REPORT TO MAY 28, 2014 STAKEHOLDER MEETING

SUB-PROJECT: 'GRAPHIC' EXPLORATION OF SHARED INTERESTS FOR MULTIPLE-BENEFIT LANDSCAPES AND PROJECTS IN THE GABILAN/REC-DITCH WATERSHED

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Background

One outcome of the January 2013 meeting was a collection of visual depictions and descriptions of ideal, desired, and/or expected future characteristics of the Gabilan Watershed. The subcommittee was struck with how closely aligned many of them were, and how they could possibly act as a tool to help stakeholders of all backgrounds identify areas of agreement that could inform development of integrated projects that meet multiple objectives for watershed (social, economic and environmental) health. This sub-project was to review the range of original drawings and descriptions and condense them into a smaller set of conceptual drawings representing the range and intersections of ideas for additional review and discussion with ten members of different stakeholder groups in the watershed: farmers, water managers, municipalities, urban/rural residents, community groups and academia. Preparation for and follow-up from these discussions (mostly one-on-one) was vetted through a subcommittee of five people from RCD, MCWRA, CCWG, CRLA and TNC. The anticipated deliverable was a large drawing, depicting a conceptualized birds-eye view of the Gabilan/Rec Ditch watershed with 'pop-out' images of conceptual multiple-benefit watershed improvement project outcomes in the different landscapes (urban, agricultural, etc) of the region, accompanied by descriptive language and recommendations for moving forward for achievable, integrated water resource (or 'watershed'?) projects. An ideal outcome would have been a depiction of a common vision for the watershed, but developing such a vision would need a much more intensive, comprehensive and extensive stakeholder process. As evidenced from the original set of stakeholder drawings, while there are many areas of congruence, there remains considerable diversity of opinion on key landscape elements (e.g. Rec Ditch improvements). Regardless, the product as proposed is a step towards informing or structuring a more rigorous effort to forward good work in the region.

Additional deliverables include recommendations for more refined graphics and a strategy for using them for outreach and education in the watershed.

Context

In preparation for and in response to meeting with various stakeholders, I used the following reference documents to better understand the local history of Gabilan and Rec Ditch watershed meetings, assessments and projects. In the interest of time, I focused review on documents developed since the floods in the late 1990's, although those documents for the most part filled in the details regarding prior work and studies. The more current documents included:

- *A Vision Plan for Carr Lake Regional Park* (CSU Pomona, 2003)
- *Reclamation Ditch Watershed Assessment & Management Strategy* (MCWRA & CSUMB, 2006)
- *The Carr Lake Project: Potential Biophysical Benefits of Conversion to a Multiple-Use Park* (CSUMB, 2012)

In the context of the individual meetings, other documents discussed included the *Zone 9 Reclamation Ditch Drainage Systems Operations* and *Carr Lake Multi-Purpose Flood Control* studies by Schaff & Wheeler in 1999 and 2002, which I did not get a hold of prior to presenting this summary.

These reports reflect the primary concerns in the watershed: flood control, water quality, habitat restoration, and public access to parks and natural areas, all in the context of a growing urban area nested in one of the world's most productive agricultural regions, set near the heart of the Monterey Bay National Marine Sanctuary.

The Process

I distilled the following drawings from the themes expressed in the January 2013 drawings: urban parks and greenspace access, urban runoff management, agricultural water quality management, Rec Ditch management, and access from Salinas to the ocean.

