

canalscape



An authentic & sustainable
desert urbanism for Metro Phoenix



This publication has been made possible thanks to generous support from SRP.



"As the Valley has changed from an agricultural to urban community, the canal system has also taken on new purposes. In addition to being a water delivery system, the canals now provide business, recreational, and aesthetic opportunities for Valley residents ... SRP is working with various municipalities to ... facilitate the development of shops, restaurants, and neighborhood gathering places for enhanced recreation."

-SRP, *Water in the Desert*



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rendering by Victor Irizarry



An authentic & sustainable desert urbanism for Metro Phoenix

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Dedicated with gratitude and affection to Jack Pfister (1934-2009)
- *pillar and light* -
supporting and inspiring a better Metro Phoenix for all



Project Director
Nan Ellin

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Table of Contents

3 Canalscape by Nan Ellin

6 Timeline

by Ayrel Clark, Francisco Cardona, Constance Taylor, Kathleen Benedict, and Heath Reed

8 What Could Be

- **Canalscape Map** by Francisco Cardona
- **Envisioning the Possibilities** by Francisco Cardona, Dan Bartman, Jens Kolb, Victor Irizarry, Basim Al Atni, Julia Schnorr, Bill Mahar, Hamdan Alzahrani, Carrie Kronberg, Carter Marshall, and Heath Reed
- **Power Placemaking: The Grand Canal Energy Corridor** by Kathleen Benedict, David Sprunt, and Jennifer Hendrick
- **Competition Results** by Patrick Panetta
- **Untapped** by Doug MacEachern

20 Learning from ...

- **Other Places** by Dan Bartman
- **Others** by Canalscape Workshop

42 Getting There from Here

- **Sustainability Standards** by Andrea Baty and Riley Smith
- **Floating Gardens** by Braden Kay
- **Engaging Youth** by Braden Kay
- **Demonstrating Canalscape in Arcadia** by Ron Passarelli and Councilman Sal DiCiccio

46 The Tao of Canalscape by Nan Ellin

Acknowledgements

Canalscape

by Nan Ellin

In our very midst, we possess a largely “untapped” resource for elevating the Phoenix metropolitan region into the ranks of most livable cities. The canal system that has long been our lifeblood could also be our lifeline toward a more authentic and sustainable desert urbanism. If we are to stop being the poster child for monotonous suburban sprawl and environmental degradation, we should avail ourselves of the opportunity to leverage this remarkable asset without delay.

Amsterdam has 47 miles of canals. Venice 125. And Phoenix has ... 181! Yet, Amsterdam and Venice are widely known and lauded for their stunning canal-oriented cityscapes, while Phoenix has largely turned its back on this tremendous asset. Sure, we use the canal banks for recreation and have been engaged in canal bank enhancements—public art, benches, landscaping, shade structures, and signage—for years. But we have failed to seize the opportunity to create special places alongside the canal banks that combine live, work, and play.



Preserving scenic canals

I’m not suggesting we urbanize the entire length of our canals. Indeed, we must preserve the vast majority of these scenic canals as they are. It is curious, however, that the places where our modern street grid intersects the canals are largely neglected. The odd-shaped lots, yielded by overlap of the two systems, has discouraged development in a city accustomed to right-angled lots. As we speed over the canals in our cars, we may see them from the corner of our eyes, or not notice them at all.



Turning our backs to the canals

I propose we assist these ugly ducklings grow into beautiful swans with “canalscape,” vibrant urban cores and corridors located where canals meet major streets. This mixed-use urban infill would provide highly desirable places to gather by the water and an alternative to sprawl. Unlike Amsterdam and Venice, much smaller cities with urbanized canals throughout, Phoenix’s trademark would be distributed canalscapes, reflecting its unique quality of being a “network” city as well as a region that creatively intersperses urban living into a breathtaking desert landscape.

Neighborhoods would determine the size and character of their canalscape. It might feature cafés, restaurants, and boutiques on the ground level, with offices and condos above. It could offer a community center, library, post office, affordable housing, and apartments. Perhaps a grocery store, health club, bike shop, and daycare center, along with assisted living for seniors. These small urban hubs might be one story or more. They could blend with their surroundings or stand out. They might include public art by local schoolchildren or established artists. They could feature renewable-energy generation, urban agriculture, bike-sharing, and more. The possibilities are endless and communities would gather to make these decisions during a half-day workshop facilitated by municipalities.

The only requirement is that ground-floor uses are public and oriented to the canal as well as the street. South Bridge, a project developed by visionary developer Fred Unger along the southern bank of the Arizona Canal in Scottsdale, offers an example of such mixed-use canal and street-oriented urban development. While this project is situated in the middle of an existing downtown, I'm suggesting we apply this model to neglected parcels of our urban fabric throughout the region, wherever canals meet streets.

The benefits are many. While providing desired amenities to neighborhoods, the Phoenix metropolitan region would become known worldwide for its unique network of vital hubs along canals. Since each of these hubs would have its distinct character, people might have their own neighborhood canalscape, but would also enjoy visiting others around town. By offering comfortable and beautiful places next to the water, this initiative would contribute to providing a sense of place, identity, and community. The orientation toward the canals would bring people in contact with them more regularly, cultivating respect for our heritage as well as our precious water supply, ultimately the most effective way to nurture stewardship. For the thousands who use the canal banks daily for recreation, there would finally be a place to stop for something to drink, a bite to eat, or to use the restrooms. The resulting "eyes on the canals" would make them safer. In addition, Canalscape would contribute to urban regeneration and economic revitalization by stimulating the currently sluggish economy.

In Spring 2009, an ASU Canalscape Workshop brought together 22 students from ten programs including Planning, Sustainability, Geography, Real Estate Development, Design, Public Policy, Public Administration, City Management, Journalism, and Urban & Metropolitan Studies. A parallel Urban Design Studio, led by Lori Catalano and Jeremy Nemeth at the University of Colorado-Denver, included another 15 students from Architecture, Landscape Architecture, and Planning. We kicked off the semester with a public symposium featuring experts in water policy, land use, real estate, canal history, hydrology, and environmental engineering. In addition, artists and designers presented their canal projects and visions. We walked the canals, visiting four sites selected for their diverse conditions: a small neighborhood site, a medium commercial/residential site, a large commercial site, and the huge



site north of Sky Harbor International Airport, which could become an important gateway into and out of the city. On this six-mile walk, we spied 53 shopping carts, several mattresses, syringes, and other sordid items. Certainly not a point of pride!

The students developed a website (canalscape.asu.edu) to broaden the conversation, researched the history of the canals and proposals for them, administered a survey about people's perceptions and preferences for the canals, developed a community workshop, and introduced a series of design and policy recommendations for implementing canalscape. At the same time, the American Institute of Architects Phoenix Metro Chapter sponsored a Canal Design Competition (see pages 16-17); Phoenix Mayor Phil Gordon included Canalscape among the 17 Green Phoenix initiatives; ASU President Michael Crow featured it on his podcast; and Canalscape was designated an Arizona Centennial Legacy Project.



North of Sky Harbor International Airport

Canalscape is now moving toward implementation as neighborhood groups identify possible sites, city planners develop guidelines for Canal-Oriented Development, private developers engage in urban infill and adaptive reuse alongside the canal banks, and urban designers and artists lend their creativity to these endeavors. At ASU, the Planning program is partnering with the Real Estate Development and Architecture programs to demonstrate Canalscape through the Urbanism Workshop (geoplan.asu.edu/outreach). Students are working with faculty on community engagement, digital visualization, streamlining development, and producing a *Canal Connect* web site to render the process available to others. The Canalscape Advisory Board, composed of ASU and community members, is monitoring the overall initiative, providing ongoing feedback.

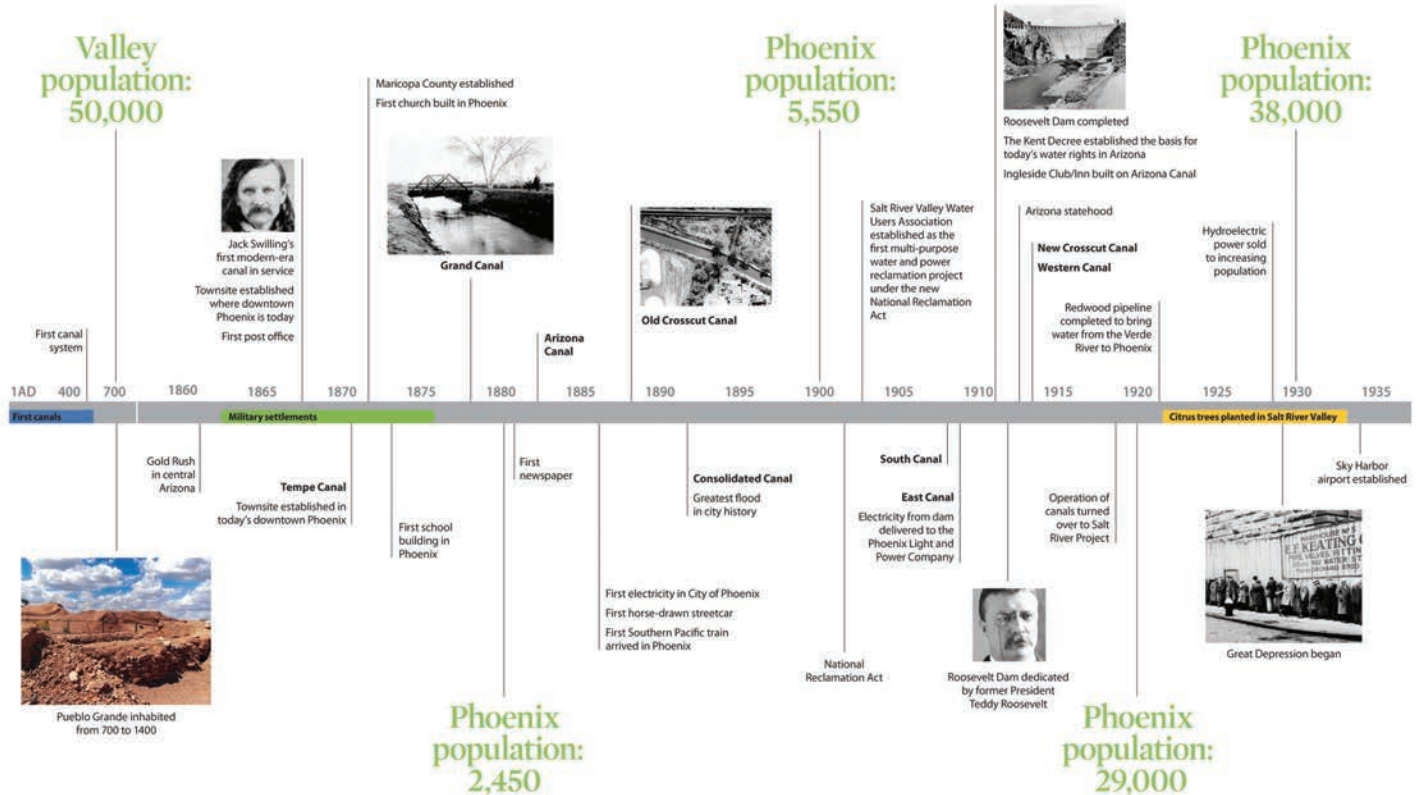
Rather than neglect those leftover parcels that depart from the repetitive grid, let's celebrate these places where modern and ancient civilizations meet, realizing the long-term regional development framework envisioned two decades ago by SRP, ASU, the Junior League, and seven Valley cities in a Metropolitan Canal Study. Rather than turn our backs to the canals, let's commemorate the 100th birthday of our state in 2012 by enhancing what gave birth to our region: a water management system that connects our communities. Perhaps we could set a goal of developing 100 sites over the next 100 years.

Many of today's problems were yesterday's solutions. Let's ensure today's solutions will not become tomorrow's problems. Honoring our place and our past, Canalscape would leave a valued legacy to future generations of a truly authentic and sustainable desert urbanism.

