Report on Incentives for Reclaimed Water

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I. Introduction

The "Removing Barriers Sub-Task Force (sub-task force)" of the Department of Ecology's (Department) Reclaimed Water Use Rule Advisory Committee was created by direction of the 2007 Washington Legislature to identify barriers to expanded use of reclaimed water that may not be addressed within the rules to be adopted by the Department for water reclamation facilities.[1] As part of the process for addressing the Legislature's direction, the sub-task force is interested in learning how other states provide incentives for reclaimed water ("RCW") facilities, and what other innovative incentives might be adopted by the state, municipalities, or utility districts to encourage the use of reclaimed water.

This report reviews different tools that are in used in Washington and other states for a variety of environmental purposes that might be adapted by Washington to encourage the use of reclaimed water and installation of reclaimed water facilities. A separate report for the "Long-Term Funding Sub-Task Force" examines potential financing and funding mechanisms that have been used elsewhere for RCW and similar purposes.[2]

This report does not purport to cover all existing Washington programs that might be used or to analyze Washington law. If there is interest in any of the options discussed, a separate review of Washington programs, law, and practices would be needed.

II. Mandates

One way that states can "incentivize" the use of RCW is to require it in appropriate circumstances. California does this indirectly by declaring that failure to use reclaimed water for landscaping when it is available is considered waste or an unreasonable use under the State Constitution.[3] The same law requires that any local entity that produces recycled water and has determined that it will provide it within ten years within the boundaries of a locality, must notify the locality, which then has six months to adopt a recycled water ordinance to require the use of recycled water within its jurisdiction.[4] Another method used is to mandate planning for RCW. Florida's Water

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[1] Washington Senate Bill 6117, Section 5.

[2] L. Marsh for the Environmental Law Institute, *Report on Funding and Financing for Reclaimed Water Facilities*, November, 2007, prepared for the Long-Term Funding Sub-Task Force of the Reclaimed Water Use Rule Advisory Committee of the Washington Department of Ecology

[3] California Senate Bill No. 2095, Article 10.9, Water Recycling in Landscaping Act, Sec. 65603.

[4] Id.

Protection and Sustainability Act, enacted in 2005, requires the regional water supply planning function of water management districts to promote alternative water supply projects to accommodate growth and to reduce the use of traditional ground and surface water supplies.[5]

The state legislature, a municipality, or a utility could potentially require new developments to include purple pipe for landscaping or other purposes for public health and safety or conservation reasons, similar to the requirements related to the provision of water for fire protection in a new development or the requirement in California that developments of a certain scale demonstrate that there will be adequate water. Such a requirement would be strengthened if an analysis showed that RCW is currently available or assured in the reasonable future.

IV. Development planning and regulatory tools

A. Planning

Subject to State constitutional provisions, states have considerable flexibility to require municipalities to adopt comprehensive planning and zoning schemes and to have them include provisions to further state policy objectives. A state could require that all locally adopted plans include consideration of RCW zones or to favor RCW where it is or reasonably will be available. Municipalities are generally free to adopt such provisions on their own, in the absence of a state mandate.

A more radical approach is to adopt a regional agency with growth management, transportation, air quality, water, and potentially other planning, environmental management, and financing authority. Such an agency might coordinate planning across a number of sectors, including energy, mobility, water, wastewater, and land use. In doing so it could assure that RCW and other alternative water sources are included in Federal, state, and local mandated planning.

One example that partially achieves some of this integration is Metro, a directly elected regional government that serves more than 1.4 million residents in three counties, and 25 cities in the Portland, Oregon, metropolitan area.[6] Its responsibilities include urban growth boundary management, long-range planning, transportation planning, waste disposal planning, preservation of natural areas, and habitat restoration.