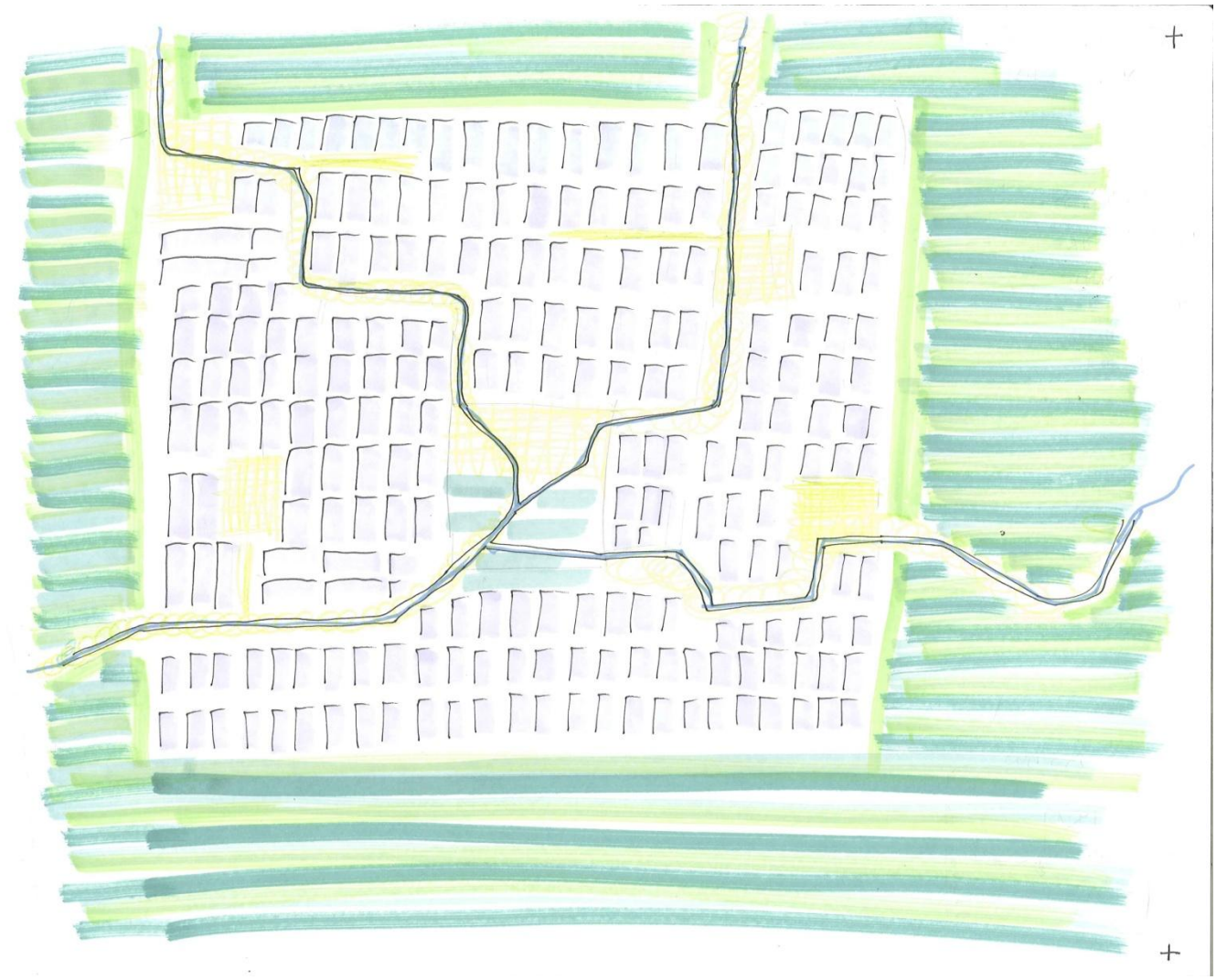


Figure 1: Conceptual graphic showing network of greenways linking neighborhoods and parks with a large, central park

