SUMMER 2019

# A Watershed Moment

A NEWSLETTER OF WATERSHED MANAGEMENT GROUP

watershedmg.org 520-396-3266

## BUILDING WITH NATURE
## Scaling-up Green Infrastructure to Restore Urban Watersheds

## Inside

What is the impact of one rain garden or of one green infrastructure workshop? When does the number of installed rain gardens reach a tipping point and make a measurable, large-scale change in a community?

Tucson is sitting at that tipping point. WMG, along with many other grassroots groups, neighborhoods and families, have been installing rain gardens and green infrastructure projects across the city for over a decade. The city and county have piloted green infrastructure designs, approved new city codes, and supported water-harvesting rebate programs. But Tucsonans are hungry for more and want to ensure green infrastructure is scaled-up and becomes an integral part of our city's infrastructure (pg 12).

Now we're seeing some big changes lining up for our watershed. In June, a new recycled water project came online that creates perennial flow in the Santa Cruz River downtown (pg 6). Mayor and Council will soon be voting on a Green Stormwater Infrastructure Fund, with $3 to $5 million devoted annually to installing and maintaining public green infrastructure. And this summer, the Bureau of Land Management is publishing a plan to reintroduce beavers into Ciénega Creek, a tributary to the Santa Cruz River (pg 4).

These efforts may seem disconnected. But in fact, they are part of a new wave of watershed management and urban development that is working to build with nature instead of building without regard to nature. In a desert city, healthy rivers are the ultimate green infrastructure, with the ability to provide wide-scale cooling and ecosystem services to help manage our stormwater, provide a sustainable future water supply, and essential habitat for our desert creatures.

We can learn from nature on how to best slow, spread, and sink water into our aquifer. And sometimes we need to step back and enable nature to do the work, as beavers can do, when they are reintroduced into the Santa Cruz Watershed.

The time is ripe to scale up green infrastructure to restore our urban watersheds. In true WMG form, we're sharing the know-how and ways for you to be an essential part of this movement.

Sincerely,

Lisa Shipek
Executive Director

# BUILDING WITH NATURE

The Santa Cruz River now has year-round flow through downtown Tucson thanks to a new recycled water project. This project is part of a growing movement to build with nature and restore our desert rivers.

Restoring beavers to the Santa Cruz River watershed is part of WMG's long-term strategy to restore our heritage of flowing rivers. Join our efforts at Watershedmg.org/RRN

# *RELEASE THE BEAVER!*

## HELP BEAVERS RETURN TO THE SANTA CRUZ WATERSHED

### The American Beaver is making a big comeback in Southern Arizona!


Historically beavers were the keystone species in creeks, rivers and wetlands across southeastern Arizona, but unfortunately they were wiped out by the turn of the 19th century by fur trappers. Various reintroductions were attempted in the 1940s and 50s, but none stuck due to habitat loss caused by groundwater pumping and surface water diversions. In 1998, Bureau of Land Management reintroduced beavers to the San Pedro River, and today there are over 40 beavers there with travelling beavers showing up in nearby watersheds.

**This summer, in cooperation with the Arizona Game and Fish Department, the Bureau of Land Management is publishing a plan to reintroduce beavers into Ciénega Creek, a tributary to the Santa Cruz River.**

WMG whole-heartedly supports this reintroduction knowing that beavers, nature's river engineers, can turn a desert creek into a ciénega (wetland), with extensive riparian habitat that supports fish, frogs, birds, and humans alike. Beaver dams help do this by slowing the flow of water and sinking more water into the aquifer.

Through WMG's River Run Network, we're restoring riparian habitat and recharging our aquifer to set the conditions for a return of flows to our creeks and rivers. One of our priority areas is Ciénega Creek, and this summer, we are in the final stages of planning several restoration projects in partnership with Cienega Watershed Partnership as well as three Pima County agencies including: Regional Flood Control District; Office of Sustainability and Conservation; and Natural Resources, Parks, and Recreation Department.

Eventually, beavers could move down Ciénega Creek into the Pantano Creek which feeds into the Rillito at the confluence with Tanque Verde Creek. **If we build the habitat, and restore the flow, the beavers will come!**

1902 photo of flow along the Santa Cruz River at Congress Street. Historically, this section of river flowed perennially and was a broad channel with connected floodplains.

(A. Hadsell, 26698, courtesy of the Arizona Historical Society.)

# SANTA CRUZ RIVER FLOWS WITH RECYCLED WATER

## An Important Step Towards WMG's 50-Year Vision

The Santa Cruz River now has a steady flow downtown, thanks to Tucson Water's new recycled water project that came online June 24. The release of recycled water, or treated wastewater, into the Santa Cruz River downtown is a momentous shift for our community; shifting our water infrastructure to support our rivers instead of dewatering our rivers. In the recent past, recycled water discharged in the river was viewed as wasted water, and now it's being celebrated as an essential resource to support river health and aquifer recharge.