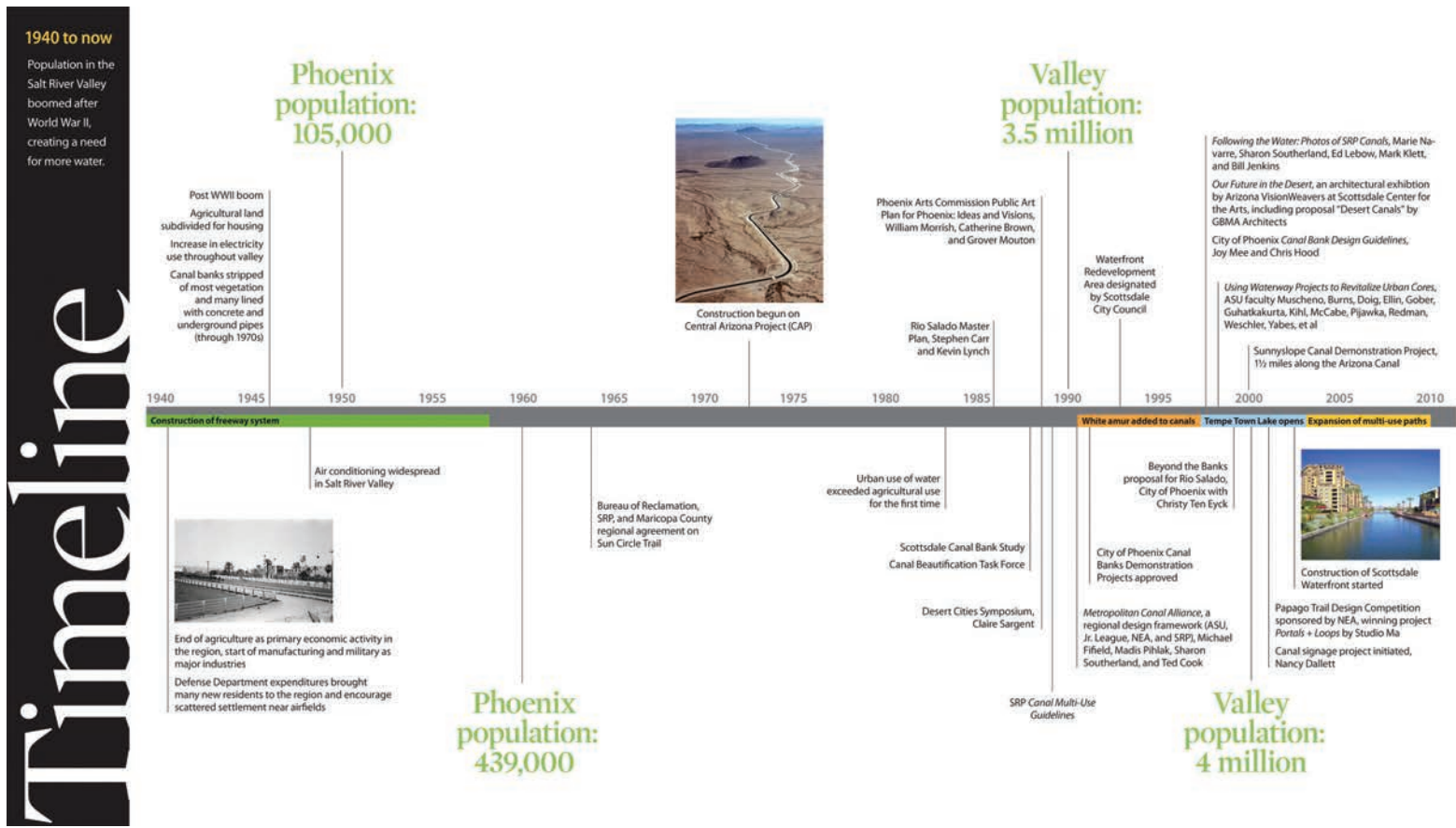
Timeline

1AD to 1939

Canals flow through the history of the Phoenix area. The first canals were developed around 1 AD.



Photos Courtesy of Pueblo Grande Museum and Archaeological Park, Salt River Project, and Library of Congress

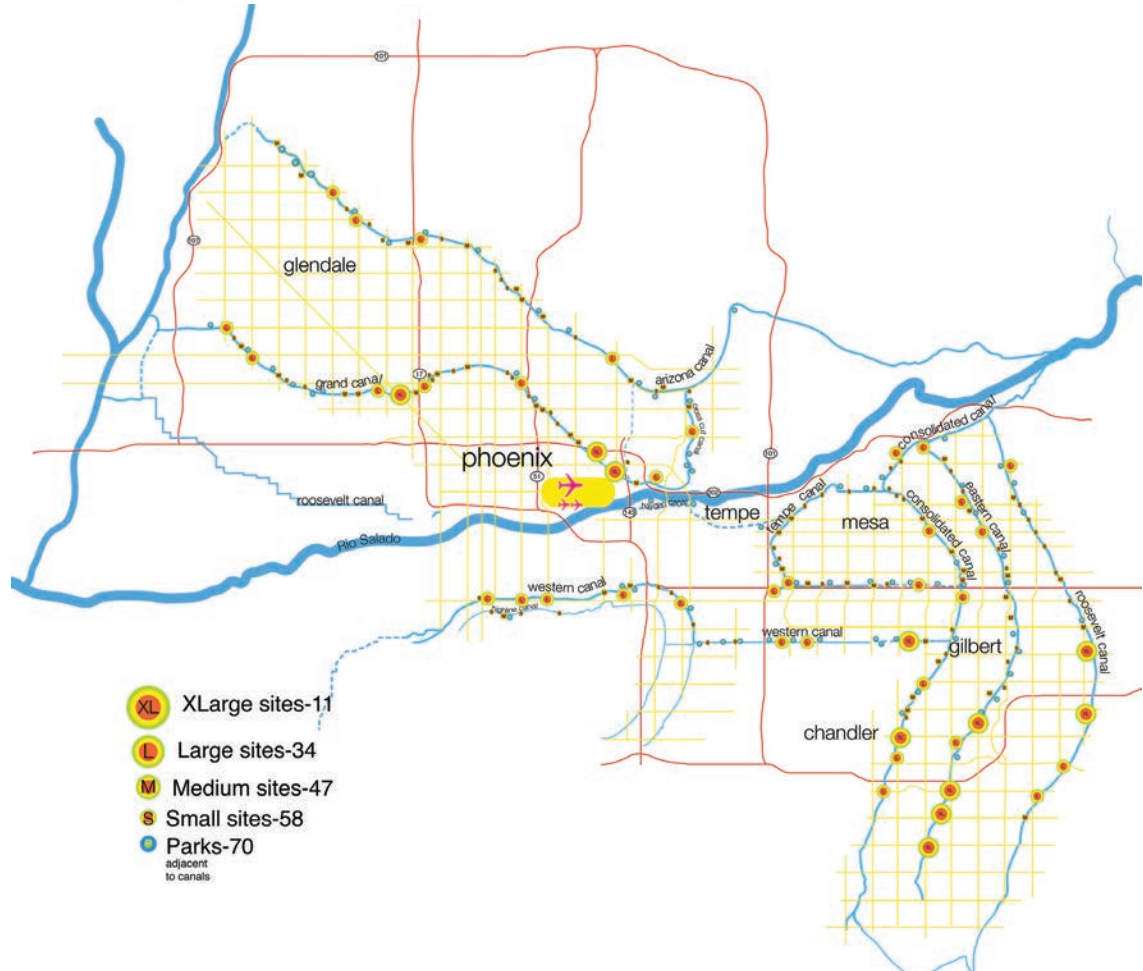


by Ayrel Clark, Francisco Cardona, Constance Taylor, Kathleen Benedict, and Heath Reed

What Could Be

Canalscape Map *by Francisco Cardona*

There are more than 150 opportunities to create vital urban hubs (of all sizes) where canals meet streets throughout the Phoenix region.



Envisioning the Possibilities



Jens Kolb

16th Street and
Indian School Road

16th Street and Indian School Road



Julia Schnorr
Basim Al Atrni
Bill Mahar



12th Street and Turney Avenue



Lateral Linkages: Bring the canal to the neighborhoods, inviting people to engage water at the human scale.



Hamdan Alzahrani
Carrie Kronberg
Carter Marshall
Heath Reed



Francisco Cardona





Dan Bartman



Power Placemaking: The Grand Canal Energy Corridor

by Kathleen Benedict, David Sprunt, and Jennifer Hendrick

The Grand Canal in Phoenix is viewed largely as an infrastructure corridor for delivering water and serving as a utility right-of-way. Buildings do not face the canal, streets dead-end into it, many vacant lots abut it, and graffiti-covered walls and fences block interaction between the canal and neighborhoods. The infrastructural design of the present-day canal has stripped most trees (and shade) from its banks, creating a hot, uncomfortable place for pedestrians. Steep edges of the canal create hazards for cyclists and pedestrians walking along its banks. Numerous newspaper headlines describe how people have driven cars into Phoenix's canals, or have fallen into the water and drowned.

Bike rider shot several times, 4 or 5 suspects on the loose (Grand Canal)

Dec 12, 2007 – 3TV

2-year old boy dies after falling in canal

Oct 17, 2008 – Arizona Republic

Body pulled from Phoenix canal

Apr 7, 2009 – Arizona Republic

DPS vehicle flips into canal during chase

Apr 16, 2009– Arizona Republic

3 immigrants drown in canal near Casa Grande

Mar 6, 2009 – Arizona Republic

Chase ends when car ends up in canal

Mar 25, 2009 – Arizona Republic



12th Street and Turney Avenue



At the same time, there is a growing emphasis on renewable energy and sustainability in American society, reflected by new initiatives at all levels of government. In Phoenix, Mayor Phil Gordon recently announced the Green Phoenix initiative, with the goal of becoming the first carbon-neutral city in the country. Additionally, Arizona has put in place targets of 15% renewable energy and 4.5% distributed power generation (locally generated power) by 2025. Nationally, President Obama and federal agencies have set targets of 10% renewable energy by 2012 and 20% by 2025, and put forth ambitious plan to invest \$150 billion in renewable energy by 2020.

We believe there is opportunity in Phoenix to improve the physical condition of the canal while working toward and taking advantage of these renewable-energy goals. The Grand Canal corridor already serves as a right-of-way for utilities, including high-tension power lines and two electric substations in our study area. We propose evolving and transforming this existing utility infrastructure into a renewable-energy spine running through Phoenix.



infrastructure for power generation



water / micro-hydro dams & bridges

Existing dams in the canal will be converted into micro-hydro electric power turbine facilities, producing enough power for about 30 homes. Dams will also incorporate pedestrian bridges, serving to connect neighborhoods and providing vantage points for vistas.



solar power / shade / urban solar farm

Areas of vacant land or large parking lots adjacent to the canal in solar districts of the large commercial nodes shall become urban solar farms, generating electricity while providing shade for parking. Modular structures are designed for disassembly and reconfiguration as land uses change.



solar power / walls and fences

Walls and fences in the residential areas will be porous and provide opportunity for further solar power implementation.



wind turbine / canal marker

Vertical axis wind turbines provide power while serving as visible markers of the canal at road crossings.

Infrastructure improvements will not only focus on local renewable power generation, but will also be equally weighted toward place-making, public health through improved walkability and accessibility of the canal paths, and community-building by providing safe and interesting gathering places that reflect the character of adjacent neighborhoods and meet the needs of nearby residents and canal users.

To achieve these ends, solar photovoltaic shade structures will provide energy for the district and lighting along the canal, while also improving street crossings, adding shade, and reducing glare along the canals. Public art, designed in part by local artists and incorporating power generation, will be used as a catalyst to encourage engagement and interaction with the space. Urban solar farms, including those built over airport and

other parking lots, would generate power and profit for investors, while at the same time provide shade for cars in long-term parking lots. In addition to solar energy, flows of water through the canal and wind through the air will be harnessed for power generation with micro-hydro dams and wind turbines. Vertical energy-generating elements, especially where streets cross the water, will help define the canal as a distinct space in the city.

This new Power Placemaking initiative would be paid for by direct investment in the small infrastructures and incentives promoting improvements by property owners. It would: increase renewable-energy portfolios of local providers; aid the region in its progress toward city, state, and national renewable-energy goals; reduce energy costs for participating property owners; and contribute to improve quality of life in Phoenix.

Competition Results

by *Patrick Panetta*, President-Elect, AIA Phoenix Metro



Design competitions are always an exercise in unpredictability. The sponsor sets goals, constructs the competition framework, and lays out the ground rules for the effort. Then, they sit back and await with great anticipation the creative results of those who have participated. Sometimes the entries are exactly what were expected; other times the results move in directions that hadn't even been considered. The entries for the Canal Design Competition sponsored by the American Institute of Architects Phoenix Metro Chapter fall mainly into the latter category.

The goals of the competition were two-fold. First, AIA Phoenix Metro wanted to build upon the momentum of the Canalscape symposium and workshop held at ASU. The idea that the region's canals should be respected more and celebrated as placemakers was intriguing as a theme for a design competition. Secondly, the competition encouraged multidisciplinary teams—including architects, developers, artists, and landowners—so that the seeds of actual projects might be planted in the minds of those with resources and/or real estate to make them happen. We hope to see some of the ideas generated for this competition come to fruition.

In reviewing the entries for the AIA Phoenix Metro Canal Design Competition, it was interesting to see how each of the teams interpreted the canals and their potential for becoming vibrant urban hubs. Some groups identified with the canals' role as precious commodity and life-giver for the area, and built their competition ideas upon that theme. Others identified and promoted the attractively soothing properties of running water, and the charm of being amongst adjacent development. And still others researched and paid homage to the history of the canals.

Some of the more interesting themes and ideas that emerged from the competition included: diversion of canal water off as tributaries into

adjacent private properties, developing a closer connection to the water around it, and then returning the water to the canal; a respect for existing neighborhoods, enhancing them through canal development; a much greater identification of and access to the canal banks; an attempt to create a Canal Iconography; attempts to re-forest the private edges of the canals to create shade and a linear park-like atmosphere; an identification of the need for better connectivity of places via the canals; and an attempt to maximize the sustainability potential of the canals.

Since the competition entries were so varied in their interpretations and proposed solutions, the jury opted to award three top proposals, rather than identify first, second, and third place winners. These three schemes each present their own unique take on the canals and how to best develop the land adjacent to the right-of-ways.