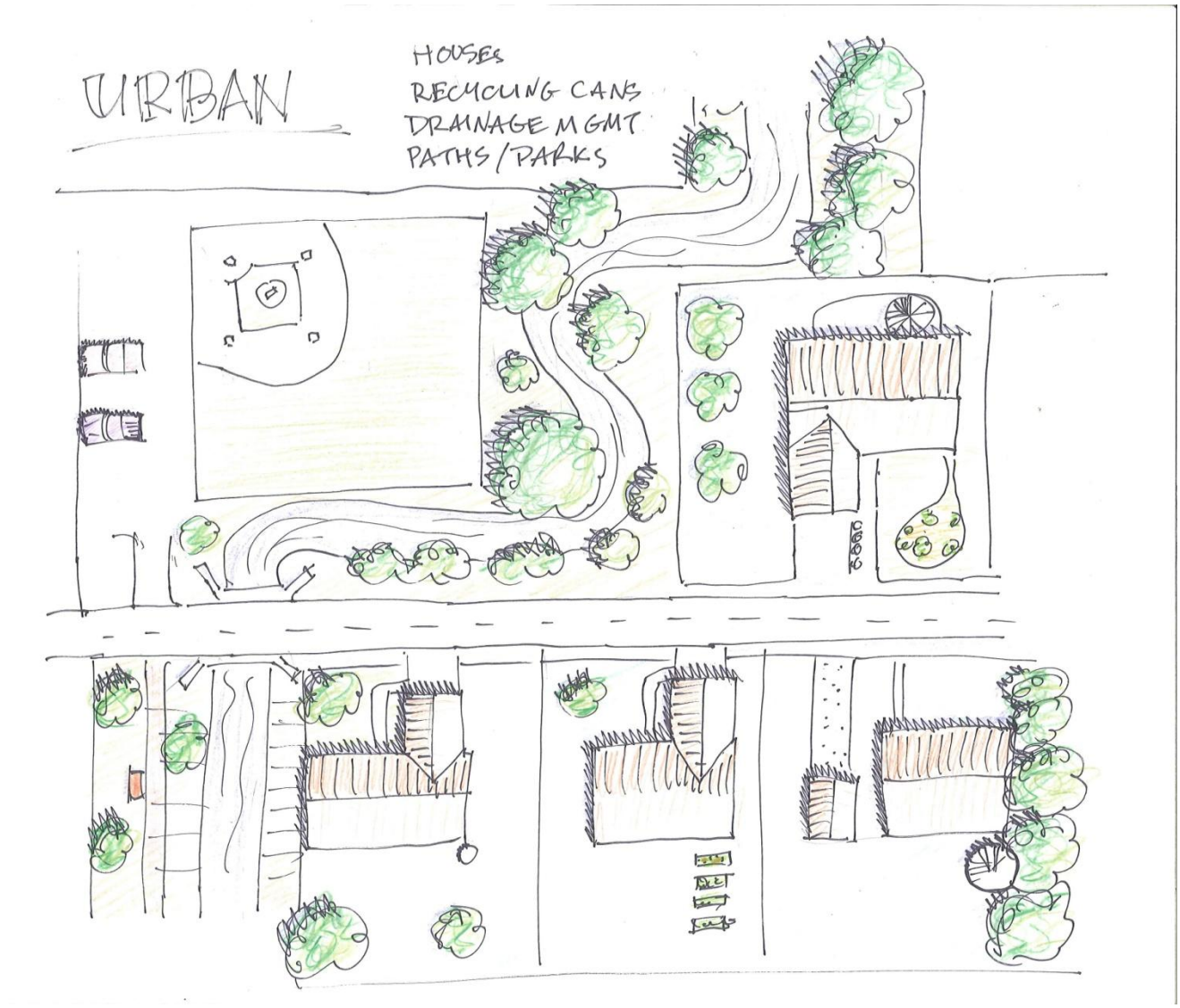


Figure 2: Illustration of suburban neighborhood with naturalized parkways, paths, and 'backyard' conservation opportunities such as vegetable gardens, rainwater catchment barrels, rain gardens, and permeable surface driveways.

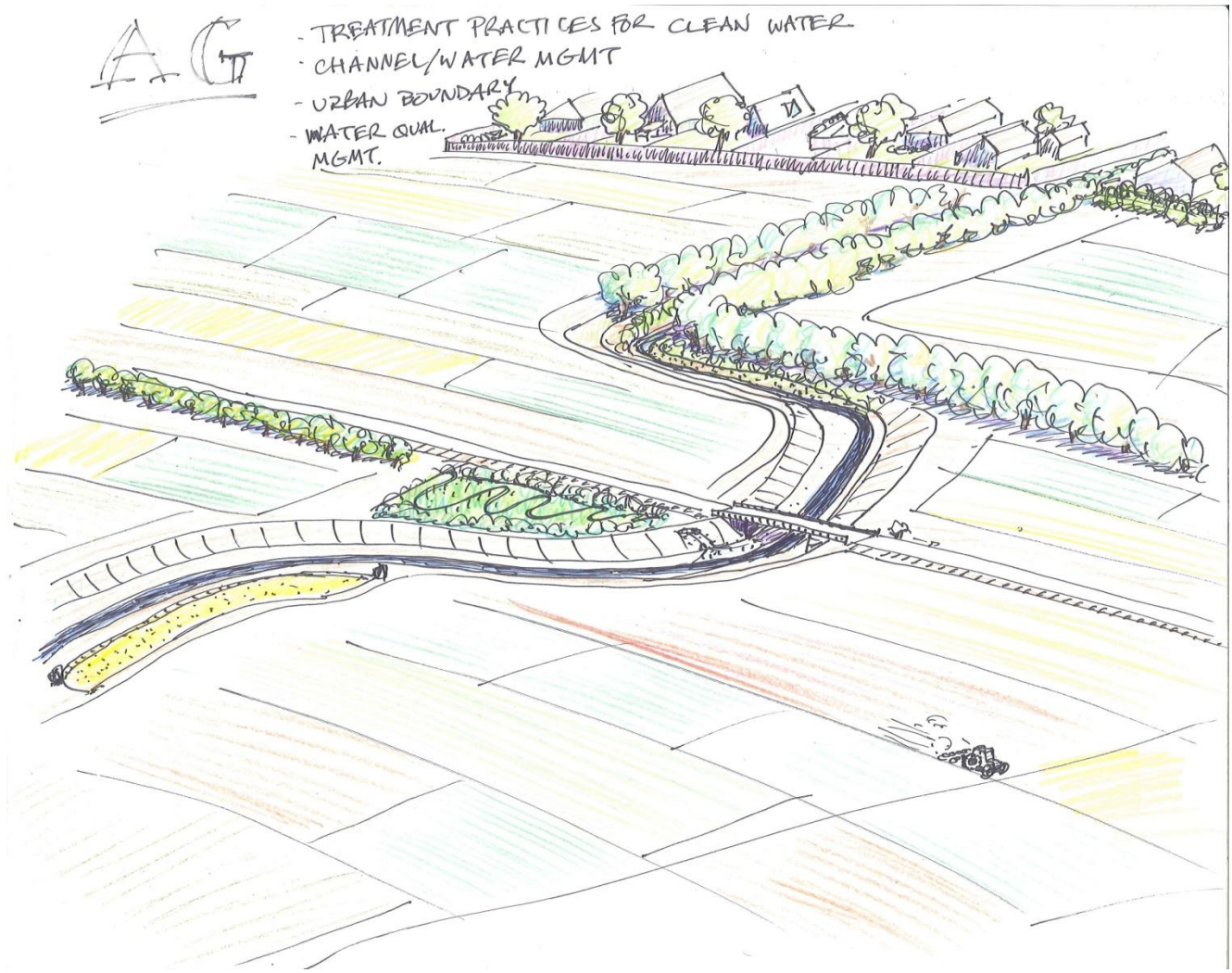


Figure 3: Illustration of agricultural landscape displaying a range of wildlife and water quality management practices reflective of the diversity of farmers and landowners. It also shows a clear urban boundary--a common interest expressed at the January 2013 workshop.

