.

15-P11	DOH	UPC 1501.1.1	Allowable use		Tabled 5/6/15	
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1501.1.1 Allowable Use of Alternate Water. Where approved or required by the Authority Having Jurisdiction, alternate water sources [reclaimed (recycled) water, gray water, and on-site treated nonpotable water] shall be permitted to be used in lieu of potable water for the applications identified in this chapter. Reclaimed (recycled) water shall not be used to flush toilets or for other indoor use in any residential property or dwelling unit where residents have access to plumbing systems for repairs or modifications.

15-P12	DOH	UPC 1501.2	Alt. water source design	None	A	
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1501.2 System Design. Alternate water source systems shall be designed in accordance with this chapter by a registered design professional or who demonstrates competency to design the alternate water source system as required by the Authority Having Jurisdiction. Components, piping, and fittings used in an alternate water source system shall be listed.

Exceptions:

(1) A registered design professional is not required to design gray water systems having a maximum discharge capacity of 250 gallons per day (gal/d) (0.011 L/s) for single family and multi family dwellings.

(2) A registered design professional is not required to design an on-site treated nonpotable water system for single family dwellings having a maximum discharge capacity of 250 gal/d (0.011 L/s).

15-P13	DOH	UPC Table 1501.5	Water source testing	None	D	
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**TABLE 1501.5
MINIMUM ALTERNATE WATER SOURCE TESTING, INSPECTION, AND MAINTENANCE FREQUENCY**

DESCRIPTION	MINIMUM FREQUENCY
Inspect and clean filters and screens, and replace (where necessary).	Every 3 months
Inspect and verify that disinfection, filters and water quality treatment devices and systems are operational and maintaining minimum water quality requirements as determined by the Authority Having Jurisdiction.	In accordance with manufacturer's instructions, and the Authority Having Jurisdiction.
Inspect pumps and verify operation.	After initial installation and every 12 months thereafter

Inspect valves and verify operation. Inspect pressure tanks and verify operation. Clear debris from and inspect storage tanks, locking devices, and verify operation. Inspect caution labels and marking. Inspect and maintain mulch basins for gray water irrigation systems.				After initial installation and every 12 months thereafter After initial installation and every 12 months thereafter After initial installation and every 12 months thereafter After initial installation and every 12 months thereafter As needed to maintain mulch depth and prevent ponding and runoff.	
Cross-connection inspection and test*				After initial installation and every 12 months thereafter	
* The <i>cross-connection</i> test shall be performed in the presence of the <i>Authority Having Jurisdiction</i> in accordance with the requirements of this chapter. <i>The TAG recommended disapproval on the basis that, with the charging language in Section 1502 already deleted, there was no need for a state amendment.</i>					
15-P14	DOH	UPC 1051.5.2	Maintenance log		D
<p>1501.5.2 Maintenance Log. A maintenance log for gray water and <i>on-site treated nonpotable water</i> systems is required to have a permit in accordance with Section 1501.3 and shall be maintained by the property owner and be available for inspection. The property owner or designated appointee shall ensure that a record of testing, inspection and maintenance in accordance with Table 1501.5 is maintained in the log. The log will indicate the frequency of inspection and maintenance for each system. <i>The TAG recommended disapproval on the basis that, with the charging language in Section 1502 already deleted, there was no need for a state amendment.</i></p>					
15-P15	DOH	UPC 1501.6	O&M manual		D
<p>1501.6 Operation and Maintenance Manual. An operation and maintenance manual for gray water and onsite treated water systems required to have a permit in accordance with Section 1501.3 shall be supplied to the <i>building owner</i> by the system designer. The operating and maintenance manual shall include the following:</p> <ol style="list-style-type: none"> (1) Detailed diagram of the entire system and the location of system components. (2) Instructions on operating and maintaining the system. (3) Details on maintaining the required water quality as determined by the <i>Authority Having Jurisdiction</i>. (4) Details on deactivating the system for maintenance, repair, or other purposes. (5) Applicable testing, inspection, and maintenance frequencies in accordance with Table 1501.5. (6) A method of contacting the manufacturer(s). <p><i>The TAG recommended disapproval on the basis that, with the charging language in Section 1502 already deleted, there was no need for a state amendment.</i></p>					
15-P16	Dave Cantrell	UPC 1501.7	Minimum water quality	None	AM
<p>1501.7 Minimum Water Quality Requirements. The minimum water quality for <i>alternate water source</i> systems shall meet the applicable water quality requirements for the intended application as determined by the <i>Authority Having Jurisdiction</i>. In the absence of water quality requirements, the EPA/625/R-04/108 contains recommended water reuse guidelines to assist regulatory agencies develop, revise, or expand <i>alternate water source</i> water quality standards.</p> <p>Exception: Water treatment is not required for gray water used for subsurface irrigation. <u>The treatment for gray water used to flush toilets or urinals shall be oxidized, coagulated, filtered and disinfected, and consistent at all times with Class A reclaimed water or better.</u></p>					
15-P17	DOH	UPC 1501.7	Minimum water quality		D