The first proposal selected for recognition was titled "Habitat, Recreation, Vegetation" by Maurita Walker, Pawel Mikolajczak, James Neal, Hardy Laskin, and Matt Aylsworth. The central theme of this proposal was uniting the canal with the surrounding community, always keeping the water as the focus, catalyst, and generator. Thus, habitat, vegetation, and recreation all benefit from the canal's proximity. This proposal utilized

new tributaries from the main canal to support urban pools and docks that would increase the connection of community to the water.



The jury appreciated the considered approach to the existing neighborhood and how canal-related development could enhance it. Proposed urban markers show the public where the canal banks could be accessed and resulting wayfinding helps strengthen the actual intersection of the canal with the major street.

The second proposal selected for recognition was titled "Arcadia Canal Zone" by the team from Greey Pickett: Jace Cheatem, Russ Greey, and Nick Newberry.



This concept proposed a partnership of the Arizona Canal and an interconnected lateral canal district. By routing some of the canal water out and then back into the main canal, a sub-network of intimate canal environments can be created without disrupting the practical utility needs of the canal.

The new lateral canal is free to become an animated and compressed environment comprised of a mixed-use village that could include restaurant terraces, promenades, shady landscaping, pedestrian bridges, and canal boats amid retail, office, entertainment, and residential uses. The jury appreciated the idea of re-routing the canal to make the most use of the water and its attractive qualities. This entry offers great opportunity for lively, mixed-use development if appropriately scaled and sensitive to its adjacent environment. The proposal celebrates the canal, making it a prominent catalyst for potential redevelopment.

The final proposal selected for recognition was titled "Lehi Lateral" by the Inkinetic team of Martha Baker, Paul H. Johnson, Dan Clevenger, and Eric Ubersax. The idea behind the Lehi Lateral proposal is to pay tribute to the history of the Utah and South Canals. The site sits adjacent to the remnants of an ancient canal system hand-dug by the Hohokam tribe and later deepened by Mormon settlers for use in their own irrigation system. The proposal celebrates the history of the canal system through integrated community and educational displays, and its renewed connection to the dependence of the earth. The canals in this proposal are unique and heavily vegetated, and the proposed residences, community center, and farmland re-establish the relationship of habitat and agriculture. The jury felt the proposal connects to the existing place and its history very well, evoking a reverent nostalgia. The idea of a modern urban agricultural community centered on historic canals is elegant and honorable.



The competition clearly illustrates the need to re-examine the role of the canals in our daily lives and the complexity surrounding potential redevelopment opportunities that exist at the numerous locations throughout the Valley where the canals intersect our street grid. It is hoped that this competition builds upon the fine efforts of the past to celebrate and reinvigorate one of the more unique and valued amenities of our desert region.

Untapped

by Doug MacEachern

Reprinted from *Arizona Republic*, July 12, 2009

They are not so much ugly, the 181 miles of canals that course through metropolitan Phoenix. They are plain. And utilitarian. Like tools hanging on a garage wall, the canals are here to do a job, not win design awards.

They are concrete-lined ditches, mostly. Long, spare conduits for the millions of acre-feet of water issuing forth from Who Knows Where and flowing quietly to Who Knows Where Else.

The Valley's omnipresent canals are diagonal, cross-cutting interlopers in a community aching to be precisely square and orderly, and few of us have a clue about them. For most of us, they are an intrusion, cutting awkwardly through neighborhoods that otherwise would be sliced into perfect, tidy grids.

Who invited these things? Weird as it may seem when you think about it—Annoyed by the presence of water? Here?—the urban Valley turns its block-walled back to most of its canals.

For the most part, there are no trees or shrubs lining their banks. Just gravel pathways, wide enough for a truck. Which is precisely what the pathways are there for.

Not for joggers. Nor strollers. This, emphatically, is not Amsterdam. Or even San Antonio with its Riverwalk. With odd exceptions here and there, the miles upon miles of irrigation canals in the Valley are stark and uninviting for a reason: We wanted them to be that way.

The irony of this desert community's relationship with its only flowing water is not lost on everyone. There are people who have noticed, for example, that of the 75 largest metropolitan regions in the United States, only six are built without a significant waterway nearby.

They've noticed that only one of those six communities—the hottest one—has designed its communities to pretend what little water it has isn't there. And, after more than half a century of intentionally designing

neighborhoods to be blocked off from their canal waterways, these people are acting to turn the Valley around, so to speak.

They have concocted a marvelous little plan to make us all face—and, once again, take some pleasure from—the single most valuable commodity in the desert, our flowing water.



existing

"In very hard times, there is always an opportunity," observes Alfred Simon, a professor of architecture and planning at the University of New Mexico who wrote his 2002 doctoral dissertation on the development of the Valley's canal network.

That opportunity is almost shocking, it is so obvious and elegant in its simplicity. The opportunity, as it always is in the desert, is in giving people access to water. "We now have to turn our face to the canals. We can no longer treat them as the back door," Simon says. ...

SRP comes around

The history of the Valley's urban canals is a long and fascinating tale beginning in 1868, when the notoriously opportunistic founding father of Phoenix, Jack Swilling, first thought to cut irrigation canals following the same routes as those dug by the mysterious Hohokams almost 1,400 years earlier.

Swilling's canals attracted a fast-growing cohort of enterprising farmers, who eventually organized into something called the Salt River Valley Water Users Association, which eventually persuaded the U.S. government to underwrite the extension of their canal system and the construction of a series of water-retention and hydroelectric dams.

That association in 1937 became known as the Salt River Project, which to this day is charged by the federal Bureau of Reclamation with the responsibility of maintaining the canals. It is a responsibility SRP has taken very, very seriously.



proposed by Julia Schnorr or visionaries.

"SRP has always seen the canals as, first and foremost, a single-purpose system of water infrastructure," Simon wrote in his 2002 dissertation. For SRP, efficiency and utility defined the organization's approach to its duty to deliver water in the Valley. They were scientists and engineers, not artists

Especially during the rapid expansion of the urban Valley after World War II, SRP's dedication to efficient, effective water delivery rapidly began altering a once-cozy relationship of the Valley's communities to their canals. Where a formerly agrarian Valley was once resplendent with tree-lined, earthen canals, the post-war canals were remodeled quickly into ... something else. The thousands of enormous cottonwoods that once proliferated along the earthen canal banks began disappearing. And the canals themselves, which once provided easy access for swimmers and picnickers, were covered over in steep, foreboding concrete.

"SRP viewed the canals as a pipeline," notes former SRP General Manager Jack Pfister, now a key player in the Canalscape project. "Re-imagining how the canals can be used has been a painful process for SRP."

Linking with community

However slowly, SRP has recognized the cognitive dissonance of a desert community turning its back on its water. In 2003, SRP sponsored the reconstruction of the Arizona Falls, a natural 20-foot drop in the Arizona Canal near 56th Street and Indian School Road. In the early 20th century, the Arizona Falls had been a popular gathering place for Phoenix families. Now reconstructed into an appealing, two-tiered, covered overlook, the Arizona Falls harkens to an era when Phoenix residents were attracted to, not repelled by, its flowing waters. It was SRP's first major acknowledgment since World War II that the irrigation canals need to be part of, not apart from, the community.

Here and there, other beautification projects have sprung up along the canals, giving locals a sense of how the canals could be integrated. One of the first of those to be built was the Sunnyslope Canal Demonstration Project, a meandering set of walkways and greenscapes west of Central Avenue south of Dunlap. "In 1989, we were the first troops on the beach," recalled Ed Lebow, public-art program director for Phoenix, who worked with SRP on the beautification.

Canalscape, however, constitutes the most ambitious new take on canal-community integration in the post-war era.

Not really 'beautification'

It is not "beautification," per se. As Ellin notes, it isn't even intended as a set of "canal" projects. The plan is to promote development on private land adjacent to the canal banks. It is an important distinction for one significant reason: liability.

"Liability remains the most difficult issue to deal with" in planning multi-use projects for the canal areas, said James Duncan, a self-described "nuts-and-bolts guy" for SRP.

Indeed, Duncan represents the modern profile of SRP as it applies to visionaries like Ellin, who see restaurants, clubs, offices and residences lining the Valley's canal banks in not too many years.

Yes, SRP wants to be a partner in making canal-side projects happen. But, no, the utility company cannot forget that the canals still exist to deliver water and to provide right-of-way for the company's power-transmission lines. That means a certain tension regarding the conflicting uses will never go away.

In February, an urban-design student from Denver walked with other students along the Grand Canal bank near 44th and Washington streets and recorded his sense that it seemed "grand" only in the technological sense. But he saw the "hidden potential."

"Today's metropolitan Phoenix could see a revitalization and rebirth of these canals as multipurpose threads that tie the vast city together," wrote David Sprunt, now graduated from the University of Colorado-Denver and a participant in the Canalscape project. "Our task is to explore the possibilities."

Learning from ...

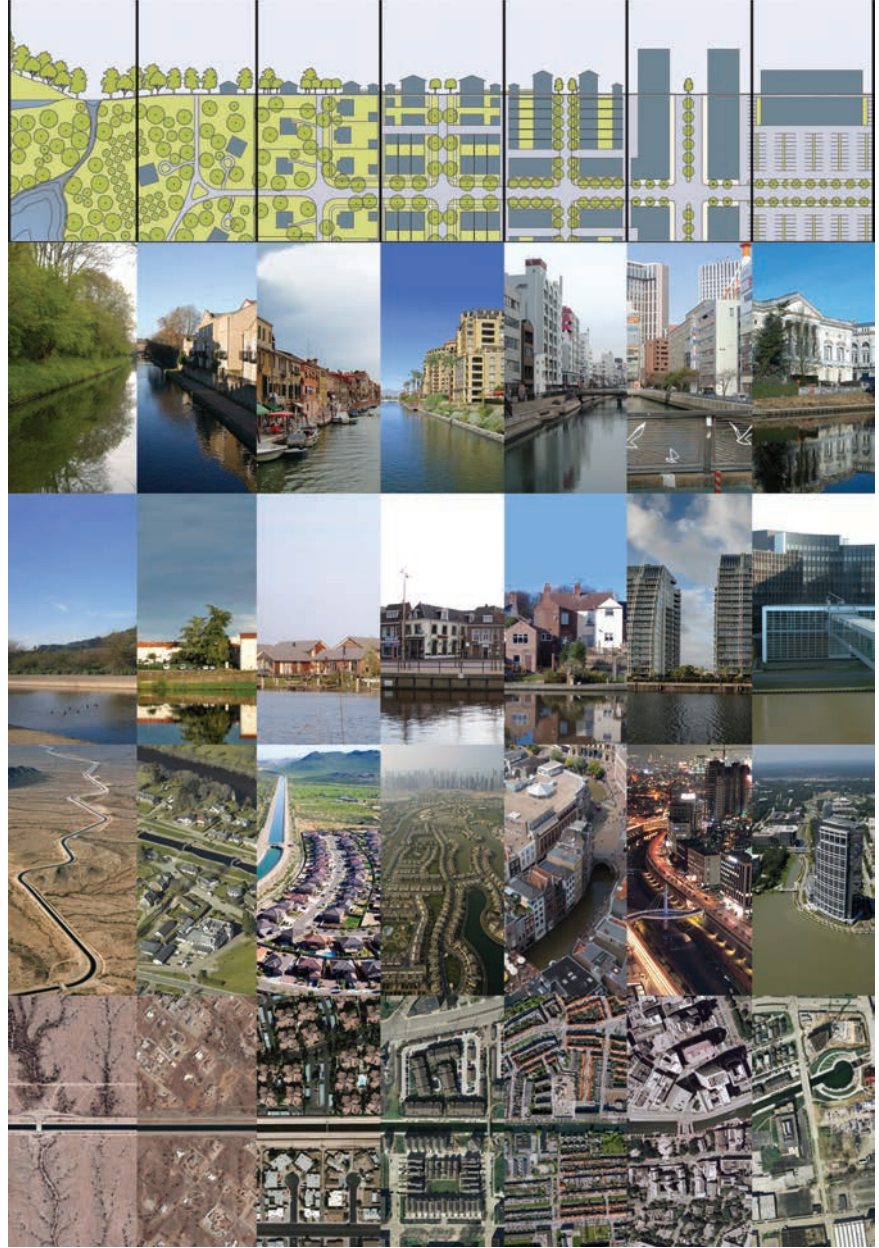
Other Places

by Dan Bartman

The rural-to-urban transect is a planning theory and tool based upon the understanding that certain forms and elements of the built environment are appropriate for certain physical environments. When the transect is translated into "SmartCode," it is divided into six human habitat types, that vary by intensity or level of physical and social characteristics found in each zone. T1, the natural zone, is used to identify land that is natural or unsuitable for development; T2, the rural zone, is sparsely settled land; T3, the suburban zone, comprises low-density development; and T4, T5, and T6 are varying degrees of urban zones.

When applied to development along canals, the transect helps us understand that different locations call for different kinds of development. A project has been launched at ASU to develop a transect-based SmartCode Canal-Oriented Development (COD) proposal for the Phoenix region, along with a Canal Urbanism module that could be applied anywhere in the world.

This visual chart demonstrates the range of canal urbanism around the world from Germany to Belgium, the Netherlands, South Africa, Japan, China, Serbia, the United Arab Emirates, USA, and more.