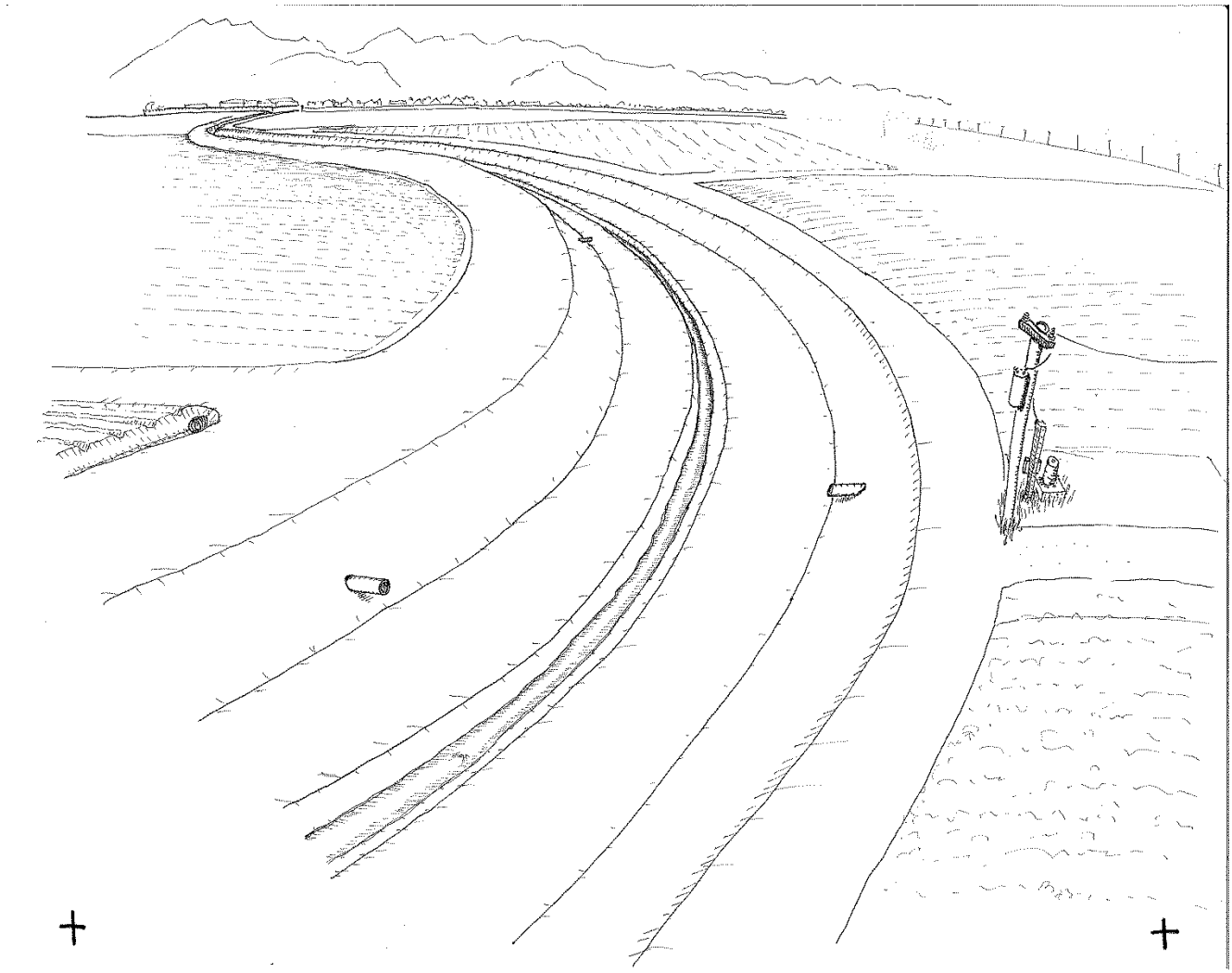


Figure 4: 'Base' drawing of a bare, earthen channel in the Rec Ditch watershed used as basis for overlays of different scenarios in meetings with stakeholders.