<p>1501.7 Minimum Water Quality Requirements. The minimum water quality for <i>alternate water source</i> systems shall meet the applicable water quality requirements for the intended application as determined by the <u>public health Authority Having Jurisdiction</u>. In the absence of water quality requirements, the EPA/625/R-04/108 contains recommended water reuse guidelines to assist regulatory agencies develop, revise, or expand <i>alternate water source</i> water quality standards.</p> <p>Exception: Water treatment is not required for gray water used for subsurface irrigation.</p> <p><i>The TAG recommended disapproval on the basis that, with the charging language in Section 1502 already deleted, there was no need for a state amendment.</i></p>						
15-P18	Dave Cantrell	UPC 1501.12	Greywater – toilets/urinals		Tabled	
<p>1501.12 Separation Requirements. Underground <i>alternate water source service piping</i> other than <i>gray water</i> shall be separated from the <i>building sewer</i> in accordance with this code. Treated nonpotable water pipes shall be permitted to be run or laid in the same trench as <i>potable water pipes</i> with a 12 inch (305 mm) minimum vertical and horizontal separation where both <i>pipe</i> materials are <i>approved</i> for use within a <i>building</i>. Where horizontal piping materials do not comply with this requirement the minimum separation shall be increased to 60 inches (1524 mm). The <i>potable water</i> piping shall be installed at an elevation above the treated nonpotable water piping.</p> <p><u>Gray water may be used to flush water closets and urinals, including within residential property or dwelling units, but only where the residents do not have access to the plumbing system for repairs or modifications.</u></p>						
15-P19	DOH	UPC 1501.13	Abandonment	None	A	
<p>1501.13.1 General. An abandoned system or part thereof covered under the scope of this chapter shall be disconnected from remaining systems, drained, plugged, and capped in an <i>approved</i> manner. <u>Components of the abandoned system including but not limited to pipe, tubing, fittings, and valves shall not be used for potable water systems.</u></p>						
15-P20	DOH	UPC 1503.1	Reclaimed – General		D	
<p>1503.1 General. The provisions of this section shall apply to the installation, construction, alteration, and repair of reclaimed (recycled) water systems intended to supply uses such as water closets, urinals, <i>trap primers</i> for floor drains and floor sinks, aboveground and subsurface irrigation, industrial or commercial cooling or air conditioning and other uses <i>approved</i> by the <i>Authority Having Jurisdiction</i>. <u>Reclaimed water must meet the minimum technology-based treatment and reliability standards required for the use authorized. The authorized uses of reclaimed water shall be listed in the use management plan in the permit issued to the reclaimed water generator by the state of Washington. No other uses shall be allowed, unless approved in an amended permit issued by department of ecology or department of health and allowed by the reclaimed water generator or supplier, or otherwise allowed under state rules for reclaimed water.</u></p> <p><i>The TAG disapproved the proposal feeling that this proposal was redundant to Section 1501.7 and was unnecessary.</i></p>						
15-P21	DOH	UPC 1504.1	Onsite treated – General		D	
<p>1504.1 General. The provisions of this section shall apply to the installation, construction, alteration, and repair of <i>onsite treated nonpotable water</i> systems intended to supply uses such as water closets, urinals, <i>trap primers</i> for floor drains and floor sinks, above and belowground irrigation, and other uses <i>approved</i> by the <i>Authority Having Jurisdiction</i></p> <p><i>The TAG felt retaining the existing state amendment was a better option.</i></p>						
15-P22	DOH	UPC 1504.7	Gray water – residential	None	A	

1504.7 On-Site Treated Nonpotable Water Devices and Systems. Devices or equipment used to treat ~~on-site treated nonpotable water for on-site use~~ in order to maintain the minimum water quality requirements determined by the Authority Having Jurisdiction shall be listed or labeled (third-party certified) by a listing agency (accredited conformity assessment body) or approved for the intended application. Devices or equipment used to treat gray water or sewage ~~to on-site treated nonpotable water~~ for use in water closet and urinal flushing, surface irrigation, and similar applications shall be listed or labeled to NSF 350 oxidize, coagulate, filter and disinfect the gray water or sewage, and be consistent at all times with Washington Class A reclaimed water or better ~~or~~ and be approved by the Authority Having Jurisdiction.

