

Water Recycling Sources Working Group

Date: January 8, 2013

Attendees:

- Faith Pickling
- Julia Chunn-Heer
- Dawn Guendert
- Greg Parkington, Office of City Councilmember Sherri Lightner
- Brent Eidson, City of San Diego
- Marsi Steirer, City of San Diego, Public Utilities Dept.
- Bill Harris, City of San Diego Stormwater Dept.
- Jeff Pasek, City of San Diego Public Utilities Dept.
- Jose Salcedo, City of San Diego, Development Services Dept.
- Ali Sohieli, City of San Diego, Development Services Dept.

Objective: To revisit previous recommendations and identify and evaluate new opportunities for increasing water recycling sources. Prioritize identified options and make recommendations consistent with the City Council's Policy 400-15.

Three recycled water supply options were earlier identified and recommendations made.

1. Graywater Systems
2. Stormwater
3. Municipal recycled water (potable and non-potable end-use)

While the recommendations were supported by the Task Force members and City Staff, based on some of the discussion by members of the Task Force and comments offered by City Staff, the working group believed there was benefit to revisiting some of the earlier recommendations and exploring opportunities for new recommendations.

Graywater Systems

Graywater is 50 to 80 percent of the wastewater that is discharged from residences. Graywater systems are commercially available that residents can install to take some of the graywater discharges from their homes and reuse that water for landscape irrigation. Earlier recommendations included:

1. Implement a "no permit" policy for "simple systems," which is understood to mean systems used for landscape irrigation that discharge less than 250 gallons a day and primarily consist of systems taking discharge water from washing machines and wash basins and does not include a potable water connection, the use of a pump, or affect other plumbing, electrical, mechanical or building components.
2. Streamline the permitting process for "complex systems," which is understood to mean systems discharge more than 250 gallons or take discharge water from other elements in a residence such as bathtubs and showers that would require more extensive in-house

plumbing modifications. The Development Services Department should work with commercial graywater system designers, installers, and other professionals to identify areas within the existing permitting process which could be modified to expedite the review and inspection process for such graywater system installations.

3. Public Utilities Department, in consultation with DSD, should develop and include information on simple graywater systems in their public outreach materials and social media outreach, and emphasize the use of Best Management Practices to prevent runoff.
4. Oversight of "complex systems" should continue to in the purview of the Development Services Department in order to ensure that plumbing and building code requirements are met.

New Recommendations

Since these recommendations were made, it has been brought to our attention, that there were some inaccuracies in the understanding of the classifications of simplex and complex systems. With the help of DSD staff, it is now understood that there are three classifications of graywater systems.

1. Closed clothes washer system – requires no permit
2. Simple (less than 250 gallons/day) – requires permit
3. Complex (more than 250 gallons/day) – requires permit

Typical permitting consists of submittal of plans, records fee, plan check fee and inspection fee. Total fees are typically in the \$400 range.

Revision to earlier recommendations

Based on having a better understanding of the classifications of graywater systems and permitting requirements the **following revisions to earlier recommendations** are offered.

1. Continue with "no permit" policy for Closed Clothes Washer Systems
2. Expand the "no permit" requirement to systems used for landscape irrigation that discharge less than 250 gallons a day and primarily consist of systems taking discharge water from washing machines and wash basins and does not include a potable water connection, the use of a pump, or affect other plumbing, electrical, mechanical or building components. Emphasize the use of Best Management Practices to prevent runoff.
3. Streamline the permitting process for "simple" and "complex systems" that take discharge water from other elements in a residence such as bathtubs and showers that would require more extensive in-house plumbing, electrical or mechanical modifications or use of a pump.

No changes to earlier recommendations 3 and 4.

Stormwater

The Stormwater Dept. is facing significant increased costs to comply with new water quality regulations (TMDLs), especially related to bacteria loads. Some of these new TMDLs could result in stormwater being treated to levels equal to drinking water. Infiltration is one method for addressing new TMDL regulations. Strategically located infiltration could also provide multiple benefits by supplementing local groundwater supplies to increase capacity and improve water quality. Thus it would be prudent for the City to investigate opportunities for using stormwater as a water supply source to increase and improve local groundwater supplies. Below are recommendations made earlier and approved by the Task Force.

1. Stormwater Dept. and Public Utilities to investigate opportunities for strategic infiltration of stormwater in areas where stormwater could replenish existing groundwater basins. This provides multiple benefits.
 - a. Infiltration may be the most cost-effective manner to address more stringent bacteria TMDLs.
 - b. Stormwater infiltration could increase the yield of existing groundwater basins and reduce salinity.
 - c. Stormwater infiltration would benefit the environment by reducing run-off.
2. Public Utilities to increase the focus on characterizing groundwater basins such as the San Pasqual Basin, San Diego Formation and San Diego River System that could be potential local water supplies
3. Stormwater Dept. and Public Utilities Dept. jointly work together to investigate potential grant funding for a feasibility and pilot study. One possibility is to develop a multi-benefit joint project that can be included in the Integrated Regional Water Management Plan for possible Dept. of Water Resources funding.