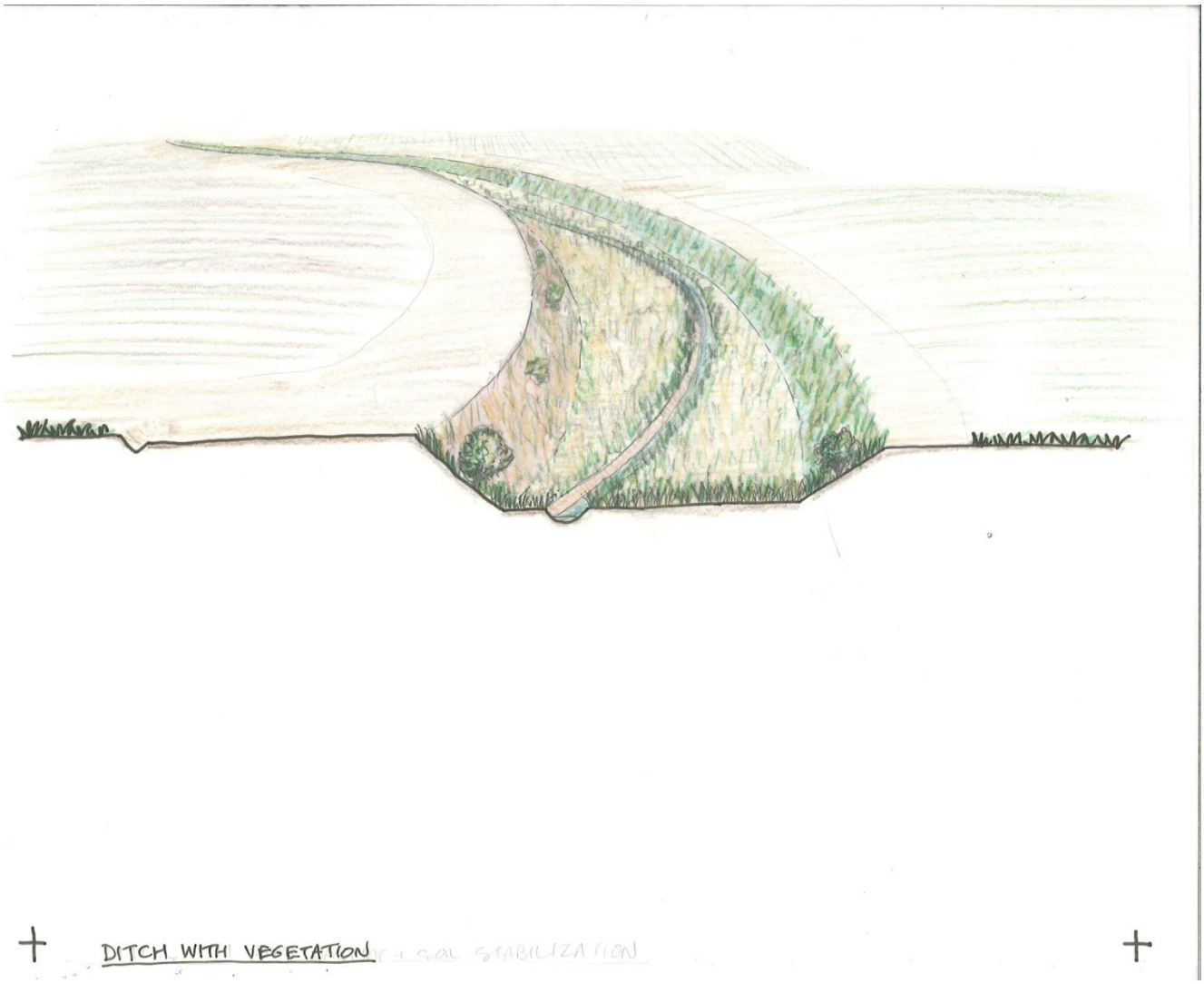


Figure 5: Tracepaper overlay of a combined section/perspective view of the ditch in Figure 4 with herbaceous vegetation from bank to bank and a meandering channel.