San Antonio, Texas

The San Antonio River Walk, also known as Paseo del Río, is a network of bridges, walkways, bars, shops, and restaurants along the banks of the San Antonio River that is seamlessly woven into the urban fabric of the city. Functioning as a pedestrian street removed from the flow of automobiles, the San Antonio River Walk has become a wildly successful mixed-use district. The two parallel sidewalks of the River Walk connect major tourist attractions of the city, including the Alamo, Rivercenter Mall, the Arneson River Theatre, Hemisfair Park, and the Tower Life Building. The City of San Antonio has adopted a special River Improvement Overlay District "to protect, preserve and enhance the San Antonio River and its improvements by establishing design standards and guidelines for properties located near the river." The specialized zoning code calls for urban design elements such as balconies facing the water and the development of a microclimate along the river.



Oklahoma City, Oklahoma

The Bricktown canal is a revitalization project created by Oklahoma City to link its current downtown, the Bricktown entertainment district, and nearby Oklahoma River. The project focused on activating the entertainment district through adaptive reuse of its underutilized warehouses and creation of a navigable canal that runs through the entire development, passing numerous bars, clubs, casual and fine-dining restaurants, retail shops, hotels, and even the corporate headquarters of Sonic restaurants. The canal begins near downtown, runs east through a highly urbanized section of the city to the Bricktown ballpark, where it turns south toward the river. The southern, more natural section of the canal offers hiking and bicycle trails, water features, and landscaped park areas including a large waterfall. The entire project was funded by a 1-cent sales tax approved by voters.



Indianapolis, Indiana

Originally part of a multimillion-dollar canal network launched in the mid-19th century that ultimately bankrupted the state, the Central Canal, the only completed portion, was eventually deeded to the City of Indianapolis by the Indianapolis Water Company. The city sought to redevelop this eight-mile stretch of waterway into the Indianapolis Canal Walk by lowering the canal, reinforcing it with concrete, and lining it with buildings. The “upper” portion of what was once the old Central Canal is now the Indianapolis Greenway Trail, a pedestrian path that connects to the canal walk and then passes through residential complexes, Butler University dormitories, the USS Indianapolis Memorial, and White River State Park. The Indianapolis Canal District Master Plan (2006) foresees a “cultural corridor” along the length of the canal by establishing 11 pockets of cultural opportunities focused on bridges that cross the canal. Thus, the canal walk functions as an educational and recreational experience for visitors with installations and cultural institutions along the way, highlighting Indianapolis’ past, present, and future aspirations.



New Town at St. Charles, Missouri

New Town at St. Charles is a master-planned New Urbanist development designed by Duany Plater-Zyberk (DPZ) with a canal inspired by the *gracht* Dutch for canals flanked by one-way streets lined with buildings. Although this provides a semi-privatized canal experience, as it matures under the auspices of the SmartCode, future extension of the canal system could see New Town resembling its more public European counterparts in time. Residents can walk to nearby shops and restaurants for their daily needs and parking is located in rear alleys or behind buildings. Mixed-use buildings and a variety of housing types permit a range of resident ages and incomes, while preserving home values at the same time. Lending institutions have recognized the quality of such developments by creating location-efficient mortgages that provide better terms for homes located in pedestrian-friendly communities.

Providence, Rhode Island

The redevelopment of downtown Providence is the result of efforts beginning in the 1980s to unify a divided city by rerouting three rivers, a highway, and railroad. Providence thereby reinvigorated



its downtown, along with the spirit and pride of its citizens. Although the assortment of walkways, pedestrian bridges, plazas, and pavilions installed along the riverbanks creates a Venice-like ambiance, the success of this project may be attributed largely to the monthly event known as WaterFire. Conceived by artist Barnaby Evans, WaterFire features 100 braziers placed along the centerline of the Providence River ignited at dusk, turning the river into a 2/3-mile-long art installation that attracts thousands. WaterFire is so successful that local authorities have had to instruct pedestrians to roam in a counterclockwise manner to avoid bottlenecks of people trying to access the many free concerts and nearby art galleries, shops, and restaurants. Research conducted by Professor Timothy Tyrrell, of ASU's Tourism Development and Management Program, indicates that for each \$1 spent on WaterFire, \$2 is generated in sales tax revenue. WaterFire is currently funded by the private sector.



Scottsdale, Arizona

The City of Scottsdale has long sought to link Old Town to the nearby Fashion Square Mall, but the Arizona Canal restricted access to nearby streets. Inspired by other canal, river, and waterfront projects from around the world, Scottsdale filled this gap by creating Metro Phoenix's first modern canal-oriented development project. With bookstores, cafes, high-end restaurants, shops, office

condos, two large residential towers, and two pedestrian bridges (one in progress), Scottsdale's downtown revitalization demonstrates the value of mixed-use development alongside canals for cities and communities throughout the Phoenix Metro area. It also offers valuable lessons for streamlining and refining such development.

East Valley Cities, Arizona

In recent years, many multimodal pathways have been completed along the canals that run through the East Valley cities of Tempe, Chandler, Gilbert, and Mesa. SRP has worked closely with these communities to ensure their success and compatibility with operational and maintenance needs.



Learning from...

Others

by Canalscape Workshop

1 AD to 1450: More than 500 miles of canals sustained numerous villages of 100–1,000 people for over a millennium in the Salt River Valley.



Painting: Michael Hampshire



1868-1965: Construction of modern canal system; 1,000 miles of canals and laterals; Roosevelt Dam built 1910-18. In 1964, Bureau of Reclamation/SRP/Maricopa County entered into agreement to create the 300-mile Sun Circle Trail, 68 miles of which align the canals.



Image: Edgar Cardenas

1945-70s: Riparian atmosphere of canals and laterals largely destroyed by measures taken to minimize water loss and control water flow: trees removed; canal beds lined with concrete; canals generally made off limits to public use through walls, fences, and undergrounding; swimming and boating prohibited.

Rio Salado Project

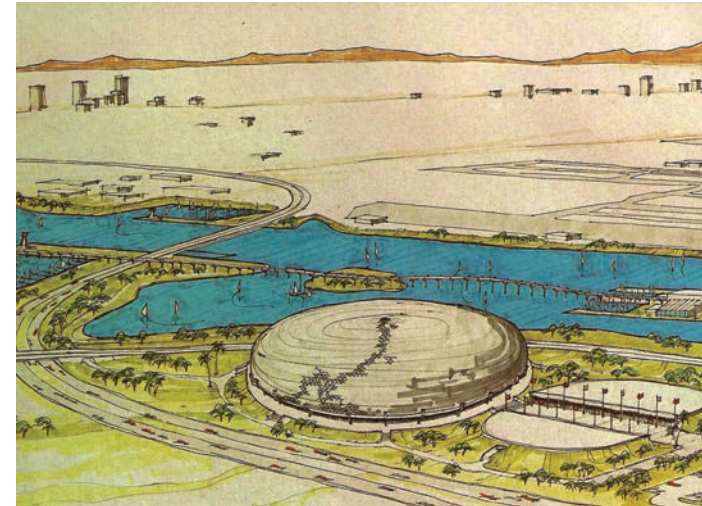
"In 1966, a bold new idea for the transformation of the Salt River was generated by a group of students under the tutelage of James Elmore, Dean of the College of Architecture at ASU. Elmore challenged students to come up with a plan to reclaim the dry Salt River bed. Dubbed 'Rio Salado' ... the students' plan called for turning the riverbed, generally perceived as a blighted area or 'scar' on the landscape, into an asset by creating a mixed-use development centered around an urban greenbelt."

—Trace Baker and Kris Darnell, *Rio Salado Symposium*, 1995

"The Rio Salado Project is a concept for solving flood control problems in the Salt River bed in ways that anticipate and encourage optimum development of some 20,000 acres of prime urban and potentially urban land along the river's 40-mile course from Granite Reef Dam to the Agua Fria River. Rio Salado seeks to combine flood control with environmental design in a manner to secure the greatest social and economic benefits for the region and all its people."

—*Rio Salado Phase 3*, 1987

1967-82: Presentation of concepts to the public by the 16 students, Dean Elmore, and Professor Robert McConnell. In 1969, a day-long conference of 80 public officials and business and civic leaders recognized need for others to be involved. The Valley Forward Association agreed to take responsibility for the project with the cooperation of the Maricopa Association of Governments. In 1970, a steering committee organized by VFA requested proposals and received 26, from which they selected DMJM, then commissioned by MAG. Completed in 1972, the DMJM proposal suggested the work be carried out in three phases. The legislature approved \$100,000 funding for land acquisition and R/UDAT produced a report on future development in Phoenix metro area in 1974. In 1975, House Bill 2283 designated Maricopa County Board of Supervisors as fiscal agent for Rio Salado Project. The Research and Service Foundation of the College of Architecture at ASU completed Rio Salado Phase 3 Study for the U.S. Army Corp of Engineer's Phoenix Urban Study in 1977.



Phoenix Sky Harbor Skyride



Tempe Skyride

In the same year, the state legislature created Rio Salado Development District, encompassing thousands of acres for parks and recreation areas, lakes and streams, parkways, and private development along these 40 miles. The City of Tempe formed its own Rio Salado Commission and allotted \$100,000 to begin work on the project. The governor appointed state-level Rio Salado Commission in 1982.

1985: Rio Salado Development Plan by Stephen Carr and Kevin Lynch. "The discussion led to a new concept ... of a broad flood channel with armored edges, landscaped with desert plants and embellished with falls and lakes fed by groundwater pumped to the surface. ... between Mill Avenue and the airport in Phoenix, the area along Washington Street will be dominated by a mix of industry, offices, and commercial venture. ... Coming from downtown Phoenix, crossing the bridge over the new lake in the riverbed, the magisterial entrance to the island [created from 7th Street to 7th Avenue] is marked by high jet fountains. Shaded promenades and lookout points along the north edge of the island will provide a view of downtown and uptown Phoenix ... Boats will shuttle between stations. ... All along the central pedestrian spine of the island a series of 'water events' are connected by waterways running under lath-roofed arcades. On one end, this pedestrian axis will lead to an open amphitheater for public festivities and concerts. The other tip of the island will be occupied by a discovery museum for children. A special watergarden at the junction with Central Avenue will provide freshness and shade. Like the 'Ile de la Cite' in Paris and the 'Isola Tiberina' in Rome, this island will bridge the gap between north and south Phoenix. It will attract a variety of public institutions, special industries, entertainment, shopping, and recreation. ... There could also be a museum and research study of the worldwide role of water: its physics and chemistry, its connection with living things, and its practical use and key importance throughout the world."

-Lynch, Tridib Banerjee, and Michael Southworth in *City Sense and City Design*

"The proposed Rio Salado project in Phoenix, perhaps the most ambitious of its kind, would create a 15-mile-long water-based linear park in the bed of the Salt River. ... In the desert of Phoenix, so the theory goes, these new parks and lakes could draw enough private development to their edges to pay for themselves through new taxes ..."

-Stephen Carr in *Public Space*



Renderings: Carr, Lynch, Hack, and Sandell

1987: Funding for Rio Salado Project rejected by voters in a special election.

1989: Tempe plan adopted.

1993: Tempe built new northbound bridge.

1995: Rio Salado Symposium, ASU.

"This great swath through the city is so central, both geographically and historically, and yet it remains a wasteland, peripheral to the city's life." –Gary Hack

"Whatever the problems and obstacles of Rio Salado Development Project, just think of the difference. Think ten or 20 years down the road. Think on the one hand of a region in which there is a glistening Rio Salado Development in place, linked to neighbors across the Valley of the Sun. But on the other hand, imagine the opposite, a 2005 or 2015 in which you still have to apologize for yourself and to the world for that dried-out, unsightly, polluted, and gunked-up old scar preserved in all its ugliness because you can't get your civic process together. I think the answer to the choice of where you'd like to be is blindingly clear." –Neil Peirce



Image: Edgar Cardenas

1995: Army Corps of Engineers published report proposing new possibilities for Rio Salado Development.

1995: "The concept and potential of Rio Salado are now quite well understood and generally embraced in the Valley. It is seen not as a project, but rather as the aggregate of many, many projects—public and private—flood control, recreational, residential, commercial, industrial and other—executed by the riverside jurisdictions. ... It has been my good fortune to be involved in Rio Salado through all of its first nearly 30 years. It's had some setbacks—but now there's progress—and promise." –*Rio Salado Update* by James E. Elmore, FAIA, Founding Dean, College of Architecture and Environmental Planning, ASU

Mid-1990s: Beginning of Rio Salado Restoration Project thanks to congressional appropriations secured by U.S. Representative Ed Pastor (who had initially learned about the vision from Dean Elmore when a student at ASU in the 1960s) with management by U.S. Army Corps of Engineers and City of Phoenix; Ten Eyck Landscape Architects; later Rio Oeste Extension. "The nearly 600 acres of the Rio Salado Habitat Restoration Area stretches along five miles of the Salt River, from 19th Avenue to 16th Street, just south of downtown Phoenix. The Rio Salado Habitat Restoration Project is an ongoing effort to restore the native wetland and riparian habitats of the Salt River, replacing what had become a waste disposal area with an ecosystem supporting both flora and fauna." –www.phoenix.gov/RIOSALADO/

1999: Rio Salado Beyond the Banks Advisory Committee. "In this vision, the Rio Salado project will serve as a catalyst for transforming the area adjacent to the project into places where people not only work and live, but also places where people from all over Phoenix will come to enjoy the experiences that have been created." -www.phoenix.gov/planning

2003: Beyond the Banks Area Plan adopted.