A rural example of a comprehensive approach to planning is New York's Adirondack Park Agency, created in 1971 by the states to develop long-range land use plans for both public and private lands within the six million acres of the Park.[7] The APA is responsible for maintaining the protection of state lands, and overseeing development proposals of privately owned lands within the twelve counties with territory in the Park all parcels and lots of land, in both the private and public sectors, are

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[5] Florida Senate Bill sb0444er.
[6] http://www.metro-region.org/index.cfm/go/by.web/id=24270
[7] http://www.apa.state.ny.us/index.html

classified in a land use and development plan and state land master plan. The purpose of the plans is to prescribe the density of development of lands in different categories. The APA also promotes smart growth within the various communities by funding planning initiatives that link environmental protection, economic development, and community livability within the special conditions of the Adirondack Park.[8]

The Northeastern Ohio Area Coordinating Agency[9] (NOACA) is another possible model for collaborative agreements among different agencies that would integrate planning in a watershed or region so that maximum efficiencies and mutually supportive outcomes could be realized among environmental and other utilities, agencies, and jurisdictions. NOACA is the federally designated metropolitan planning organization (MPO) for five counties of Northeast Ohio in the Greater Cleveland area. Among its functions is area wide water quality management planning.

B. Development approval

States can generally condition permission to develop new areas on constructing adequate facilities, including water, sewer, streets, and sidewalks if related to public health, and welfare. California in 2001 passed some "show me the water" laws that require the demonstration of adequate long-term water supply before approval of large development projects.[10] According to the Public Policy Institute of California,

> "These new laws have already made their mark. Developers are being sent back to the drawing board to come up with more secure supply options, and many projects are being designed to incorporate recycling and conservation."[11]

A state or municipality might go one-step further and require the installation of facilities or piping, if an analysis showed that reclaimed water was available or would be within a reasonable time.

C. Zoning and related tools

There are a wide variety of zoning tools that might be adapted to encourage or require RCW use in appropriate circumstances. An area of a municipality might be set aside for development of RCW compatible housing, or industrial and commercial uses. Tools that might be adaptable for this purpose include incentive, inclusionary, cluster, environmental, overlay, floating, mixed use or performance zoning or planned unit development provisions.[12] Other land use tools that may be adapted to require or

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[8] http://www.apa.state.ny.us/Current_Activities.htm

[9] http://www.noaca.org/aboutus.html

[10] Senate bill 610, c. 643, 2001; Senate Bill 221, c. 642, 2001.

[11] Public Policy Institute of California, Research Brief, Issue No. 102, July, 2005 http://www.ppic.org/content/pubs/rb/RB_705EHRB.pdf

[12] For a brief discussion of each of these tools, see *Getting to Smart Growth* (2002) and *Getting to Smart Growth II* (2003), International City/County Management Association and Smart Growth Network, available from www.icma.org or www.smartgrowth.org. Each has 100 policies for implementation and examples. See also *Protecting Water Resources with Higher Density Development*, USEPA pub., Jan. 2006, at http://www.epa.gov

encourage RCW use include rezoning for higher density, density bonuses, exemptions from impact fees or special assessments, minimum lot sizes, infill development, adaptive reuse, historic preservation grants and tax credits, special use districts as for transit oriented development, tax abatements, credits or waivers and grants of public land.[13]

Transfer of development rights (TDR) is a tool that could be used to provide incentives for RCW. It is used in many states and has been adopted in Washington. As adopted in King County, it is a voluntary land use incentive program that allows private "sending site" landowners to achieve an economic return through the sale of development rights to "receiving site" landowners.[14] TDR programs offer many advantages to local governments that want to control land use but also compensate landowners for restrictions on the development potential of their properties. TDR programs can be easier to implement than typical zoning programs; they make development more predictable and use the market to compensate landowners for lost property value. TDR programs are also more permanent than traditional zoning regulations.[15] Conditions could be placed on the receiving zone parcels that favored RCW.