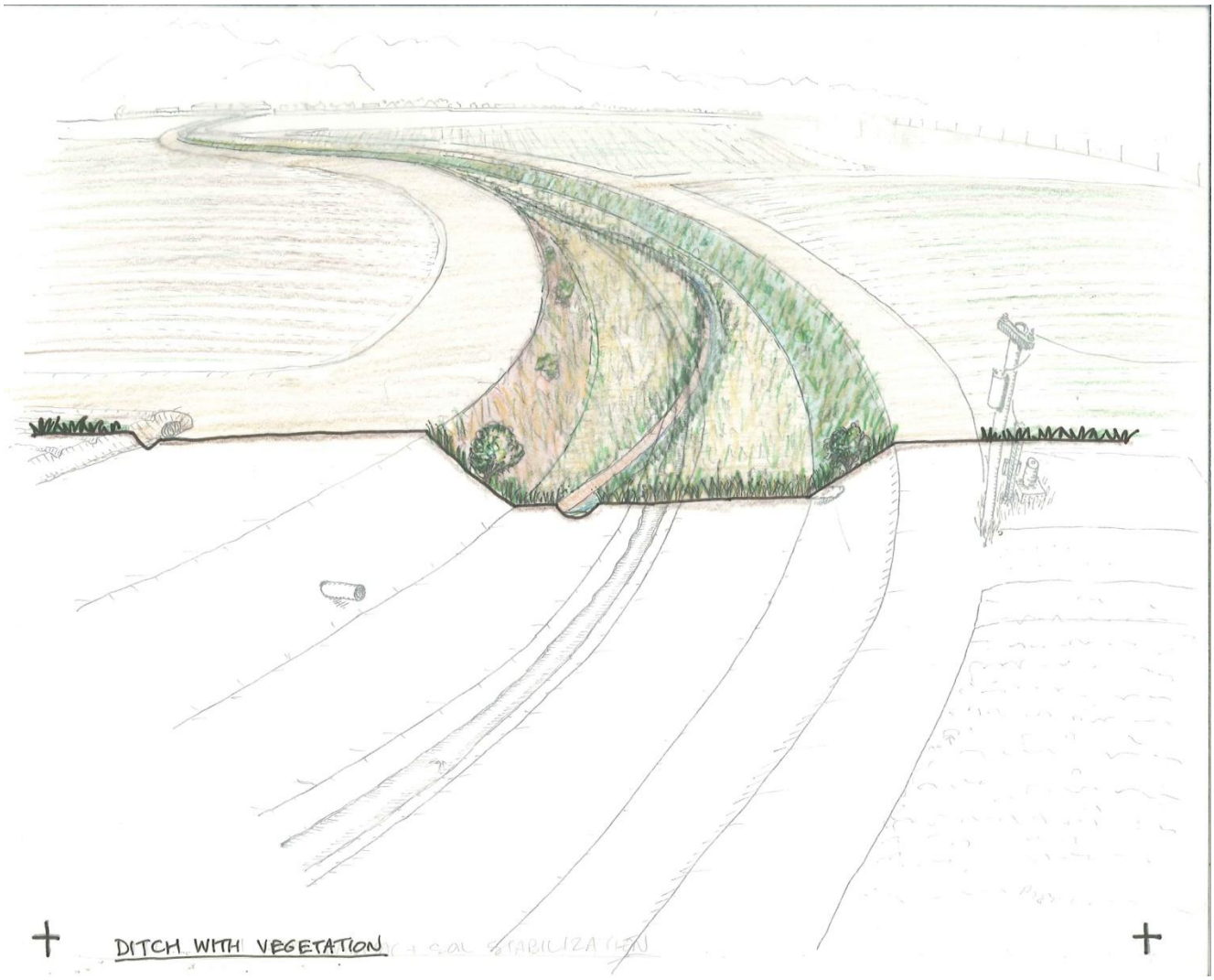


Figure 6: An overlay of Figure 5 on top of the Figure 4 base drawing.

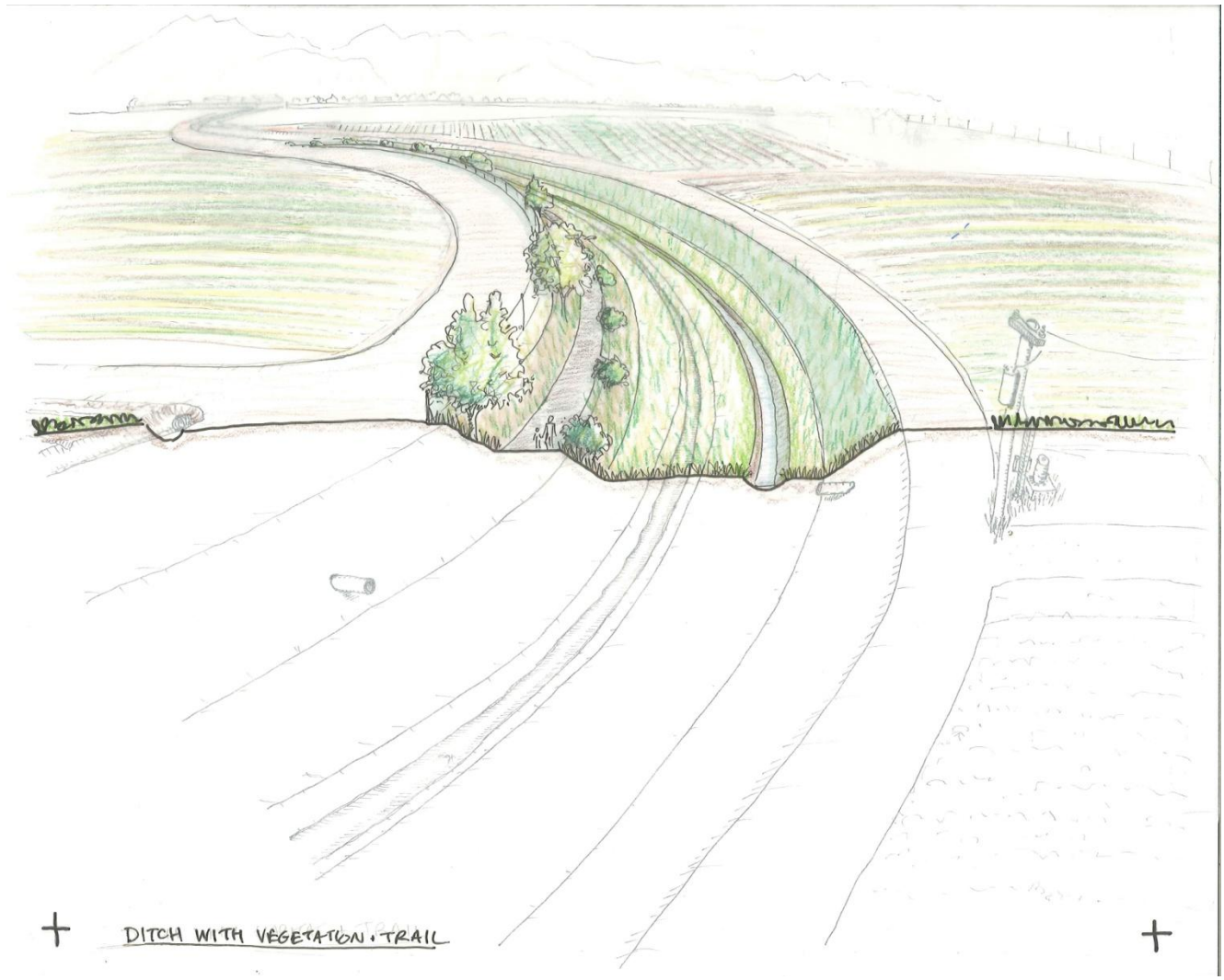


Figure 7: This image, overlaid atop the Figure 4 base drawing, illustrated a representation of a trail system incorporated into a waterway (to many stakeholders, this was specifically the 'Rec Ditch') as a means to connect urban residents with natural areas outside of Salinas and Castroville.