2009: Opening of Nina Mason Pulliam Rio Salado Audubon Center. Effort led by Sam Campana, Sarah Porter, and Marcia Halstead; design by Weddle Gilmore Architects.



Scottsdale

1987: "Scottsdale Canal Bank Study: Final Report and Recommendation," Scottsdale Canal Bank Committee, Scottsdale Planning and Economic Development, Arizona Canal Bank Master Plan.



1988: Scottsdale City Centre Renovation, southeast corner of Camelback and Scottsdale Roads, along Arizona Canal, implementing recommendations of Canal Bank Study as a pilot project. Integrated building and canal by landscaped pathways along the bank and pedestrian bridge over canal, linking building to canal. Architect: Donald Ball, owners Bill Gunn and Gary Adcock.

1989: City of Scottsdale entered into first agreement with SRP, allowing improvement project on one-mile stretch of canal.

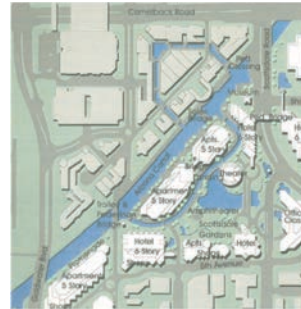
1990-91: Arizona Canal Master Development Plan by Sasaki Associates, with emphasis on public art, for City of Scottsdale.



1990: Renovation of Safari Hotel in Scottsdale to integrate Arizona Canal.

1993: Scottsdale City Council designated Waterfront Redevelopment Area. Initial development along the Arizona Canal included \$4 million in canal channel lining and gate structure improvements along with the undergrounding of overhead utilities from Scottsdale and Camelback Roads to 68th Street.

1997: The Canals at Scottsdale: Proposal submitted to City of Scottsdale by Taliesen West and High Hat LLC. According to one of the Lead Architects, Ryc Loope, it is "a design concept and development philosophy which focus on linking the city's core through its historic canal system. In harmony, the made and the natural will support and nurture the vitality of all life in our beautiful desert environment."



1990s: Schoneberger Architects & Planners, Nick Newberry, and Cornoyer Hedrick, renderings for canal-side development in Scottsdale along Arizona Canal.





Image: James Duncan

2003: Scottsdale City Council approved Scottsdale Waterfront development agreement, much of which has been constructed. Developer: Starwood Capital Group and Golub & Company; builder: Opus/Edmunds.

2004–present: South Bridge along south side of canal, Spring Creek Development.



Scottsdale Public Art Program



Image: Scottsdale Public Art Program



Arizona Canal in Phoenix

1985: "Camelback East Village: A Plan for our Future," Camelback East Village Planning Committee, City of Phoenix: "Canals should be preserved and further developed to allow for jogging, bicycling, and horseback riding. The Park district should enter into agreements with the Salt River Project and the Secretary of the Interior to allow for landscaping the embankment areas of canals and maintaining appropriate surface areas and conditions for jogging, bicycling and horseback riding, with underpasses or overpasses at major arterial crossings or bridges to accommodate such traffic."

1986-92: Construction of ACDC (Arizona Canal Diversion Channel) between 75th Avenue and 39th Street by US Army Corps of Engineers; negative impacts mitigated through community involvement.

Desert Cities Conference

1988-90: Claire Sargent organized International Desert Cities Conference in Phoenix, insisting the city embrace its place in the desert and innovate by meeting with leaders from dry lands around the globe. Mayors from 17 desert cities met in Phoenix to establish four main themes of the upcoming conference: 1) Building the City (desert architecture); 2) Strengthening the Community (community life); 3) Creating Wealth (economics, communications); and 4) Sustaining Life (urban, desert, and global ecology). The conference—scheduled to bring together politicians, design professionals and entrepreneurs in June 1991—was abandoned in the midst of a recession and the first Gulf War.



Prepared for the conference: *Oasis: Dwelling in the Desert* by Elias Amidon and Elizabeth Roberts, 1988:

"Traditionally, an oasis is a place of lush vegetation and water in an arid land. It is also a crossroads, a place of interchange and contact ... Here, human effort and natural systems work together to create a unique sense of place. ... The palm fringed oasis is synonymous with social, physical, and spiritual vitality. It represents welcome and hospitality, the exchange of news ... and the challenge of new ideas. Water is the critical element. Carefully collected from surface run-off, springs and wells, or channeled from distant courses, it sustains vegetation ... And tempers the impact of the desert's climatic extremes ...

But an oasis is more than just a place,
it is a state of mind and a way of life—
a life lived in harmony with the desert
and the processes which sustain and replenish us.

It represents the commitment of a desert community
to create a living environment designed for people,
respectful of desert ecology and prepared for the future.

This 'oasis consciousness,'
evolved within desert settlements over countless centuries,
is relevant for the contemporary choices we face in desert living.

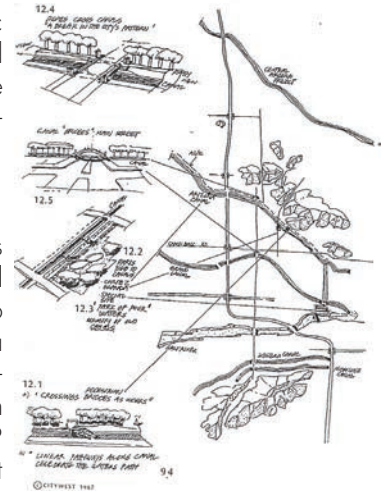
We may integrate our dwellings and cityscapes with the natural
environment and use our energies to care for that environment.
Or we may choose to seal our homes and towns against the
environment and expend our resources trying to keep the desert at bay.
Life in an oasis, or life in a fortress ... "



1987-91: "Public Art Plan for Phoenix: Ideas and Visions," William Morrish, Catherine Brown, and Grover Mouton, 1988 and 1991 (Phoenix Arts Commission). "As everyone in Phoenix knows, water is the basic element to urban survival in the desert valley. There are various aspects of this system that can be developed to celebrate every step in the hydrological cycle from water supply to filtration, treatment and drainage. The canals, water tanks, various plants and washes are physical forms in the city which provide a unique framework of a system for artworks to celebrate the primary role water plays in the city's life."

-Memo from Morrish to Deborah Whitehurst

1991: Canal Banks Demonstration Projects, City of Phoenix: "Canals can be to Phoenix what rivers, harbors and seaports are to other cities—a source of beauty, pleasure, and commerce. Last summer the City Council approved the recommendation of a committee comprised of interdepartmental staff, citizens and SRP staff to pursue development of canal banks as a multiple resource." Five demonstration sites were selected: Arizona Canal from Dunlap to Northern, Western Canal from Central Avenue to 7th Street, Grand Canal from Central to 7th Street, Grand Canal at Pueblo Grande Museum, and Arizona Canal from 56th Street and Indian School to Herberger Park. "The Canal Bank Committee is also negotiating a master agreement with SRP to govern canal bank projects. And the committee is preparing design guidelines for all new development adjacent to the canals. These guidelines will ultimately become part of the City's Design Review Process. In the future, the committee intends to develop a long-term plan identifying appropriate land uses and focal points along the 78 miles of major canals located within Phoenix. Canal bank development promises to be an exciting project which will enrich the entire community." -Chris Hood



1996: Sunnyslope Canal Demo Project along Arizona Canal from Northern to Dunlap Avenues, Phoenix Arts Commission, by M. Paul Friedberg and Steve Martino (landscape architects), Doug Hollis and Jackie Ferrara (artists), and Martin Yoklic (environmental consultant). "The trail and landscape improvements of the Sunnyslope Canal Demonstration Project enhance the comfort and accessibility of the Arizona Canal banks as a recreational amenity for the Sunnyslope community and provide a model for canal improvements in other areas of Phoenix. Key elements of the project include landscaping and irrigation along the north and south banks of a 1.5-mile section of the canal; and open-air "rooms," or small plazas where trail users can rest and enjoy the canal environment." -Phoenix Office of Arts and Culture



Photos courtesy of Phoenix Office of Art and Culture

1989-90s: Metropolitan Canal Alliance: Initiated by Junior League of Phoenix, this organization dedicated to preserving and enhancing the Valley's canal system succeeded in opening the canal to recreational activities and generating interest in using the canals more actively. Hosted a forum with mayors of six cities and 62 city staff members.

1989: SRP approved Canal Multiple Use Guidelines. "While keeping in mind the need for uninterrupted water delivery, SRP recognizes the value of canal multiple-use developments and works with cities and developers to integrate portions of the canals into recreation and commercial development projects. -*Building a Legacy: The Story of SRP*

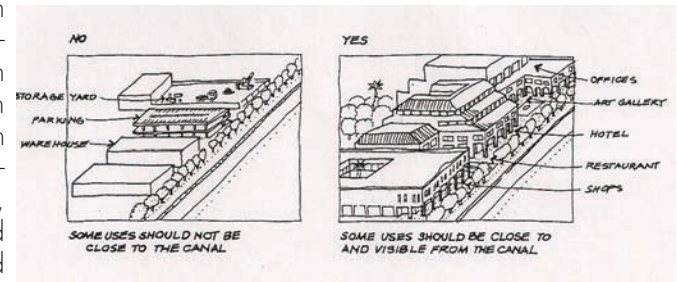
SRP began discussions about creating a canal-oriented project along the Grand Canal at Papago Park Center.

Chandler planned multi-use development along Consolidated Canal and voters approved \$1.6 million in bond money for developing linear parks along Western and Consolidated Canals.

Val Trans (light rail) proposal included a section aligning Indian School Road and the canal banks in Arcadia neighborhood (defeated).

Sharon Southerland, "Planning the Canals: Neighborhoods and the Past," Masters Thesis, Environmental Planning, ASU. "The attitude of ignoring the canals, that has prevailed for the past 25 years, must be reversed. Through projects that educate and emphasize the canal water's importance, meaning can be restored that will help reconnect residents and users with the water."

1990: "Metropolitan Canals: A Regional Design Framework": Seven cities in Metro Phoenix collaborated with ASU faculty Michael Fifield, Madis Pihlak, Sharon Southerland, and Ted Cook to develop a Regional Design Framework with support from the Junior League, NEA, and SRP. "No other metropolitan area in this country can boast of 362 miles of public waterfront property (comprising both sides of 181 linear miles of canals). The canals will become a desirable location for all types of people-oriented uses. Public areas, parks, hotels, restaurants, shops, and housing will border the canals, competing for prime locations and adding value to nearby properties. ... Preferred location for office, retail, and neighborhood shopping [should be] clustered at the intersection of the canal and arterials. ... The goal is to line the canal with activities that are of interest to the canal bank users. ... These canals have the potential to become people-oriented 'special places' that are free from automobiles and common to all Valley cities. ... The canal system is well suited for use as an alternate transportation corridor. ... Someday, the high value of the land adjacent to the canals will inspire building efforts that we can only imagine—becoming distinctive 'special places.' Ultimately, the land adjacent to the canals will be transformed from a setting for isolated one-story detached buildings to multiple-use nodes ... that contribute to an active and vibrant public life. ... All Valley cities should consider



demonstration projects providing positive examples of development oriented toward the canal. ... It is hoped that this important planning process will continue, guided by the design framework proposed by this report." This report was awarded a Citation by *Progressive Architecture* in 1995.

1991: Video: "Canal Banks: A Vision of the Future," by College of Architecture and Environmental Design, ASU, written by Guy Mullins, produced by Laurel Kimball, funded by Arizona Community Foundation. Interviews with Sharon Southerland, Ted Cook, Michael Fifield, Chris Hood, and John Meunier, who said, "The canals have the capacity to imbue the region with significance. They can make special places."

1990s: "Turquoise Necklace," proposal by Frederick Steiner (ASU) to combine existing waterways in the Phoenix region with new ones.

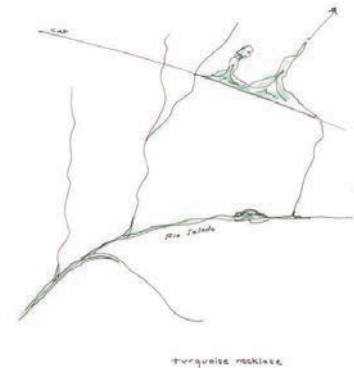
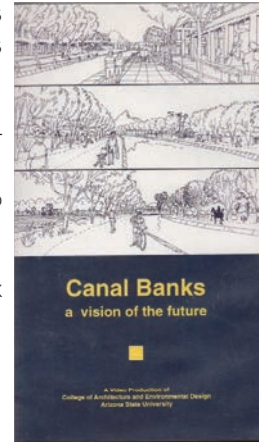
Frederick Steiner, "Old Crosscut Canal," Environmental Impact Statement with six planning students for nine square miles north of McDowell Road, between 52nd and 44th Streets, along 2.12 miles of canal.

1991: Jeffrey Hinkle, "Arizona Canals/Arizona Falls: Design Demonstration Project," Masters Thesis, Advisors: Salisa Norstog and Ignacio San Martin.