No changes to previously made and approved recommendations.

New Recommendations

The Stormwater Department has estimated the costs associated with meeting the new TMDLs could be hundreds of millions of dollars. The Stormwater Department will need to address the new regulations with programs that one, raise funding to implement projects to address stormwater run-off, and two, incentivize owners of new and existing properties to reduce their hardscape and/or capture and treatment stormwater on-site.

Many cities throughout the US are struggling with this same issue and there is an array of approaches being taken to raise money to treat stormwater run-off and incentivize owners to reduce run-off. two such examples are:

1. The City of Los Angeles is proposing a parcel fee based on the square footage and amount of ground covered by hardscape.
2. The City of Minneapolis established a program in 2005 that charges a fee for the use of the City's Stormwater management system based on size of the parcel and land use that assigns Equivalent Stormwater Units (ESU). This program offers owners the opportunity to reduce the fee by establishing on-site water quality or quantity systems, rain gardens, dry wells, pervious pavement ponds and grass rooftops.

It is our recommendation that City Staff:

1. Investigate programs instituted by other cities, evaluate their effectiveness to fund City projects to address stormwater run-off and fund programs to incentivize owners to reduce run-off and make recommendations to City Council.

Explore opportunities to develop a low impact development (LID) "Demonstration Project" in an area with high public traffic and access, such as Balboa Park, that would reduce run-off and also serve to educate the public. Alternatively, the City could pursue a "green streets" project, like the one in Los Angeles which produces multiple benefits and serves as demonstration site as well.

http://latimesblogs.latimes.com/home_blog/2010/07/elmer-avenue-sun-valley.html

No changes to earlier recommendations.

Recycled Water

Advanced treated recycled water has the potential to become a new and significant raw water supply to the both the City's and the region's drinking water treatment plants. Below are the earlier recommendations for non-potable and potable water reuse that were approved by the Task Force.

Recommendations for non-potable reuse with revisions made by the Task Force include:

1. Encourage "cost-effective" expansion of non-potable reuse by in-fill within the backbone of the existing system only.
2. Existing recycled water rates were set at a discounted rate in 2001 and no provision was made for increasing them. No adjustment to the discounted rate has been made since 2001. Revisit rate structure for new users of non-potable recycled water and adjust to recover cost of service or at least index them to keep up with increases in other water rates. The City should revisit the rate structure for non-potable recycled water users per the completion of the Recycled Pricing Study in 2013.

Recommendation for potable reuse

1. The City move forward with recommended next steps in the 2012 Recycled Water Study.
2. The City discuss with the County Water Authority its participation in Phase 2 and Phase 3 of Water Purification Project as part of a potential future regional water supply. The advanced treated water from the Water Purification Project will be stored in San Vicente Reservoir, which can serve the region.
3. City support legislation to streamline the regulatory process for indirect and direct potable reuse.

New Recommendations

Revision to Non-Potable Reuse recommendations

1. Existing recycled water rates were set at a discounted rate in 2001 and no provision was made for increasing them. No adjustment to the discounted rate has been made since 2001. The recommendation is that the City re-visit rate structure for existing and new users of non-potable recycled water and institute a discounted rate that is indexed to other potable water rates, to the extent that it does not exceed the cost of service.

Additional new recommendations for Potable Reuse

The potable reuse project currently being pursued by the City is an Indirect Potable Reuse project, which will be piped to San Vicente Reservoir to blend with local run-off and imported untreated water supplies. The currently proposed Indirect Potable Reuse project requires a 22 mile pipeline to San Vicente Reservoir at a cost in estimated to be in excess of \$200 million. Efforts are now being made to accelerate the development of regulatory guidelines for Direct Potable Reuse (DPR), which will allow the advanced treated water to be delivered directly into the distribution system. Regulatory guidelines for DPR would enable the City of San Diego to deliver the highly treated water from the Repurification Plant directly to a raw water conveyance system, thus significantly reducing the cost of the potable reuse project by eliminating the pipeline to San Vicente Reservoir.

A coalition made up of public agencies and the private sector have raised over \$2 million to fund research projects to address the issues of real time monitoring and fail-safe that are of concern to the

regulators, i.e California Department of Public Health (CDPH) and to pass legislation, such as AB2398, that will provide funding for CDPH to develop guidelines for DPR by 2016.

The ability to implement DPR would provide significant benefits to the City of San Diego and the San Diego region. According to the City's Recycled Water Study 2012, the Repurification Project has the potential to economically provide up to 80 MGD of new raw water supply for the region. The following recommendations are offered:

1. The City become an active participant in the Coalition for DPR
2. The City offer the Water Purification Demonstration Plant as a site for testing technologies and methodologies to demonstrate the ability to provide real-time monitoring and implement fail-safe process methodology for treating wastewater to potable water quality.

No changes to earlier recommendations for Potable Reuse.