15-P23	DOH	UPC 1504.10.2	Min. water quality	None	AM	
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~~**1504.10.2 Minimum Water Quality.** On-site treated nonpotable water supplied to toilets or urinals or for other uses in which it is sprayed or exposed shall be disinfected. Acceptable disinfection methods shall include chlorination, ultraviolet sterilization, ozone, or other methods as approved by the Authority Having Jurisdiction. The minimum water quality after treatment for use in water closet and urinal flushing, surface irrigation, and similar applications shall be the effluent criteria listed in NSF 350, or better. The minimum water quality for on-site treated nonpotable water systems shall meet the applicable water quality requirements for the intended applications as determined by the public health Authority Having Jurisdiction. **Reserved.**~~
The TAG again felt this section was redundant to Section 1501.7, and created too much confusion.

15-P24	DOH	UPC 1601.11	Rainwater catchment - abandonment	None	A	
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1601.11.1 General. An abandoned system or part thereof covered under the scope of this chapter shall be disconnected from remaining systems, drained, plugged, and capped in an approved manner. Components of the abandoned system including but not limited to pipe, tubing, fittings, and valves shall not be used for potable water systems.

15-P25	DOH	UPC Appendix K	Potable rainwater catchment		Withdrawn by proponent	
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Strike Appendix K

Portions of this Appendix are in conflict with Washington State and federal (40 CFR 141) regulations. The state regulations include those for Group A Public Water Supplies (Chapter 246-290 WAC) and Group B Public Water Supplies (Chapter 246-291 WAC), and the federal regulations include the National Primary Drinking Water Regulations (40 CFR Part 141). Specific issues include the following:

- The scope of this section is outside the normal jurisdiction of the Uniform Plumbing Code since following this section would create public water systems subject to State regulation. There are numerous requirements of public water systems that are simply not addressed by this section. However, the construct of this section gives the reader the false impression that it is a comprehensive overview of the requirements for creating a public water system.
- A definition of a public water system is not provided in Section 218.
- A definition of a private water system is not provided in Section 218.
- The minimum water quality requirements in Table K 104.2(1) and Table K 104.2(2) redefine the sampling requirements for public water systems and are impractical.

15-P26	Chuck Murray	UPC New Appendix	Local conservation	TAG recommends Disapproval; based on statutory restrictions in RCW 19.27.170(9)		
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APPENDIX (NEW AA)
Water Efficiency and Conservation

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

AA 101 General

AA 101.1 Scope. The provisions of this appendix establish the means of conserving potable and non-potable water used in and around a building.

AA 102.0 Water-Conserving Plumbing Fixtures and Fittings

AA 102.1 General. The maximum water consumption of fixtures and fittings shall comply with the flow rates specified in Table 402.1 and Section 402.2, through Section 402.9 of the 2012 Green Plumbing and Mechanical Code Supplement, as published by the International Association of Plumbing and Mechanical Officials.

15-P27	Christopher Young	UPC 301.2/	IPC as allowable alternate			D by Council on 3/31/15
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301.2 Alternate Materials and Methods of Construction Equivalency.

Nothing in this code is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety over those prescribed by this code. Technical documentation shall be submitted to the Authority Having Jurisdiction to demonstrate equivalency. The Authority Having Jurisdiction shall have the authority to approve or disapprove the system, method, or device for the intended purpose.

Exception: The 2015 International Plumbing Code is recognized as a statewide preapproved alternate method for installing plumbing and plumbing systems and shall be permitted to be used. The application for permit and the construction documents shall note the use of the International Plumbing Code. Provisions of the Uniform Plumbing Code and the International Plumbing Code shall not be combined or interchanged unless approved by the Administrative Authority Having Jurisdiction.

TAG Review Report Guide

Economic Impact Recommendation

+	Increases cost	FC	First Cost
-	Decreases cost	O C	Ongoing Cost
SBI	Small Business Impact	EC	Enforcement Cost

AS	Approval as Submitted
D	Disapproval
AM	Approval with Modifications (see attached)
AO	Approval with Options (see attached)