Several years in the making, the Santa Cruz River Heritage Project overcame major policy and management hurdles – thanks to the visionary leadership of Tucson Water and Pima County Regional Flood Control District. Now, and into the indefinite future, the Santa Cruz River has water flowing year-round through the heart of downtown, once again making the river a cultural and environmental amenity to Tucson.

This work is an important building block in WMG's 50-year vision and plan to restore Tucson's heritage of flowing rivers. A year ago, we shared our restoration vision of five vital riparian areas across Tucson, a vision illustrated by local artist and naturalist Dennis Caldwell. We wanted people to see and imagine

Mayor Jonathan Rothschild along with hundreds of Tucsonans celebrated the historic release of recycled water in the Santa Cruz River downtown on June 24th.

what a restored desert river could look like – a critical step in galvanizing the community to be part of this sea change. Now flow in the Santa Cruz River downtown is providing a daily visual of a desert river that will help open the hearts and minds of the greater community to what is possible.

## What is possible in the long-term? Here is WMG's restoration vision for the Santa Cruz River downtown:

The Heritage Project adds up to 2.8 million gallons of recycled water daily (3,150 acre feet a year) to the Santa Cruz River. A 980-foot pipeline brings water from the reclaimed system down into the river channel where it creates a narrow stream of water within the larger river channel. In addition to providing surface flow, reclaimed water percolates down through the riverbed to recharge the aquifer.

While reclaimed water is an important source of surface water flow, a healthy Santa Cruz River will ultimately need to be supported with groundwater, as it was historically. To bring up groundwater levels to reconnect to surface flow will be a much longer-term, comprehensive effort that needs support from the greater community.

This bigger vision is starting to build momentum in a collective effort through the Santa Cruz Watershed Collaborative – a two-year old effort that includes WMG, Tucson Water, Pima County Regional Flood Control District, and many other governmental and nonprofit organizations working together.

**The Santa Cruz River flows year-round at the base of Sentinel Peak – supported by a healthy groundwater aquifer. The flowing river is a cultural and ecological gem of our desert community that is essential to our city's economy and livability. A river walk meanders near the Santa Cruz under a mesquite bosque for people to enjoy the riverside up close, where they can picnic and recreate. Restaurants and parks dot the outskirts of the floodplain and are popular places for fiestas and festivals – once again becoming the center of cultural affairs. The riparian forest is a haven for dozens of bird species and native wildlife is abundant.**

The Collaborative's mission is to support a resilient and thriving greater Tucson community that has a healthy watershed supporting flowing streams and rivers.

In addition to restoring our groundwater aquifer, restoring our riparian ecosystem is a top priority, with the goal of reclaiming more floodplain along the river to restore our cottonwood willow gallery forests, mesquite bosques, and create wildlife habitat and linkages across our community. In addition, floodplain restoration enhances our protection from large floods by slowing, spreading, and infiltrating storm flows.

Our rivers – through collaborative and coordinated actions by agencies, organizations, and residents – can once again rise to the surface, nourish our community, and provide water sustainability into the future.

**Join our efforts! Learn about the work WMG is doing with the community through the River Run Network at Watershedmg.org/RRN and come to our creek walks, river restoration workshops, and clean-ups.**

*A version of this article was originally published as an Op-Ed in the Arizona Daily Star on July 19, 2019.*



# WMG CO-FOUNDER SPEARHEADS RAINWATER HARVESTING INCENTIVES AND ADVOCATES FOR RIVER RESTORATION WITH TUCSON WATER

**Tucson has one of the most progressive and comprehensive rainwater harvesting incentives in the nation, offering up to $2,000 in rebates per home.**

This rebate incentivizes people to install rain gardens and a rain tank of at least 800 gallons to optimize the rebate, in contrast to the modest 50 to 100 gallon rain barrel rebates offered in many cities. This strategic feature was designed by Catlow Shipek, WMG's Policy and Technical Director, working in coordination with Tucson Water staff, to ensure the rebate would fund systems that could provide a substantial offset to outdoor water use.

Catlow's work on Tucson's rainwater harvesting incentives is one of many things he accomplished while serving on Tucson Water's Citizens' Water Advisory Committee (CWAC). CWAC is a prestigious committee that is appointed by the mayor, city council, and the city manager to advise the water utility and provide recommendations to Mayor and Council. Catlow was recently recognized by Tucson Water for fulfilling his two terms and giving eight years of service to CWAC. He was an influential figure on the committee, tirelessly advocating for the role of conservation in water sustainability, in addition to advocating for the integration of green infrastructure, rainwater harvesting, and river restoration to become a One Water utility.