1992: Gary Lane, "Roosevelt Irrigation District Canal: Canal Bank Design," Senior Thesis, Planning, ASU. For North Avondale, he proposed "a new form, character, and community identity" through canal improvements: "Introduce a continuous active edge along the side of the canal which has commercial and public land." Recommends this recreational pathway be "suburban in character, similar to most of the development occurring in North Avondale. ... However, within certain areas of the pathway, more intensive development will occur, creating strong urban design images and places of activity and interaction."

Papago Trail conceived by Metropolitan Canal Alliance and adopted by Papago Salado Association in 1995, traversing 11 miles through Phoenix, Scottsdale, and Tempe, linking many historic, natural, and recreational attractions, a pedestrian bicycle, and equestrian loop trail along the Old Crosscut, New Crosscut, Grand and Arizona Canals. Papago Salado Association, incorporated and governed by Board of Directors (Executive Director: Debbie Abele) represents a joint effort by cities of Phoenix, Tempe, and Scottsdale. "It is the Association's goal to ensure that physical improvements within the area are compatible with its desert setting and maintain the environmental and historical integrity of the regional amenities." Sponsored Papago Trail Concept Plan and Cross Cut Canal Public Art Master Plan in 1995.

Arizona Historical Society planned the Papago Green Line, a green belt linking New Crosscut canal with Rio Salado, preserving the natural landscape.



1997-98: "Following the Water: Photos of SRP Canals," Marie Navarre and Sharon Southerland: Photos by Mark Klett and Bill Jenkins, Scottsdale Center for the Arts, part of "Desert Canals: At the Confluence of History, Art and Culture," Nancy Dallett and SRP. Richard Laugharn produced an interactive CD-ROM of the canal layers.

Catalog by Edward Lebow: "For more than a century, modern canals have brought water and a sense of progress to the Salt River Valley. Turning desert into farms, farms into towns, and towns into the suburbs that surround us now, they have advanced the idea that the landscape is as transient as water itself—a thing to be moved and redirected according to the needs of progress. ... Noting the 'Passing of the Giants,' in 1958, *Arizona Days and Ways* writer Hal Moore said that between 1950 and 1957 an estimated 20,000 of the existing 28,000 cottonwood trees were removed from Valley ditches and canals. By 1970, almost all of the others, along with eucalyptus, ash, tamarisk, mesquites and more, were gone."

1997: "Our Future in the Desert: Architectural Explorations," sponsored by Arizona Vision Weavers (President: Akram Rosheidat) in coordination with Scottsdale Center for the Arts. Entry by GBMA Architects, "Desert Canals: Urban Connections: A proposal to create a comprehensive master plan to develop the canal banks of metropolitan Phoenix," based on study by Angela Mazzi, "Urban Connections: Research and Theory for Desert Design":



"Presently, the canal system serves only a functional purpose partly because its importance as a vital social link has been overlooked. This project proposes to reclaim this link to re-establish a sense of community and one's connection to the city." The canal system "can serve as a generating point for mass transit and provide focal points that express the unique character of each neighborhood, while also being a unifying force that incorporates these pieces into a whole. By providing space that is experienced at a pedestrian scale, the canal system has the power to act as a 'Main Street' within the regions it passes through. It also highlights the valuable resource of water in the desert, a reminder that the Valley cannot survive unless it promotes sustainable and environmentally sensitive development ...

While it is unrealistic to expect a return to an agrarian notion of settlement represented by the canal system, it is also unwise to continue to perpetuate the grid system and the unsustainable urban sprawl and dislocation that it has produced. A better development pattern that is also more suited to the Post-Industrial age is a reconciliation of these two systems ...

By enhancing public and private sector awareness of the potential that the canals hold, and providing a framework in which development can occur, it is intended that citizen groups as well as architects and private developers will work to initiate pieces of this scheme."

1994-97: Marwan Al-Sayed, ASU Design Studios: Linear cities along canals and spanning canals with bridges, including recreational and urban elements as well as suspended public transit over canals, so they become “like a power cord you get energy from.”

1998-2001: Catherine Spellman, ASU Design Studios, Waterways: “The canals in their relative obscurity and common relationship to the public domain offer a means to re-establish a sense of identity and community in Phoenix.” The canal system is “the most important element in the makeup of the urban environment, yet it is mostly invisible to the community it supports. Subconsciously we know that water is here, the grass is green, trees grow, pools are filled, but we do not consciously acknowledge, celebrate, or utilize water to enhance the quality of our community life.”
–ACSA Western Regional Conference

2003-07: “Water Reveries,” Arizona Canal at 24th Street, Phoenix Public Art Program, Artist team: Catherine Spellman, Claudio Vekstein, Karl Jensen, Ned Kahn, and Zubin Shroff (awarded, but not built).

Mesa

1995: Mesa Planning Department presented a comprehensive study and guide to canal development to its City Council.

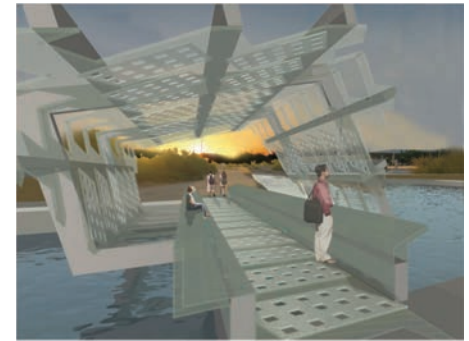
1997: Mesa Bicycle Plan, including proposals for multi-use paths along canal embankments.

1998: Mesa Public Art Plan by Freeman/Whitehurst group, recommending public art opportunities be integrated into capital improvements, including along the canals. In the same year, City of Mesa approved quality-of-life tax increase to fund projects, including design and construction of 6.1 miles of multi-use paths along canal banks.

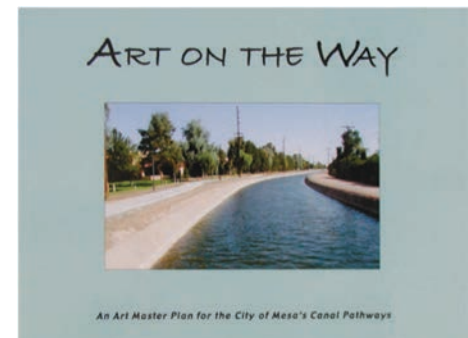
2002: “Art on the Way”: Plan developed by Laurie Lundquist, Mesa’s first Civic Artist in Residence, to identify public art opportunities for the multi-use paths along the canals and promote bicycle and pedestrian travel citywide.



Waterways



Water Reveries



1996-98: Rio Vista Community Charrette, Joint Urban Design Program, College of Architecture and Environmental Design, ASU. ASU's Community Outreach Partnership Center with grant from U.S. Department of Housing and Urban Development.

1997: City of Phoenix Planning Department, Canal Bank Design Guidelines, including "Urban Area Canalscape Treatment," Joy Mee and Chris Hood.

West Valley Recreation Corridor Study, along Agua Fria and New River, conceived by John F. Long: "Excellent opportunities abound throughout the river corridors, from preserving and enhancing natural landscapes to developing active recreation centers."

Superstition-San Tan Corridor, conversion of 26-mile floodway through Mesa, Gilbert and Queen Creek into recreational corridor in East Valley.

"Urban Waterways: Changing Historical Uses and Users in a Southwestern Desert City," Ruth Yabes, Kim Shetter and John Schneeman, *Land-scape and Urban Planning*. "The historical picture offered in this study, along with data about present canal uses and users, can provide planners with a clearer picture of the urban system that surrounds these irrigation canals. Their potential as an amenity for urban communities can be better realized if planners take into account their history and their present uses."

1998: "Using Waterway Projects to Revitalize Urban Cores," NSF proposal, ASU faculty Muscheno, Burns, Doig, Ellin, Gober, Guhatkakurta, Kihl, McCabe, Pijawka, Redman, Weschler, and Yabes.

2001: AIA Arizona State Desert Living Symposium, including session on "Desert Design."

Arizona Vision Weavers competition: "What is Appropriate Architecture? Seeking Ideas for the Valley of the Sun." Goal: "To challenge the architectural and planning communities to develop design and planning solutions that demonstrate appropriate Phoenix architectural identity. Submissions are to deal with both environmental/sustainable issues, and the social implications of continued expansion of the built environment. ... " Jurors: John Meunier, Vern Swaback, Joe Kullman, Frank Henry, and Anthony Floyd. Funding from Arizona Commission of the Arts and Phoenix Arts Commission (Competition aborted due to lack of submissions).

"Programmatic Agreement ... regarding historic preservation treatment for the Salt River Project system of historic main canals, laterals, and associated features operated by the Salt River Project for the Bureau of Reclamation." This agreement—among SRP, Bureau of Reclamation, the Arizona State Historic Preservation Office, and the Advisory Council on Historic Preservation—includes education about the canal system.

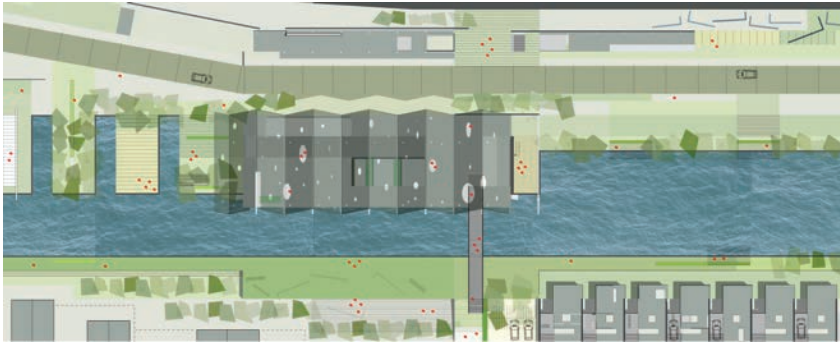


Nancy Dallett introduced signage pilot project along the canals by coordinating with the Office of Historical Preservation, SRP, and the Bureau of Reclamation.

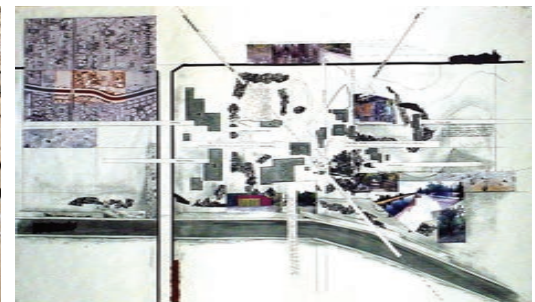
Dan Hoffman, ASU Design Studios: "Cool Connectors" and "Cross-Cut Canal."



Jonah Busick, Masters in Architecture thesis, ASU. "Threads and Edges: Mending the Urban Fabric": Housing and "social condensers" along the Grand Canal at State Route 51 "to re-weave the urban fabric into a continuous yet diverse whole."



2002: Victor Irizarry, Masters in Architecture thesis, ASU. "It is one of my goals with this thesis to push the envelope of ideas to integrate the canal water with the [Cattletrack] artist community."



2001: Papago Trail Design Competition, Call for Entries, sponsored by National Endowment for the Arts and Papago Salado Association. "The Papago Trail Design Competition will reward a multidisciplinary architectural team with the opportunity to design a comprehensive plan of improvements for the Papago Trail ..., a desert canal network. ... The master plan will include elements such as interpretive signs, canal enhancements, bicycle/pedestrian bridges, ramadas, lighting and transit shelters. ... Locations to be distributed among the three cities with emphasis on the canal banks and the cultural attractions." Lead: Debbie Abele; competition advisors: Freeman/Whitehurst; jurors: Cheryl Barton, FASLA, San Francisco; Eddie Jones, Phoenix; Reed Kroloff, NYC; Tom Leader, Berkeley, CA; Frederick Steiner, ASLA, Austin, TX; Deborah Whitehurst, Phoenix. -www.papagosalado.org

Awarded 2002: Portals + Loops: team leaders: Christopher Alt and Dan Hoffman; assistants: Christiana Moss, Jonah Busick, and Ryu Igekai; landscape architect: Michael Boucher; graphic artists: BJ Krivanek, Joel Breaux, and Andrew Weed; environmental artist: Laurie Lundquist; historian/interpretive planner: Nancy Dallett; systems specialist: Harvey Bryan; consulting engineers: Entellus, Inc.



Papago Loop Trail and Pedestrian Bridge – artist team: Studio Ma and Laurie Lundquist, Phoenix Public Art Program. Also, shade structures and benches along canals.



2002: Alfred Simon, "Mixing Water and Culture: Making the Canal Landscape in Phoenix," Doctoral Thesis, ASU. Described four eras: early years 1869-1903; stabilizing years 1903-1945, when lateral numbers were used as addresses; hardening of the arteries 1945-1980 (removed vegetation, lined, and undergrounded); 1980-2001 beginning to re-emerge in public imagination with design guidelines, public art, Metropolitan Canals report, and Desert Canals project.

"Creating a 'There' There: Two Takes on Placemaking along the Arizona Canal in Phoenix" by Rebecca Fish Ewan, on Sunnyslope Canal Demonstration Project and the Arizona Falls Project (ASLA Online).

2002: Scott Carson, Masters in Architecture thesis, "Thinking Outside of the Big Box," proposal for farmland straddling a canal at Chandler Boulevard and Cooper Road where big box store was planned.