D. Facility planning and siting

States have control over planning and siting major infrastructure, including water, wastewater, and transportation. California and Florida have enacted statutes encouraging or requiring provision be made for RCW in planning for expanding water supply capacity. California law provides that

> "It is hereby declared that the primary interest of the people of the state in the conservation of all available water resources requires the maximum reuse of reclaimed water in the satisfaction of requirements for beneficial uses of water."[16]

Florida's Water Protection and Sustainability Program, enacted in 2005, requires its five water management districts to promote alternative water supply projects.[17] Incorporation of preferences for considering alternative water sources, including reclaimed water could also be included in facility planning requirements.

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[13] Id.

[14] See http://dnr.metrokc.gov/wlr/tdr/

[15] For a thorough discussion of TDR programs, see Hanly-Forde, et al., *Transfer of Development Rights Programs, Using the Market for Compensation and Preservation* at http://government.cce.cornell.edu/doc/html/Transfer%20of%20Development%20Rights%20Programs.htm

[16] California Water Code, Sec. 461.

[17] Florida Senate bill 444, 2005. For a discussion, see South Florida Water Management District Quick Facts 2006 https://my.sfwmd.gov/pls/portal/docs/PAGE/PG_GRP_SFWMD_WATERSUPPLY/PORTLET%20-%20ALTERNATIVE%20WATER%20SUPPLY/TAB13062095/ALTWATERSUPPLYWITHBACKGROUND_906.PDF

E. Building and Health Codes

While outside the scope of research for this paper, it is clear that there are apparent or real barriers to greater use for RCW in health and building codes. These barriers include both traditional protections against cross connection and other possible avenues for contamination and extra protective measures to assure a wary public about the safety of RCW. A recent Metro Vancouver, Canada discussion of barriers to sustainability in building codes, including barriers to RCW, suggests better agency coordination and training, use of performance codes, and changes in legal liability among possible incentives.[18]

V. Fees and taxes

Financing tools, including fees and taxes, are discussed in a companion paper.[19] Fees and taxes are also useful as incentives as suggested in that paper. The discussion on *Allocation among Ratepayers and Affordability Issues* is particularly relevant.[20] The analysis of allocation, paying particular attention to economic and affordability issues, can provide potential avenues for providing incentives to both users and ratepayers generally.

Fees and taxes can be used more generally to promote smart growth conditions, like denser development, that could facilitate RCW use.[21]

The means used can vary, but generally will take the form of lower rates, exemptions, or credits for favored actions, such as RCW compatible new construction or renovation or higher rates for ones not favored, such as failure to use RCW when available.

VI. Insurance

Since developers might balk at pre-installing RCW compatible facilities if it is not required or will not be for a considerable period, the State or a community might create an insurance program to reduce the risks associated with developers' investment in these facilities. A source of capital for an insurance fund might be the State Revolving Funds, which have broad authorization for conduit financing by municipalities for a broad array of facilities, including RCW.[22]

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[18] http://www.gvrd.bc.ca/buildsmart/pdfs/gvrdgreenbldgcodesandpoliciesjun2007wshopsummary.pdf
[19] L. Marsh, *supra*.
[20] Id. P.4.
[21] See *Getting to Smart Growth* and *Getting to Smart Growth II*, *supra.*

[22] *The Clean Water State Revolving Fund Program: Tapping its Untapped Potential. EPA Draft,* 2007.

VII. Regulatory Simplification

As recognized by the Rule Advisory Committee, states may also simplify requirements that apply to RCW. For example, the California Water Code was amended to authorize regional boards to issue master reclamation permits to a producer and/or distributor of recycled water in lieu of prescribing individual water reuse requirements for a user of recycled water. The amendment also removed several reporting requirements.[23]

VIII. Watershed-based ecosystem service districts

More holistic, ecosystem based, utility financed, multisector, integrated approaches to achieving sustainable water systems, including RCW, are beginning to be discussed. Some academicians and sustainability professionals argue that we as consumers need to pay or trade for ecosystem values as part of our ordinary transactions. In these systems the now unmeasured and unpaid for values of providing water in a sustainable way would be incorporated into rates and other transactions within a watershed or service territory and paid for as part of our utility bill or to providers of other services.