Only a year into his CWAC service, Mayor and Council directed Tucson Water in 2011 to develop a rainwater harvesting incentive. Catlow filled a leadership role on an ad-hoc committee tasked to develop the rebate. He applied his experience as a water harvesting educator, designer and practitioner to take the lead on creating an initial draft of the rebate program that was refined through committee process. Catlow helped vet the program in its development stage by meeting with mayor and council members for one-on-one feedback.

The rainwater harvesting rebate is now one of the most popular conservation incentives with Tucson Water customers and has been expanded to small businesses and includes a grant/loan offering. Over the years, Catlow continued to advocate for the program as chair of the Conservation and Education committee, to reduce financial barriers for customer participation and continue to refine the program to increase water savings and provide a stronger incentive for passive systems, also known as rain gardens.

In the second half of Catlow's service, Tucson Water initiated a path towards becoming a One Water utility, looking at ways to better integrate groundwater, surface water, rainwater, stormwater, wastewater, and reclaimed water. For the last two years, WMG was invited along with city staff to attend the One Water conference as part of a Tucson delegation. The delegation's goal was to develop a resolution about one major initiative to help shift towards a One Water framework. The Santa Cruz River Heritage Project was the primary resolution to develop from the delegation (see pg 6).

As an advocate for river restoration and keeping recycled water in the Santa Cruz River, Catlow helped push forward this shift in thinking. The Heritage project was a significant shift because, in the recent past, treated wastewater in the river was often seen as wasted water that would be better utilized as reclaimed water for irrigation or recharged in a constructed facility.

Over the years, Catlow also advocated for the integration of green infrastructure, and is currently helping advise and advocate for the Green Stormwater Infrastructure Fund being developed by city staff (see pg 12).

We want to thank Catlow for his eight years of service on CWAC, in helping the Tucson community shift to a One Water framework, create a meaningful rainwater harvesting incentive, and advocate for progressive urban watershed policies and projects to restore our rivers.

[1] The One Water framework views all water – groundwater, surface water, rainwater, stormwater, wastewater, and reclaimed water — as valuable resources that must be managed holistically and sustainably

# COMMUNITY SCIENTISTS TRACK MOMENTOUS RIVER FLOW

River Run Network members enjoy a pop-up creek walk along the Tanque Verde creek – flowing thanks to winter rains and snowmelt.

## Flow Hotspots in Sabino Creek and the Tanque Verde, Rillito, and Santa Cruz Rivers!

Above average rainfall and snow accumulation this winter, as well as well-paced storms, resulted in the perfect conditions to support flowing rivers in Tucson this spring. Rivers that historically flowed year-round realized some of their former glory – with crystal clear, shallow, braided flow that meandered through the river bed.

Through WMG's Flow365 monitoring program, our community scientists are helping track and discover flow hotspots throughout the Tucson basin. Here are some monitoring highlights:

- **50 consecutive days of flow, starting February 15, 2019, along the lower Tanque Verde Creek and the upper Rillito River**
- **Three years of continuous flow observed in Lower Sabino Creek at Wes Miller HOA park, and it is still flowing this summer!**
- **Two miles downstream from the HOA park, continuous flow in Lower Sabino Creek from January 2019 until April 24, 2019**
- **Continuous flow along the Santa Cruz River near Martinez Hill, where we started monitoring in January and it is still flowing this summer!**

Because of our Flow365 volunteers, we are capturing valuable data that is tracking surface flow and groundwater levels in critical reaches of rivers across Tucson. This information enables us to establish baseline data and monitor progress towards restoring our river restoration goals.

Kudos to some of our flow monitors who have made more than 50 observations including: Ceanne Alvine, Darryl Emmerson, Lauren Monheim, Catlow Shipek, and Jen Thorn.

While much of the observed flows were fed by winter rains and snowmelt, the lower Tanque Verde Creek and upper Rillito River were historically perennial, with groundwater-supported flow for most or all of the year, up until the mid-1900s. Dropping groundwater levels from over-pumping and poor land management caused year-round flows to dry up, and today Tucson's rivers are often referred to as "washes" in reference to their frequently dry, sandy river beds.

WMG's Flow365 community scientists are part of the River Run Network, now with 1350 members across Tucson, who have joined WMG's effort to restore Tucson's rivers. The Network, which started two years ago, offers members opportunities to participate in restoration workshops, educational creek walks, and river clean-ups. Learn more and get involved at Watershedmg.org/RRN.