Figure 8: A simplified representation of the region upon which most of the January 2013 drawings focused: namely the portions of the Gabilan/Rec Ditch watershed in the Salinas Valley from immediately upstream of the City of Salinas to the ocean. Consistent with the common themes among those drawings, it shows a predominantly agricultural (and highly productive) landscape with distinct urban areas linked by roads and waterways. This drawing also features notes drawn during meetings with stakeholders adding existing trails (dashed line parallel to Hwy 1 in center left) and potential project areas along streams in the City of Salinas.

The outcomes of those meetings are expressed below in terms of areas of agreement on desired future states of the watershed and potential projects.

Shared Ideals

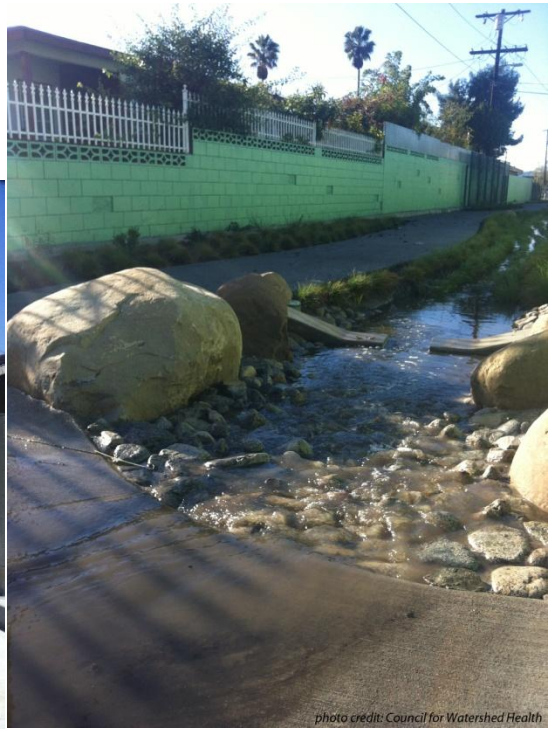
1. Residents of Salinas will enjoy and have good access to green places, and ample outdoor education and activities will engage children and other community members in maintaining local environmental quality.

The City of Salinas is well below a national standard of 10 open space acres per 1000 people (CSU Pomona, 2003). Building Healthy Communities, other citizen groups, and the City of Salinas are eager to rectify this by creating accessible green spaces wherever possible in the city by various means, including: development of paths and parks along waterways in the city (e.g. Gabilan, Natividad, Santa Rita, and Alisal Creeks); creation of new parklands pending new developments and willing sale of farmed lands in Carr Lake; and development of 'green streets' with more trees/vegetation, slower traffic, and permeable surfaces.

Community programs to draw kids outdoors more to learn about nature and participate in projects that contribute to their local environment. The consensus was that we need more of this good thing. Existing efforts at the Santa Rita School and Return of the Natives were referenced.

Figures 9 & 10: Examples of means of engaging community members in improving natural and common areas in the City: vegetation planting and community murals.

New pathways or access points to parks are needed to encourage community use, help keep pedestrians off high-speed roads such as Constitution Blvd., and can be designed for maximum infiltration and native landscape value.



Figures 11 & 12: Images exemplifying urban area improvements that convert a blighted area (in this case, a regularly-flooded alleyway in Los Angeles County) into a greenway designed to accommodate winter stormwater in a naturalized manner. Source: Elmer Ave Community Alleyway Project, Los Angeles, CA

Figure 13: Many drawings at the January 2013 workshop referenced the desired for a large park at Carr Lake, and many interviewees spoke positively of the conceptual plan for such a park as developed by a team of Cal Poly Pomona graduate students in 2003. Their plan was designed to meet multiple community needs for recreation, natural areas, and flood water management.

