



# Water Efficiency

**Lesson** Meeting water fixture flow requirements requires performance-verification.

**Goal** Achieve the flow rates listed in the Green Communities criteria and the building specifications.

**What Happened** When performance testing was completed on the first three demonstration projects, none of the projects met the criteria benchmarks on all of the water fixtures tested. While many of the flow rates required in the Minnesota Overlay are set as standards in federal law, even some fixtures required to meet federal law did not meet the flow rates specified. Kitchen faucets have been most troublesome, although some toilets and shower heads have also failed to meet the requirements.

**Recommendations** First, become familiar with the flow rates required in the Green Communities criteria. Second, ask the architect and builder to verify these flow rates are specified in the drawings. Third, test the fixtures installed to see whether they meet the specifications, and if they don't, insist that they be replaced with ones that do.

To test flow rates, use a large bucket with gallon marks on the side. Place it under the fixture you want to test and run the water at its highest flow for one minute, or fill a five gallon bucket and time how long it takes to reach capacity. Compare to gallons-per-minute rates specified in the Green Communities criteria.

If you are interested in using 1.3 gallon/flush or dual flush toilets, there are some excellent models and others that don't work so well. Look at Maximum Performance (MaP) Testing data to identify one that performs well. Data can be downloaded at [www.cuwcc.org/MaPTesting.aspx](http://www.cuwcc.org/MaPTesting.aspx).

**Take Away** Contractors aren't accustomed to confirming plumbing flow rates, and product specifications don't always accurately predict product function. Test and verify!

**Relevant Green Communities Criteria:**

**4.1a, b, c Water-Conserving Appliances and Fixtures**



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**LESSONS LEARNED Minnesota Green Communities Demonstration Projects**

This publication is part of a series of lessons learned originating from Minnesota Green Communities demonstration projects. The Minnesota Green Communities initiative is currently the largest green building program in Minnesota, with 497 units completed, 908 under construction, and another 1,645 under development. Eight demonstration projects were funded through the Minnesota Green Communities program. The initiative is completing building performance testing on the demonstration projects, and has gathered lessons learned in several areas.

The Lessons Learned series includes the following publications: Integrated Design, Multifamily Green Rehabilitation, Construction Training and Monitoring, Ductwork, Duct Design, Duct Sealing, Kitchen Ventilation, Radon Testing and Mitigation, Pressure Balancing Between Rooms, Water Efficiency, and Cost Increase Triggers in Plans and Specifications. All publications can be found online at [www.mngreencommunities.org](http://www.mngreencommunities.org).

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Minnesota Green Communities, a collaboration of the Greater Minnesota Housing Fund, the Family Housing Fund, and Enterprise, is an initiative designed to foster the creation of affordable, healthier, and more energy-efficient housing throughout Minnesota. The initiative will support the production of affordable housing with markedly reduced energy costs, use of materials beneficial to the environment, conservation-minded land use planning, and attention to the creation of healthy environments and lifestyles for individuals, children, families, and communities. For more information, please visit [www.mngreencommunities.org](http://www.mngreencommunities.org).

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