# SCALING UP GREEN STORMWATER INFRASTRUCTURE

## $3 to $5 Million Fund up for Vote in 2019

It wasn't too long ago when cutting curbs for capturing stormwater was illegal in Tucson. Only 15 years ago, rainwater harvesting rebels were breaking the law when retrofitting street side curbs to capture and funnel stormwater into basins to water trees and other vegetation.

We've come a long way since then, but we still have much ground to cover. Tucson governmental organizations are being responsive to the fact that we need more trees to help reduce the urban heat island effects. To care for those trees, stormwater is now recognized as an underutilized resource that can be captured by implementing green infrastructure – to not only maintain street side vegetation but to also mitigate flooding.

Green stormwater infrastructure (GSI) refers to constructed features that use living, natural systems to provide environmental services, such as capturing, cleaning, and infiltrating stormwater; creating wildlife habitat; shading and cooling streets and buildings; and calming traffic. Based on a 2015 report WMG authored in partnership with Ward 1 and Pima County Regional Flood Control District, we require at least a 20% level of adoption of GSI throughout our urban watersheds to achieve flood mitigation results and increase urban tree canopy from 8% to 25% to cool and green our desert city, as well as to sustain appropriate maintenance of these features.

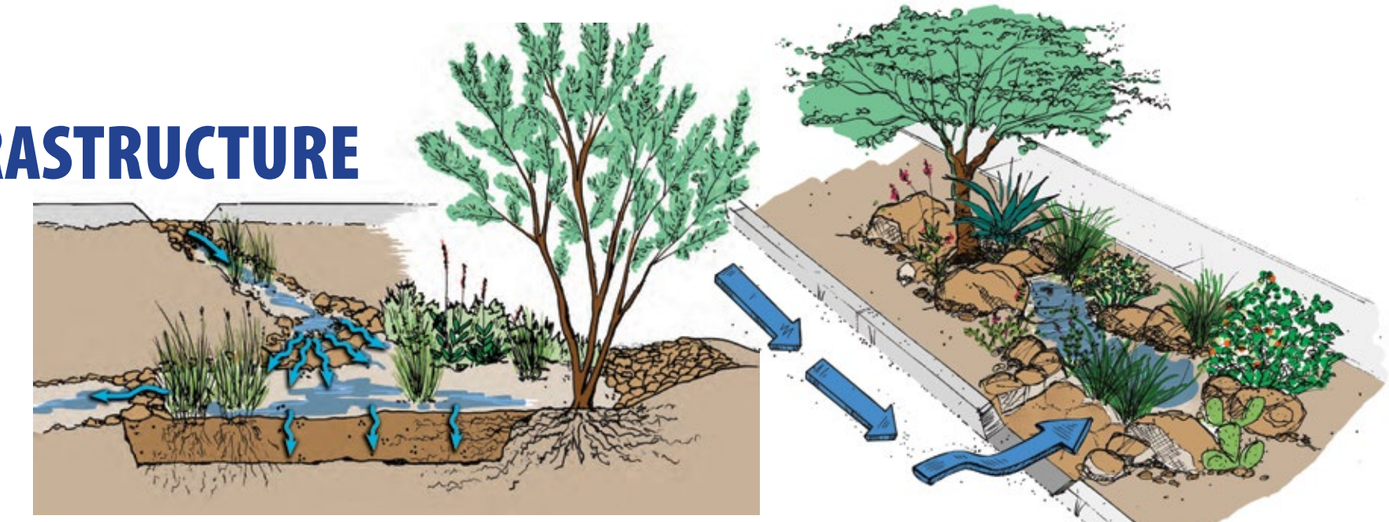
In order to scale-up, Mayor and Council has tasked Tucson Water with developing an annual $3 to $5 million Green Stormwater Infrastructure (GSI) Fund. The fund will be supported by a new fee on the city services bill in the range of $1 to $3 per month, and will be used to fund the construction and maintenance of public green infrastructure.

WMG, in partnership with American Rivers, has been helping to advise City staff and elected officials to successfully move a proposal forward for adoption. Mayor and Council expect to vote on the proposal this fall.

## What You Can Do

The success of Tucson as a leader in water sustainability and community livability relies on each of you. Please call or email the Mayor and Councilmembers to express your support for this funding proposal. Find contact information at **TucsonAZ.gov/city-government.**

You can also download WMG's **"Green Infrastructure for Desert Communities"** as a PDF or purchase the manual from our website at **Watershedmg/GSI.**



Curb cuts direct stormwater into streetside basins, or rain gardens, providing free irrigation for trees and other vegetation while reducing flooding and stormwater pollution.