Some of these unmeasured but measurable values include the avoidance of the need for new, expensive, and environmentally damaging new sources, the ecological and human benefits of the use of natural systems for treatment, the future cost and price stability of providing RCW, the value of sustainable jobs in a community served by a sustainable water system, etc. Incorporating the values of benefits and avoided externalities into an integrated water system will make costly and damaging projects with long-term adverse or unpredictable consequences too expensive to pursue. To avoid undue increases in rates, maximum efficiencies would be sought through expanding the boundaries of what is traditionally considered water resources to include all other sectors, such as energy, food, economic and community development, people and goods movement, exchange of goods and services, ecosystem restoration, recreation, culture, health, and education.

While there are no current examples of such a system, suggestions of using integrated, ecosystem based approaches to create multi-sectoral values can be found in diverse places. New York City's pioneering watershed agreement both avoided hugely expensive conventional treatment of the water from its upstate reservoirs and created or preserved long term watershed values. Among the measures agreed upon were updating watershed sewerage systems and roads and increasing the protection of watershed forest and agricultural lands through a combination of acquisition of lands and easements, regulation of agricultural and other activities and incentive payments to landowners.[24] Similarly, projects in Colombia, Costa Rica and elsewhere have brought together

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[23] California Water Code Section 13523.1. For more information, see http://www.swrcb.ca.gov/rwqcb2/download/orderno96-011.doc

[24] For a brief description, see http://www.epa.gov/owow/watershed/ny/nycityfi.html

municipal water suppliers, businesses that rely on clean water and forest landowners, who receive payments to protect their forests rather than exploiting them in ways that damage water quality or availability.

Geoffrey Heal of Columbia University and others have proposed to create ecosystem service districts to improve the efficient provision of watershed services necessary for human welfare, financed by government programs or local taxes.[25]

Amory Lovins of the Rocky Mountain Institute, Hank Patton of World Steward and others are developing a comprehensive intergenerational finance approach intended to take advantage of these values in a region or watershed through long-term financing of integrated, multi-sectoral beneficial outcomes.[26] A watershed-based utility would issue long-term bonds to finance infrastructure and other services via the integrated design of a full range of environmental and other services needed by both present and future generations. Investments contracted for by the utility using the bond proceeds would be measured by life cycle assessment based standards adopted by the state to assure that the services are fully sustainable over the long term. Teams of bidders would compete to come up with an integrated set of services that best fit the standards and the particular needs of the watershed or region. Debt service and profit for the winning team would come from fees paid by the recipients of the services provided.

In order for any multi-sectoral, multi-jurisdictional approach to work, there will need to be some collaborative mechanism to bring together, in a neutral forum, the various private and public entities to reach agreements on how it should be structured, financed, and implemented. Unimpeachable scientific and technological knowledge will need to be made available. Such a mechanism could build on existing watershed councils or groups, but will need to incorporate many other actors than typically belong to them. Utilities will play an especially crucial role. A governor or county executive appointed convener and neutral facilitator/process manager could help assure that parties stay together and focused on solutions.[27]

Conclusion

There are many avenues for providing incentives for RCW and other elements of sustainable water. This brief survey only skims the surface of the possible approaches and is designed to provoke discussion about the merits and problems of applying them in a Washington context.

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[25] Heal, et al., Protecting Natural Capital through Ecosystem Service Districts http://papers.ssrn.com/sol3/papers.cfm?abstract_id=279114

[26] Suggestions of this approach are found in A. Lovins, P. Hawken, & H. Lovins, *Natural Capitalism*, Little Brown,1999. A book on the subject by Patton and others is expected in 2008-9.

[27] For a discussion of a possible collaborative governance mechanism and other matters discussed here, see *EFAB Sustainable Watershed Finance Repotr*, 2007, at http://www.epa.gov/efinpage/efabsusfinwatershedrpt_07.pdf