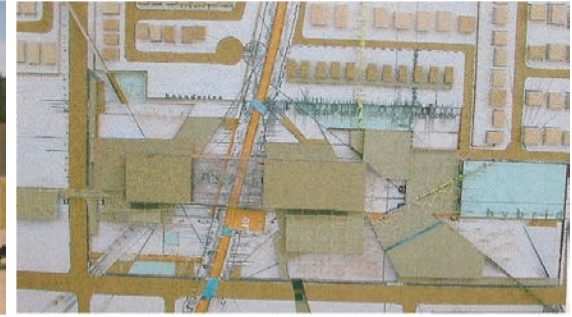


Image: Edgar Cardenas



Photo courtesy of Phoenix Office of Arts and Culture

2003: WaterWorks at Arizona Canal: Re-opening of Arizona Falls, Phoenix Arts Commission and SRP, Artist team: Mags Harries, Lajos Héder, and Steve Martino. "In the late 1800s, Phoenicians enjoyed the wonders of Arizona Falls, gathering there to picnic, socialize and dance near the cool water. Utilizing the flowing water of the canal to produce power, Arizona Falls was also the site of the first hydro-electric plant in Phoenix. Originally built in 1902, the plant was rebuilt by SRP in

1911, began delivering power again in 1913 and was eventually shut down in 1950. As the years passed and more people moved to the Valley, Arizona Falls was almost forgotten as the place to gather—until today." —SRP website

2005-present: Decision Center for a Desert City, Charles Redman, Patricia Gober, et al., NSF-funded center at ASU to study the decision processes used to plan and manage water resources and desert city growth, including WaterSim, an interactive simulation of water supply and demand for the Phoenix Metropolitan area.

2004-07: The Valley's Pedestrian Freeway developed by Maricopa.gov/parks and Valley Forward, including canals and rivers.

2009: Highline Canal at 24th Street/Puerto Park, Phoenix Public Art Program, artist team: Mags Harries, Lajos Héder, and Christy Ten Eyck. This trail stretches along 4.5 miles of the Highline Canal. It will feature bridges crossing the canal, sculptural seating areas, and shade plantings. The project's visual vocabulary of buckets and planks references the construction of the canal and water use.

2009: Canalscape Symposium, ASU Downtown Phoenix Campus.



2009: 40 students from ASU and University of Colorado-Denver develop Canalscape concept.



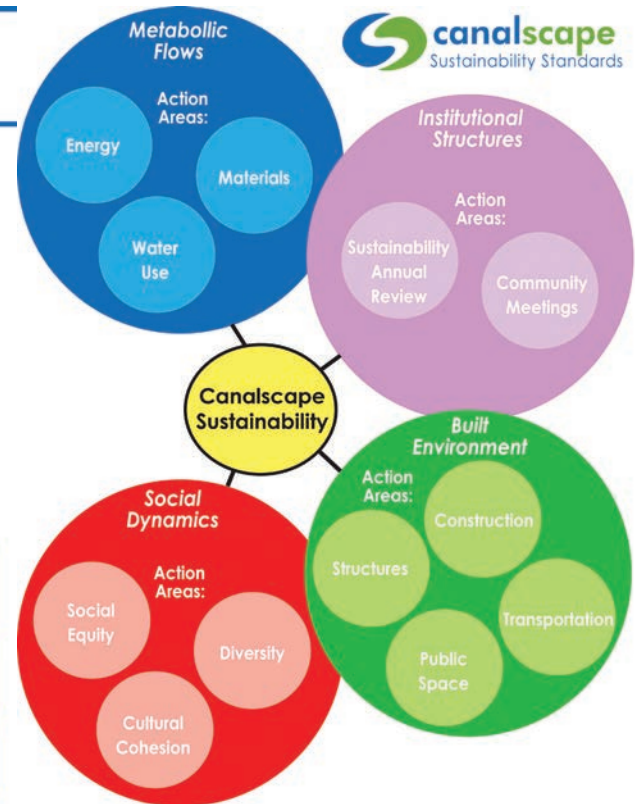
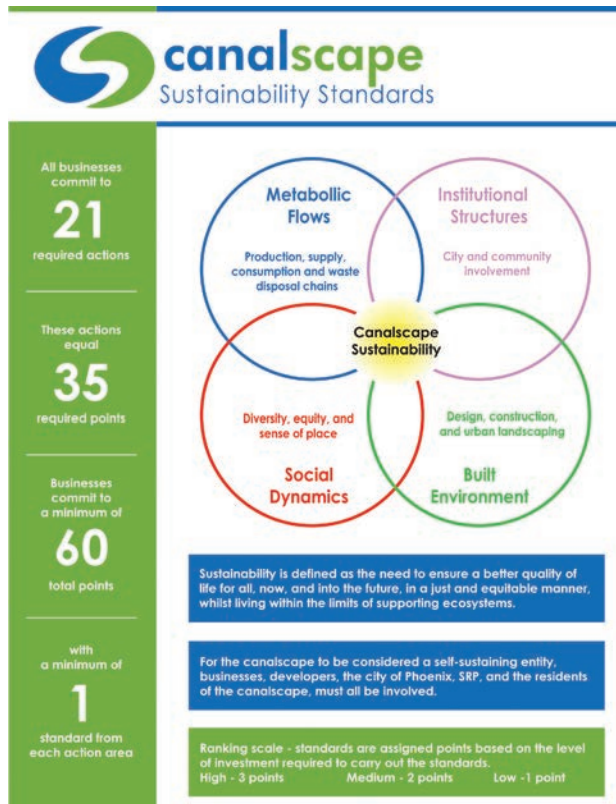
2009: Canalscape selected as Green Phoenix Project (City of Phoenix) and Arizona Centennial Legacy Project (Governor's Centennial Commission).



And the canals continue to connect communities ...

Getting There from Here

These standards are to be considered as guides toward a sustainable canal urbanism. The standards fall into four spheres: metabolic flows, institutional structures, social dynamics, and the built environment. Private developers, municipalities, and SRP serve an instrumental role as well in making the canalscapes truly sustainable. In order to put an adequate, proportional responsibility on all parties involved, a ranking system has been devised to aggregate the collective efforts of the four parties.



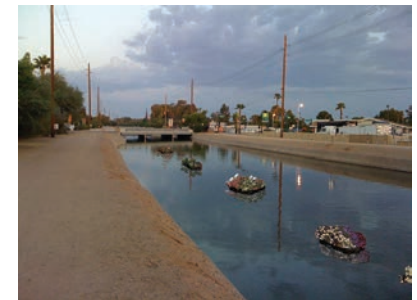
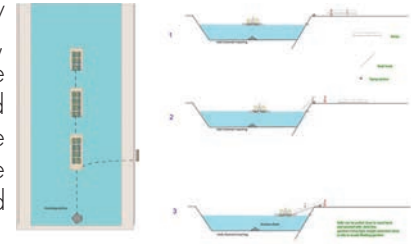
by Andrea Baty and Riley Smith

Floating Gardens

by Braden Kay

Images by Audrey Maxwell, (M.Arch., ASU, 2009) and Laurie Lundquist (Artist)

Floating Gardens along the canals of the Phoenix metropolitan region could promote alternative energy and urban agriculture, while contributing to reimagine the canals as vital public places. These gardens, secured to the canal banks, would reduce evaporation, provide food for local restaurants, and educate the public about alternative energy production and usage. As a form of public art, the gardens would contribute to enhance the region and offer venues for outdoor public performances, particularly in the evenings. A strategic component of the greater Canalscape initiative, Floating Gardens build upon the legacy of human ingenuity that created the ancient and modern canal systems by demonstrating new and innovative approaches toward a sustainable 21st century desert urbanism.



Engaging Youth

by Braden Kay with Audrey Maxwell

Over the course of the Spring 2009 semester, we met twice weekly with 16 5th–8th grade students at the Academy of Excellence, a charter school at 36th and Van Buren Streets, adjacent to the Grand Canal. We introduced them to the canalscape concept and they explored possibilities along the canal just south of their school, from Washington Avenue and 44th Street to Van Buren and 40th Street.

Each student designed at least one building, and their collective canalscape is a place where people work, live, play, consume, and connect. It includes apartment buildings, hotels, shops, restaurants, a media center, a homeless shelter, and an urban farm. Students placed a premium on comfort and sustainability, introducing shade structures, appropriate landscaping, solar panels, recycled water features, and public transportation. At the end of the semester, they presented their work to representatives from ASU, the Arizona Department of Education, and the Phoenix Office of Arts and Culture.



This project engaged youth in the community envisioning process and exploring sustainable urban practices. Through art and design, it brought important young voices to the discussion of what Phoenix could become in the future.





Demonstrating Canalscape in Arcadia

For the better part of the 20th century, American cities turned their backsides to their waterways, relegating them to industrial uses or worse. In the late 1960s, citizens began to see the possibilities of re-invigorating their local environs if they would look to those waterways as a place to reconnect with their past and with nature.

The Canalscape project initiated by scholars and students at ASU, in concert with Mayor Gordon's Green Phoenix initiatives, presents an absolutely imaginative way for Phoenix neighborhoods to do the same thing, in ways that are uniquely authentic to each blessed with a canal running through it.

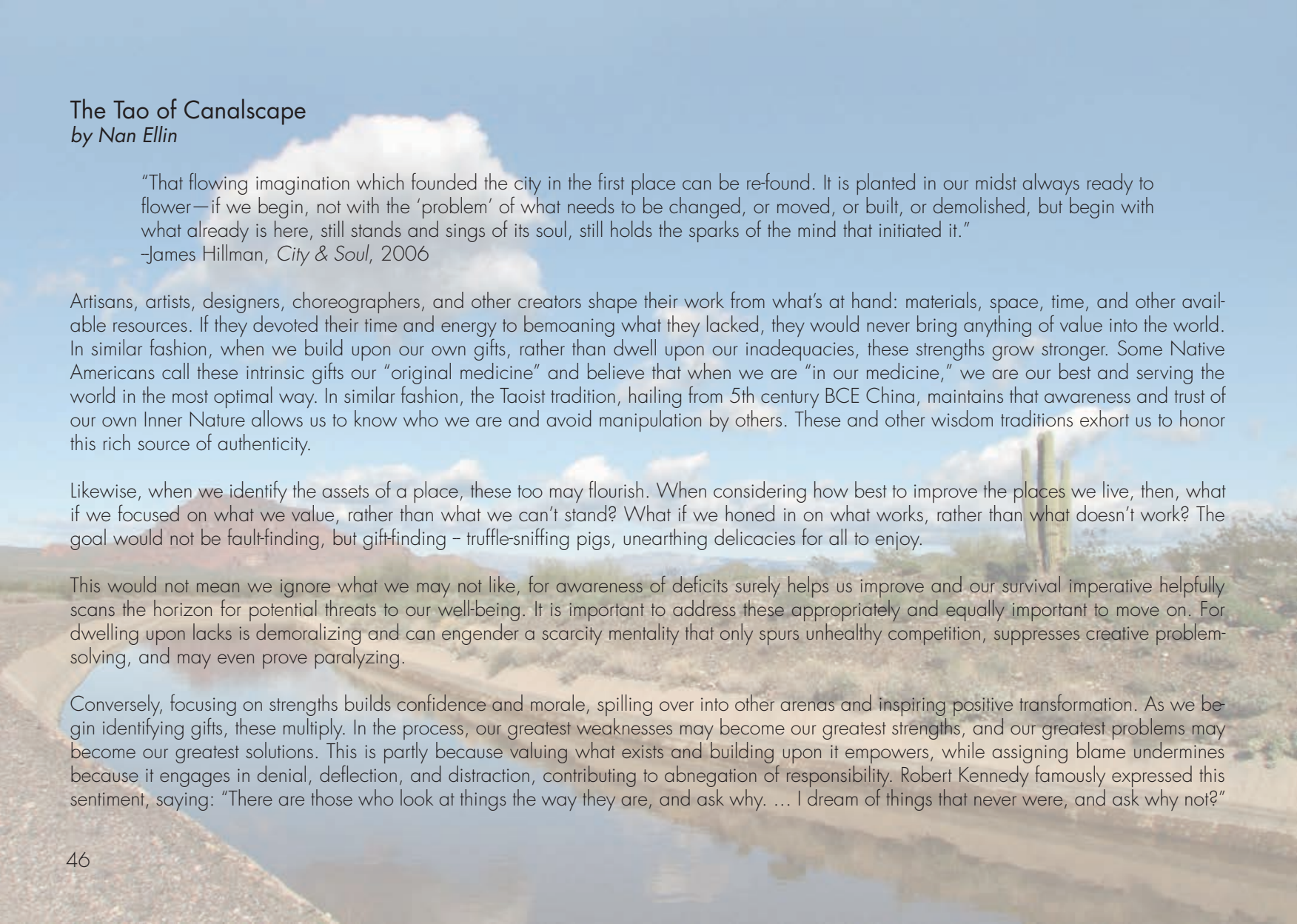
Canalscapes can be green punctuations, in tandem with profitable service centers, where our neighborhood grids intersect our canals, creating places of individual enjoyment and civic pride. Let's do this!

Ron Passarelli, Chair
Camelback East Village Planning Committee
Demo Project

It was our pioneer settlers reusing the vast Hohokam system of canals that created a new city on the desert, which in turn gave us our name, taken from the legend of the Phoenix bird rising from its own ashes. No place on earth has a greater claim to be a canal city, yet they so far have been an afterthought in how we utilize our assets and present our city to the world.

