**DESIGN STANDARDS FOR: P-PATCH WATER SYSTEMS**

[When the P-Patch is located on Seattle Parks & Recreation (SPR) properties]

- The P-Patch Water System methods of installation and quality control during construction shall be the same as or better than as spelled out in the SPR Standard Specifications Section 33 10 16 and SPR Standard Details No. 33 12 16.13 thru 33 12 16.43. That information can be viewed and downloaded from the SPR Website: www. seattle.gov/parks/projects/standards/ or obtained from the SPR Engineering, Design and Technical Services Section at 800 Maynard Ave. S. - 3rd Floor, Seattle, WA 98134-1336.

- The P-Patch Water System shall be constructed in such a way that it is independent from the other site irrigation, facility, or building water systems. A deduct meter shall be provided so that it can be read independently, thus allowing for separate billing of water usage to the Department of Neighborhoods P-Patch Program and so that the gardeners will not have to pay additional sewer charges for their water usage. Water meter installations are completed by the Seattle Public Utilities (Water Dept.), and a meter request form shall be submitted to the metering services section, at the beginning of the project (allow 4 to 8 weeks for the work to be completed). The meter request form can be downloaded from the SPU Website: www.seattle.gov/util/. The deduct meter shall be installed as part of the system construction, but must be installed by a licensed plumber.

- The entire P-Patch Water System needs to be designed and treated as a Non-potable water system. Gardeners may choose to wash up or drink from the system's hose bibs or hoses even though they should be discouraged from doing so. Care shall be taken throughout the design and construction process so that the potential for cross-contamination be minimized.

- The P-Patch Water System shall have backflow prevention / cross contamination devices at the Point of Connection (POC), in the form of a Pressure Reducer Valve / Double Check Valve Assembly (PRV/DCVA). An initial inspection is required for the Point of Connection installation (PRV/DCVA and meter) and shall be completed by the Seattle Public Utilities' Cross Connection Control Office by Bob Eastwood - Sr. Water Quality Consultant at (206) 233-2635. Yearly inspections of the PRV/DCVA assembly are required and must be performed by a licensed plumber. The SPR Plumbing Shop can perform this inspection or the P-Patch can hire a licensed plumber to perform the inspection for a fee. SPR plumbers would charge $75 for each inspection.

- The P-Patch Water System shall be designed and constructed in such a way that it can be easily controlled or shut down (winterized) by the gardeners. Manual drain valves shall be provided at the low point(s), as required by site conditions, with outlet piping to a storm drain structure or watercourse if available.

- The P-Patch Water System piping shall be 'Type K' Copper and Brass from the meter to the PRV/DCVA assembly and High Density Polyethylene (HDPE) piping for the remainder of the system, except at the hose bib risers, which are galvanized (see details). All other equipment, couplings, and hardware shall meet or exceed the SPR Standard Specifications and Standard Details.

  Examples include: All water system distribution lines shall be a minimum of 18" deep. All hardware shall be hot-dipped galvanized or stainless steel. All valves, hose bibs, etc., shall be brass/bronze and shall be pressured rated for 150psi or better. PVC valve boxes shall be provided at all valve locations. PRV/DCVA assembly shall be installed in a #2 Meter Box or 25-TA Concrete Vault, per SPR Standard Details for P-Patch Water Systems.

- The P-Patch Water System shall be designed and constructed in either a "loop" or "tree" configuration, keeping in mind that water pressure needs to be regulated evenly throughout the garden. Manual (isolation) valves, in valve boxes, shall be provided at the PRV/DCVA assembly and at all major 'zones' or 'branches', to allow for shut down or isolation for repairs, without shutting down the entire system. Methods for draining (winterizing) the system (if desired by the gardeners) shall also be included in the design to avoid freezing of the system during the winter months. Usually a manual drain valve shall be installed at the lowest point in the system for this purpose. If possible the outfall from the drain valve shall daylight to a catch basin, ditch, swale, water course, or directly into a planting area if possible.

- The PRV/DCVA assembly shall be set so that the operating pressure (approximately 50 to 60 psi) is not too low or too high, allowing for several gardeners to water at the same time, while not damaging the plastic sprinklers or spreaders used by the gardeners. **A PRV device shall only be required for static pressures of over 80psi at the meter.**

- A pressure test, that is the same as required by SPR Standard Specifications, shall be required before the system is accepted. System familiarization and operating procedures shall be communicated to the garden coordinators and SPR Plumbers after the system is accepted and turned over for operation.

- As-Built drawings shall be required of the Contractor and/or Designer upon Physical Completion of the system and shall be provided to the P-Patch Program and the SPR's Engineering, Design & Technical Services Section and Plumbing Shop.

END OF SECTION