**"I continue to push for a Green Stormwater Infrastructure Fund to address flooding safety and to make better use of this resource - for example, to irrigate native plants and add to our tree canopy. We need a GSI Fund to tackle stormwater issues that the city just doesn't have other resources to address."**

Tucson Mayor Jonathan Rothschild

**"Funding of the Green Stormwater Infrastructure will allow for a more livable community by allowing us to landscape medians, which brings multiple benefits. It will help reduce the urban heat island effect, encourage active transportation of all modes in the area, provide shade, and allow us to harvest water and use it as a resource."**

Diana Alarcon, City of Tucson Director of Transportation

**"We are piloting a program to build small-scale Green Stormwater Infrastructure features in neighborhoods, and are seeing that stormwater capture from streets and parking lots can be an excellent source of water to help green our community. We know we need a lot more trees and shade to combat climate change; and broader use of GSI could be a sustainable and cost-effective way to make that happen."**

Tim Thomure, Tucson Water Director

**“Students had a feeling that someone outside of the community cared about them. And then they played a huge role in building the project - digging, troweling, raking, and sweating. They put their hearts into it. It was great to see.”**

Rene Corrales, Physics & Chemistry Teacher

# GREEN INFRASTRUCTURE FOR SOCIAL JUSTICE[1]

## Retrofitting a High School in Southwest Tucson

A young woman learns to operate heavy machinery for precision excavating. A group of UA's College of Architecture, Planning and Landscape Architecture students create an award-winning rainwater harvesting design. A high school on Tucson's southwest side gets a cooling landscape that no longer floods. Students at the Star Academic High School learn about rainwater capture, and its importance for the community.

In this underserved community, WMG and nine other organizations helped Star Academic get a major landscaping overhaul. The high school's grounds lacked shade, baked in the summer and had damaging floods during heavy rains. Students and teachers were part of a dynamic process, from concept to calculations, to design and implementation of rain gardens. WMG partnered up with Arizona Project Wet to offer a practical and fun curriculum as part of the STEM (science, technology, engineering, math) educational process.

The Star Academic community, with strong Latinx roots, brought together 80 volunteers to create over 15,000 square feet of urban wildlife habitat in just seven hours! WMG's Cultural Ecologist, Joaquin Murrieta, with assistance from partners Project Wet and Tierra y Libertad, led this massive community workshop. Together they guided volunteers to plant over 100 native plants and trees and shape rain gardens with the capacity to harvest 90,000 gallons of rainwater.

In addition, this project was made possible thanks to the diverse partners including: Sunnyside Unified School District; the Udall Center; UA's College of Architecture, Planning and Landscape Architecture (CAPLA); UA's School of Natural Resources & the Environment; Pima Joint Technical Education District (JTED); and the Sonoran Institute. Special thanks to our funders: UA's Agnese Nelms Haury Program and UA's Green Fund.

As a result of this work, Joaquin received a Governing Board Recognition from Sunnyside Unified School District. Steve Holmes, superintendent of SUSD, said to Joaquin, “Let's do more!”

[1]**GREEN INFRASTRUCTURE FOR SOCIAL JUSTICE** is the name of the landscape design created by UA's CAPLA students for Star Academic High School. The design received a 2018 Honor Award of the AZ Chapter of American Society of Landscape Architects.



# INFRAESTRUCTURA VERDE POR LA JUSTICIA SOCIAL[1]

## Trabajando con una Preparatoria en el suroeste de Tucson

Una joven aprende a operar maquinaria pesada para excavaciones con precisión. Un grupo de estudiantes de la UofA de la Facultad de Planeación y Arquitectura del Paisaje son galardonados por crear un diseño de recolección de agua de lluvia. Una preparatoria en el suroeste de Tucson recibe un paisaje refrescante y sin inundaciones. Estudiantes de Star Academic High School aprenden sobre la captura de agua de lluvia y su importancia para la comunidad.

En esta comunidad desatendida, WMG y otras nueve organizaciones ayudaron a Star Academic a obtener una importante revisión de su patio escolar. Los patios de la escuela carecían de sombra, con calores tremendos en verano y tenían inundaciones dañinas durante las fuertes lluvias. Estudiantes y profesores formaron parte de un proceso dinámico, desde el concepto, los cálculos, el diseño y la implementación del jardín de lluvia. WMG en colaboración con Arizona Project Wet desarrollaron un plan de estudios práctico y divertido como parte del proceso educativo STEM (ciencia, tecnología, ingeniería, matemáticas).

¡En solo siete horas, la comunidad Star Academic, con fuertes raíces latinas, reunió a 80 voluntarios para crear más de 15,000 pies cuadrados de hábitat de vida silvestre urbana! El Ecologista Cultural de WMG, Joaquín Murrieta, con la asistencia de los socios Project Wet y Tierra y Libertad, dirigió este taller masivo con la comunidad. Juntos, guiaron a los voluntarios para plantar más de 100 plantas y árboles nativos y dar forma a jardines de lluvia con capacidad para recolectar 90,000 galones de agua de lluvia.