I relish the prospect of developing pilot projects along the canals that incorporate them into soothing retreats and very cool stretches of artsy commerce and gathering spots, something that will be uniquely Phoenix. The area near 40th Street and Camelback seems like it would make a good test project. My guess is that after we see one such oasis spring up, we will slap our collective foreheads and wonder why this didn't occur to us decades ago.

Sal DiCiccio
Councilmember, Phoenix District 6



The Tao of Canalscape

by Nan Ellin

"That flowing imagination which founded the city in the first place can be re-found. It is planted in our midst always ready to flower—if we begin, not with the 'problem' of what needs to be changed, or moved, or built, or demolished, but begin with what already is here, still stands and sings of its soul, still holds the sparks of the mind that initiated it."

—James Hillman, *City & Soul*, 2006

Artisans, artists, designers, choreographers, and other creators shape their work from what's at hand: materials, space, time, and other available resources. If they devoted their time and energy to bemoaning what they lacked, they would never bring anything of value into the world. In similar fashion, when we build upon our own gifts, rather than dwell upon our inadequacies, these strengths grow stronger. Some Native Americans call these intrinsic gifts our "original medicine" and believe that when we are "in our medicine," we are our best and serving the world in the most optimal way. In similar fashion, the Taoist tradition, hailing from 5th century BCE China, maintains that awareness and trust of our own Inner Nature allows us to know who we are and avoid manipulation by others. These and other wisdom traditions exhort us to honor this rich source of authenticity.

Likewise, when we identify the assets of a place, these too may flourish. When considering how best to improve the places we live, then, what if we focused on what we value, rather than what we can't stand? What if we honed in on what works, rather than what doesn't work? The goal would not be fault-finding, but gift-finding – truffle-sniffing pigs, unearthing delicacies for all to enjoy.

This would not mean we ignore what we may not like, for awareness of deficits surely helps us improve and our survival imperative helpfully scans the horizon for potential threats to our well-being. It is important to address these appropriately and equally important to move on. For dwelling upon lacks is demoralizing and can engender a scarcity mentality that only spurs unhealthy competition, suppresses creative problem-solving, and may even prove paralyzing.

Conversely, focusing on strengths builds confidence and morale, spilling over into other arenas and inspiring positive transformation. As we begin identifying gifts, these multiply. In the process, our greatest weaknesses may become our greatest strengths, and our greatest problems may become our greatest solutions. This is partly because valuing what exists and building upon it empowers, while assigning blame undermines because it engages in denial, deflection, and distraction, contributing to abnegation of responsibility. Robert Kennedy famously expressed this sentiment, saying: "There are those who look at things the way they are, and ask why. ... I dream of things that never were, and ask why not?"

We use the words “love” and “hate” a lot when we talk about places, probably even more so than for people. Indeed, we get very emotional about our places. What makes a place lovable? Usually, we feel connected when we’re there: to ourselves, others, the place, nature, the past, and perhaps the future. We feel a sense of meaning, harmony, purpose, interest, and excitement. Of safety and security. Of civility, respect, and generosity of spirit. We often describe these places as “authentic.”

We seek authenticity in a place just as we’d rather slip between all cotton rather than polyester-blend sheets at night. And, as current sheet trends suggest, the higher the thread count the better. Just as higher thread count improves the comfort and quality of our sheets, higher urban thread count—that fine-grain as opposed to coarse-grain fabric—improves the comfort and quality of our cities.

Efforts to achieve authenticity backfire, however, when something that may work in another place or time is “dragged and dropped” onto the here and now. The goal of authenticity may also prove elusive when branders are commissioned to endow a place with identity by inventing catchy slogans. Ironically, these attempts to achieve distinction usually generate similar results, producing only greater homogeneity. For an identity crisis is not resolved by adopting another persona or having someone tell you who you are or should be; it is resolved from within by finding and honoring the Tao-ian Inner Nature of a place and its communities.

After many decades of spiraling down, we have been making great strides in recent years toward creating authenti-Cities. A quiet revolution has been taking place over the last two decades toward what I have described as “integral urbanism.”ⁱ Integral urbanism creates adjacencies of uses and people, allowing relationships among them develop and flourish. Rather than distill, separate, and control—the ethos of modern urbanism—this approach works toward integration, inclusion, and dynamism. Bringing together functions the 20th century city separated (living, working, circulating, creating, and recreating), integral urbanism offers a new model that integrates buildings with nature, center with periphery, local character with global forces, the various professions involved with urban growth and development, and people of different ethnicities, incomes, ages, and abilities.

Instead of beginning with problems, integral urbanism begins by identifying the strengths of a place as well as exemplary practices from which we can learn. As a result, the new builds upon existing assets and is deeply influenced by this DNA of a place, allowing for unique and meaningful expressions to unfold. Rather than neglect, abandon, or erase our urban heritage, integral urbanism preserves buildings, neighborhoods, cultural institutions, creative and intellectual capital, and natural landscapes that we value; rehabilitates, reclaims, restores, or renovates what is underperforming; and adds what we do not have yet but would like, all informed by effective community involvement. And it does so in that order.

Integral urbanism determines where there is energy in the larger system, both physical and social, and where it is lacking. It can thus perform “urban acupuncture,” skillfully inserting interventions into the urban fabric that clear blockages and liberate energy to catalyze additional positive growth and changeⁱⁱ. By setting into motion a self-adjusting feedback mechanism that measures and monitors success, this process activates underutilized resources and attracts new ones. In doing so, it brings urban and economic revitalization, health, and well-being to places and people.

"It's clear that we need to build a new foundation—a stronger foundation—for our economy and our prosperity, rethinking how we grow our economy, how we use energy, how we educate our children, how we care for our sick, how we treat our environment. ... it's moments like these that force us to try harder, to dig deeper, and to discover gifts we never knew we had ... "

—President Barack Obama, *Commencement Speech, ASU, 2009*

"A new context acknowledges that we have all the capacity, expertise, and resources that an alternative future requires ... We change the world one room at a time. This room, today, becomes an example of the future we want to create."

—Peter Block, *Community, 2008*

How can we make the Phoenix region more livable and lovable? Canalscape offers one opportunity. Practicing integral urbanism, canalscape recognizes the canals are integral to the region—part of its DNA—and builds upon this asset by introducing mixed-use urban infill at "acupuncture points" along our urban energy meridians. Canalscape proposes taking two of our biggest problems—sprawl and delivery of water—and turning them into our biggest solutions by creating a vibrant and distinctive network of cores and corridors that uniquely weaves urbanity into nature.

Standing on the shoulders of all who have worked to improve the Phoenix region, and the canal system in particular, canalscape is a co-creationⁱⁱⁱ currently involving a transdisciplinary team at ASU of students and faculty, the professional design community, SRP, municipalities, arts and culture groups, neighborhood associations, and private developers. These efforts have been sowing seeds of change from which numerous offshoots are sprouting. With sustained effort, they may reap abundant harvests for years to come.

You are invited to contribute your own "original medicine" to the creation of canalscape for Metro Phoenix.

Co-Creating Canalscape

- If you have a canalscape idea and would like assistance with converting it into reality, you may contact the Urbanism Workshop at www.geoplan.asu.edu/outreach.
- If you have other suggestions for realizing the vision of canalscape for Metro Phoenix; would like to get involved in ongoing activities; or wish to share your memories, old photos, movies, postcards, or news articles related to the canals, please contact us by sending an email to PhoenixCanalscape@gmail.com.

i. Nan Ellin, *Integral Urbanism*, Routledge, 2006.
ii. Others have also been advocating "urban acupuncture" including Jaime Lerner, Kenneth Frampton, and Ignasi de Sala-Morales.
iii. I borrow this term from Otto Scharmer, *Theory U*, 2007.

Project Team

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Francisco Cardona (Bachelor of Science in Design Studies)
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EDAW-AECOM: Jay Hicks, Chad Atterbury, Jeremy Palmer, Jana Literski

Publication Designer: Nicky HedayatZadeh www.iheartmint.com

Canalscape Dance Performance

Choreographed by Mary Fitzgerald
Performed by Dulce Dance Company
Music by Julian Peterson & Integers Are for Counting

AIA Phoenix Metro Canal Design Competition Jury Members:

James Duncan (SRP), Nan Ellin (ASU), Carol Johnson (City of Phoenix), Jeremy Jones (AIA), Mark Kranz (AIA), Leah Manbeck (ASLA), Ron Passarelli (Chair, Camelback East Village Planning Committee), Gary Roe (Developer), and Deborah Whitehurst (Arizona Community Foundation); Patrick Panetta (AIA, Convener)

The Canalscape Exhibition was made possible thanks to a grant from the Arizona Humanities Council and generous support from SRP, EDAW-AECOM, Pyramid Developers, O Premium Waters, Mountain States Nursery, School of Geographical Sciences and Urban Planning, College of Liberal Arts and Sciences at ASU, ASU Art Museum, and the Herberger Institute for Design and the Arts.

Canalscape Advisory Board

ASU: Alan Aribise (Executive Dean, College of Liberal Arts and Sciences), George Basile (Decision Theatre), Jim Buizer (Office of the President), Jon Fink (Global Institute of Sustainability), Tim Lant (Decision Theatre), Emily Talen (Professor of Planning), and Yuri Artibise (Downtown Phoenix Journal). Student Representatives: Samuel Feldman (Marvin Andrews Fellow, School of Public Affairs) and Braden Kay (Ph.D. in Sustainability). *Community:* Phil Allsop (RIBA-USA), Grady Gammage (Senior Fellow, Morrison Institute), Terry Goddard (Arizona Attorney General), Bruce Hallin (SRP), Richard Hayslip (SRP), Eric Iwerson (Senior Planner, City of Tempe), Jane Jozoff (Chair, Phoenix Arts Commission), Jens Kolb (Architekton), Mark Kranz (SmithGroup), Laurie Lundquist (Artist), Sophia Meger (Architekton), Herb Paine (Paine Consulting), Peter Welsh (Arizona Historical Society Museum), Cyd West (Metro Phoenix Partnership for Arts and Culture), and Deborah Whitehurst (Arizona Community Foundation)

Canalscape Workshop

ASU: Dick Baldwin, Dan Bartman, Andrea Baty, Stephen Buckman, Francisco Cardona, David Crumme, Samuel Feldman, Paul Iversen, Charles Jannetto, Jill Johnson, Braden Kay, Christopher Kuzdas, Bernardo Marquez, Brynn Martin, Antonio Molina, Keith Mulvin, David Proffitt, Allison Seigel, Riley Smith, Peter St. Andrews, Robin Stamp, and Constance Taylor.

University of Colorado-Denver

Faculty: Lori Catalano, Jeremy Nemeth, and Jason Rebillot

Students: Basim Al Atni, Hamdan Alzahrani, Kathleen Benedict, Jeffrey Brown, Nicholas DiFrank, Tyler Greenfield, Jennifer Hendrick, Erik Knudtson, Carrie Kronberg, Michele Larimer, Bill Mahar, Carter Marshall, Heath Reed, Julia Schnorr, and David Sprunt

Workshop Consultants: Todd Bostwick (City Archeologist, Pueblo Grande Museum: Park of Four Waters Tour), Phil Boas (Arizona Republic, Editorial Page Editor: Website), Jeremiah Foster (Real Estate Broker, Scottsdale Projects), Noel Hebets (Native Sun Enterprises, LLC; Faculty Affiliate, Planning: Sustainability Consultant), Carol Johnson (City of Phoenix: Zoning), James Labar (SRP Archivist, ASU History Ph.D. Candidate: SRP History), Sang-Eun Lee (Ph.D. Program in Public Administration, ASU: Learning from Seoul), Jim McPherson (Downtown Voices Coalition: Website), Heather Okvat (Ph.D. Candidate in Psychology, ASU: Urban Agriculture), Bret Sassenburg (VP, Starwood Capital Group: Scottsdale Waterfront), and Tim Tyrrell (Professor, School of Community Resources and Development: Waterfire Economic Impacts)

Canalscape Symposium 2009

ASU Sponsors: Global Institute of Sustainability, Urban and Metropolitan Studies Program, Creative City Certificate, School of Public Affairs, and College of Public Programs

Supporters: Arizona Historical Society Museum, Arizona Humanities Council, Center for the Future of Arizona, Frank Lloyd Wright School of Architecture, La Piccola Cucina, Maricopa Partnership for Arts and Culture, Morrison Institute for Public Policy, Phoenix Community Alliance, Phoenix Urban Research Laboratory, School of Sustainability, Sonoran Institute, SRP, University of Colorado College of Architecture and Planning, and Urban Land Institute (Arizona District Chapter)

Speakers: Nan Ellin, Grady Gammage, Jack Pfister, Jay Hicks, James Duncan, Nancy Dallett, Edward Lebow, Alfred Simon, Erin Pereault, Margaret Bruning, Mark Klett, Lori Catalano, Noel Hebets, Catherine Spellman, and Dan Hoffman

The Canalscape Project Team also thanks

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"The canals have cultivated us.
Now we want to cultivate them for our future."

Nancy Dallett, Public Historian, ASU



www.canalscape.asu.edu