Además, este proyecto fue posible gracias a la diversidad de socios incluyendo: el Distrito Escolar Unificado de Sunnyside; el Centro de Udall; Colegio de Arquitectura, Planificación y Arquitectura del Paisaje de la UA (CAPLA); La Escuela de Recursos Naturales y Medio Ambiente de la UA; Distrito de Educación Técnica Conjunta de Pima (JTED); y el Sonoran Institute. Un agradecimiento especial a nuestros patrocinadores: el Programa Agnese Nelms Haury de UA y el Fondo Verde de UA.

Como resultado de este trabajo, Joaquín recibió un Reconocimiento de la Junta Directiva del Distrito Escolar Unificado de Sunnyside (SUSD). Steve Holmes, superintendente del SUSD, le dijo a Joaquín: “¡Vamos por más!”

[1]**INFRAESTRUCTURA VERDE POR LA JUSTIZIA SOZIAL** es el nombre del diseño paisajístico creado por los estudiantes de CAPLA de la UofA para Star Academic High School. El diseño recibió el Premio de Honor 2018 del Capítulo AZ de la Sociedad Americana de Arquitectos Paisajistas.

# GREEN STREETS INNOVATION IN AVONDALE: Complete Streets Gets Sustainability Upgrade

Arizona cities are increasingly looking to incorporate green stormwater infrastructure (GSI) into their roadway designs to boost urban forestry and complete streets[1] goals while conserving municipal water supplies. WMG has been on the cutting edge of this evolution as – for the last decade – we've worked with municipalities statewide to break down barriers in implementing GSI. We've done this by providing practical designs and policies, partnering on demonstration projects, and helping address maintenance needs.

One of our latest GSI clients is the City of Avondale in the Phoenix Valley.

**Avondale had experimented with green stormwater infrastructure on a Complete Streets project along its Central Avenue and reached out to WMG to improve their GSI design and learn best maintenance practices.**

WMG's Policy and Technical Director Catlow Shipek and Project Designer Nichole Casebeer worked with the city to incorporate green infrastructure as a policy supplement to Avondale's existing Street Tree Master Plan. Through the development of the policy supplement, city staff emphasized the importance of designing for maintenance, ensuring long-term tree health through appropriate species selection and placement, maximizing water conservation, enhancing community bike and pedestrian mobility, and promoting a sense of place at the foot of the Estrella Mountains and along the Agua Fria and Salt Rivers.

The resulting policy supplement includes roadway design standards for both collector and arterial streets that integrates stormwater harvesting basins to support shade trees and understory vegetation. Even in a desert city with just eight inches of annual rainfall, WMG's designs were able to meet the majority of plant irrigation needs!

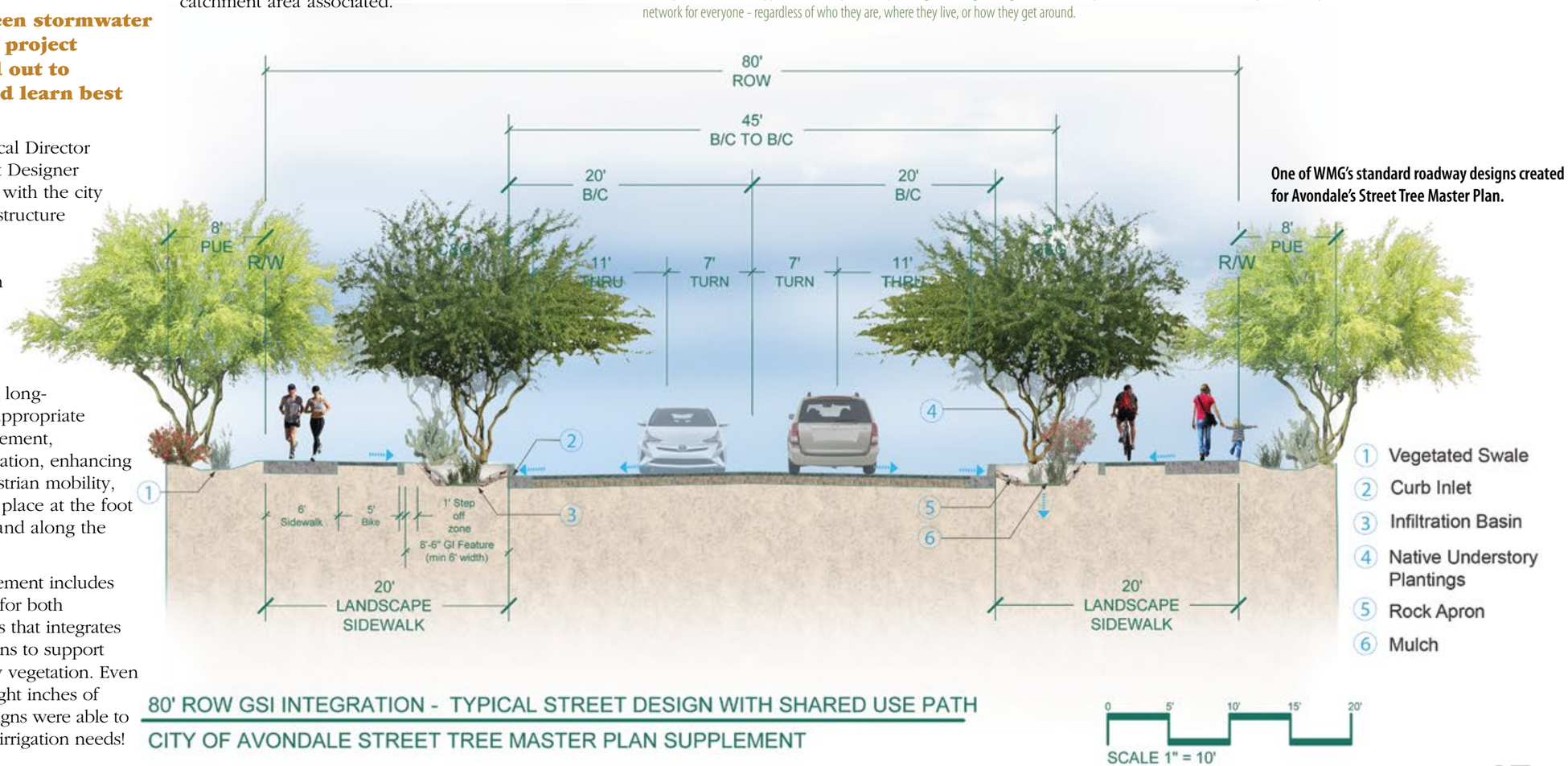
**WMG developed standard roadway designs that incorporated both green infrastructure and a shared multi-use separated path that achieved the following high performance goals:**

- Stormwater basins collect, retain, and infiltrate the first one inch of rainfall on both arterial and collector streets
- Infiltrated stormwater along the roadway provides 100% of the irrigation demand once plants are established. The center median along arterial streets will require supplemental irrigation to meet city planting standards due to the minimal catchment area associated.
- 20% and 25% tree canopy coverage for arterial and collector streets respectively
- 25% understory plant coverage for the landscaped areas and basins
- And, to foster a sense of place, a requirement that at least 75% of the total number of plants will be native.

WMG's work is already paying off! Avondale's Environmental and Sustainability Program Manager Hether Krause, who is also involved with the Sustainable Cities Network for the greater Phoenix Valley, told us that she has "already shared the street designs with a recently proposed development and they will integrate green infrastructure into a proposed park and surrounding roadways." Ms. Krause is excited to work towards a formal adoption of the policy supplement in a future revision to Avondale's Street Tree Master Plan.

To see the full report, as well as WMG's Green Infrastructure for Desert Communities manual, visit **Watershedmg.org/GSI.**

[1] Complete Streets is an approach to transportation planning and design that guides the development of a safe, connected, and equitable transportation network for everyone - regardless of who they are, where they live, or how they get around.




One of WMG's standard roadway designs created for Avondale's Street Tree Master Plan.

80' ROW GSI INTEGRATION - TYPICAL STREET DESIGN WITH SHARED USE PATH
CITY OF AVONDALE STREET TREE MASTER PLAN SUPPLEMENT

# Fall 2019

Watershed Management Group

watershedmg.org 520-396-3266

**Beavers, Brews & Santa Cruz** A River Run Network event you won't want to miss - featuring a screening of ***The Beaver Believers*** documentary, panel with local beaver experts, and local brews and food truck. Take part in WMG's Release the Beaver campaign! **Fri, Sept 27.**

**Homescape Harvest Tour** Join us for this family-friendly event to explore sustainable landscapes throughout Tucson! Features include passive and active rain harvesting systems, greywater systems, lush food gardens, urban wildlife habitats and more. **Sat, Oct 19.**

**Pruning Native Shade Trees** Learn proper tree care and pruning practices in a field and classroom session and take home practical skills for your own yard. **Sat, Nov 16**

**Rainwater on Tap** WMG's 5th Annual Rainwater on Tap features rainwater cocktails and local brews at the Living Lab. This is a #GivingTuesday event which launches our year-end fundraising campaign. **Tue, Dec 3.**

# LIVING LAB & LEARNING CENTER EVENT CALENDAR

| | | |
|---|---|---|
| **AUGUST** | Rainwater Harvesting Class (Tucson Water Rebate) | Thu, Aug 8 @ 4:30-7:30pm |
| | Living Lab & Learning Center Tour | Sat, Aug 10 @ 8-9:30am |
| | Living Lab & Learning Center Tour | Wed, Aug 14 @ 6-7:30pm |
| | ***Field Studies Class:** Rain Garden Care | Thu, Aug 15 @ 5-7:30pm |
| | Greywater Rebate Class (Tucson Water Rebate) | Thu, Aug 22 @ 5-7pm |
| | Rainwater Harvesting Class (Tucson Water Rebate) & Financing Info Session – Bilingüe | Sat, Aug 24 @ 8-11am |
| | Tucson CSA Pick-up | Wednesdays @ 4-7pm |
| **SEPTEMBER** | Living Lab & Learning Center Tour – Bilingüe | Sat, Sept 7 @ 8-9:30am |
| | ***Field Studies Class:** Water Harvesting Irrigation Systems | Thu, Sept 12 @ 4:30-7pm |
| | WMG Open House | Wed, Sept 18 @ 5:30-7pm |
| | Rainwater Harvesting Class (Tucson Water Rebate) | Thu, Sept 19 @ 4:30-7:30pm |
| | Rainwater Harvesting Class (Tucson Water Rebate) | Sat, Sept 21 @ 4-7pm |
| | Living Lab & Learning Center Tour | Wed, Sept 25 @ 5-6:30pm |
| | ***Field Studies Class:** Composting Toilets | Thu, Sept 26 @ 5-7:30pm |
| | ***Beavers, Brews, and Santa Cruz** | Fri, Sept 27 @ 5:30-8:30pm |
| | Tucson CSA Pick-up | Wednesdays @ 4-7pm |
| **OCTOBER** | Living Lab & Learning Center Tour | Sat, Oct 5 @ 9-10:30am |
| | Rainwater Harvesting Class (Tucson Water Rebate) | Thu, Oct 17 @ 4:30-7:30pm |
| | ***Homescape Harvest Tour** | Sat, Oct 19 @ 10am-3pm |
| | Greywater Harvesting Class (Tucson Water Rebate) | Thu, Oct 24 @ 5-7pm |
| | Rainwater Harvesting Class (Tucson Water Rebate) | Sat, Oct 26 @ 9am-noon |
| | Tucson CSA Pick Up | Wednesdays @ 4-7pm |
| **NOVEMBER** | Living Lab & Learning Center Tour | Sat, Nov 2 @ 9-10:30am |
| | Rainwater Harvesting Class (Tucson Water Rebate) | Thu, Nov 14 @ 4:30-7:30pm |
| | ***Field Studies Class:** Pruning Native Shade Trees | Sat, Nov 16 @ 9am-noon |
| | Living Lab & Learning Center Tour | Wed, Nov 20 @ 10-11:30am |
| | Rainwater Harvesting Class (Tucson Water Rebate) | Sat, Nov 23 @ 9am-noon |
| | Tucson CSA Pick Up | Wednesdays @ 4-7pm |
| **DECEMBER** | **Rainwater on Tap:** #GivingTuesday | Tue, Dec 3 @ 5:30-8:30pm |
| | Greywater Harvesting Class (Tucson Water Rebate) | Thu, Dec 5 @ 5-7pm |
| | Living Lab & Learning Center Tour – Bilingüe | Sat, Dec 7 @ 10-11:30am |
| | Living Lab & Learning Center Tour | Wed, Dec 11 @ 10-11:30am |
| | Rainwater Harvesting Class (Tucson Water Rebate) | Thu, Dec 12 @ 4:30-7:30pm |
| | Rainwater Harvesting Class (Tucson Water Rebate) | Sat, Dec 14 @ 9am-noon |
| | Tucson CSA Pick Up | Wednesdays @ 4-7pm |

Offerings are FREE unless denoted by an asterisk (*). See the website for costs.
Register for events at **Watershedmg.org/event/tucson** or call 520-396-3266 X22.

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# EXPLORE YOUR WATERSHED ON WMG'S CREEK WALKS!

## Join exclusive events for River Run Network members

Register at **Watershedmg.org/RRN**.

- 8/21 Meander along Tanque Verde Creek
- 9/19 Cruise the Santa Cruz
- 10/12 Explore the Tres Rios Confluence
- 10/26 Flowing Wells along Rillito River
- 11/29 Black Friday & Beavers at Cienega Creek