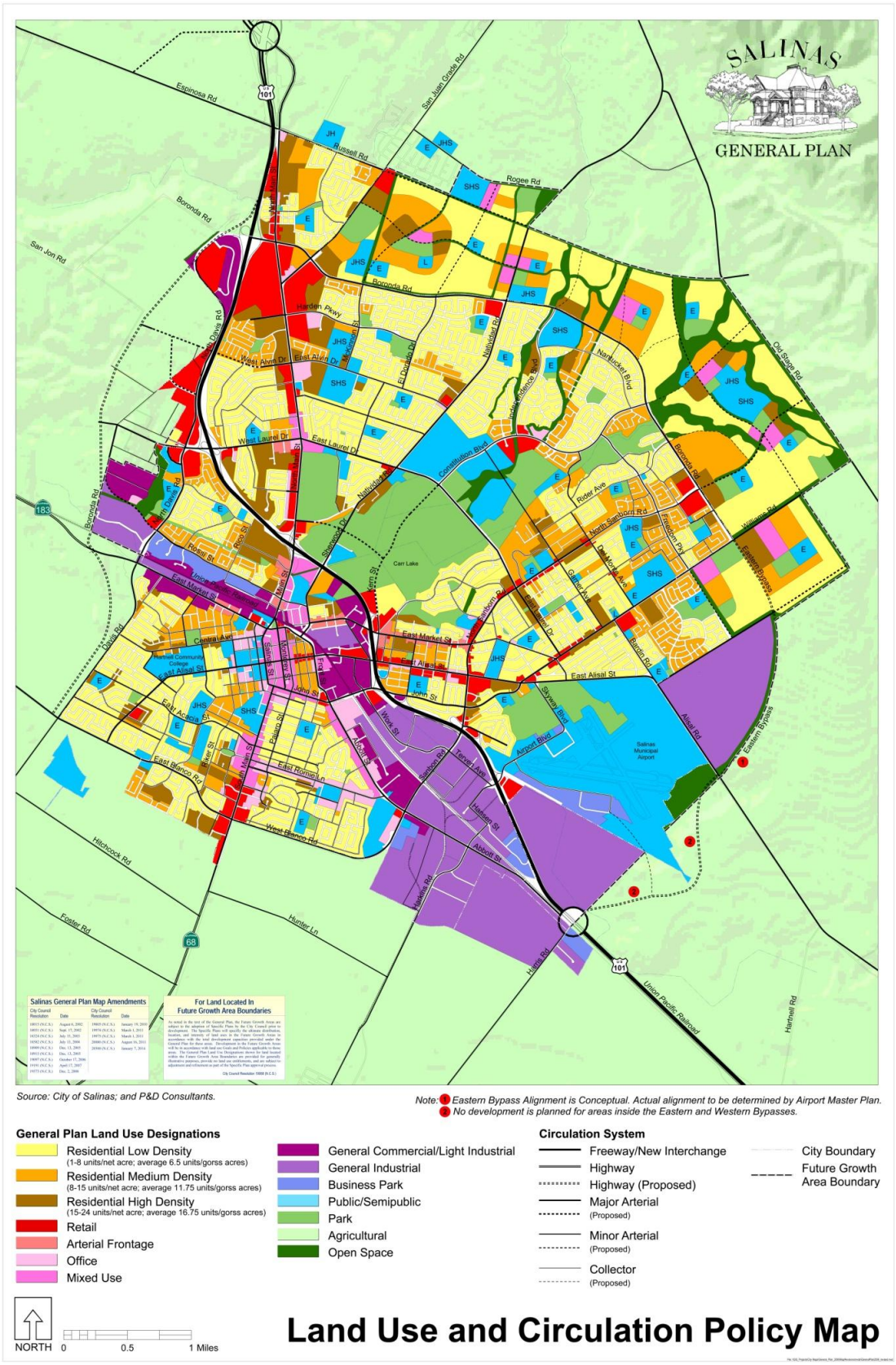


Figure 14: From the City of Salinas General Plan, showing desired parks and parkways, including a large park at Carr Lake.

2. Within city boundaries, urban runoff management practices and facilities will minimize the impact of urban impervious surfaces on storm flows to regional water ways.

Low Impact Development techniques for new development make for more attractive neighborhoods with more shade and vegetation while enhancing local percolation of rainwater and reducing stress on the Reclamation Ditch system.

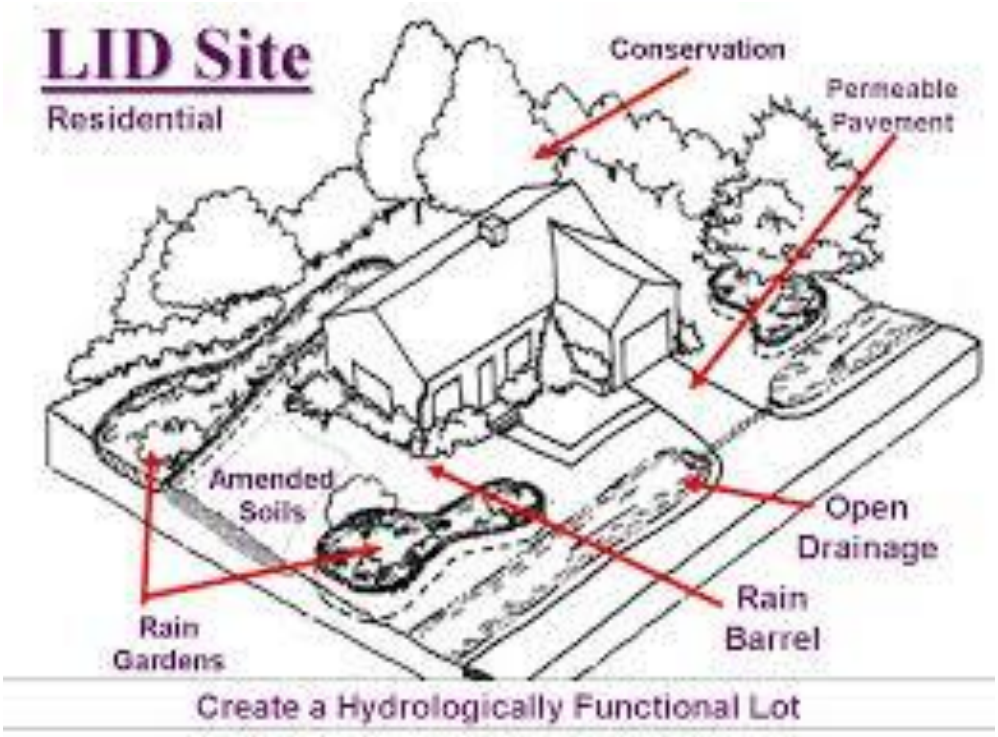


Figure 15: Conceptualized drawing of an urban lot designed to minimize runoff from the site. Future growth plans for the City of Salinas call for 'Low Impact Development' (LID) techniques such as these to reduce stress on the already 'maxed out' Rec Ditch system that would be anticipated as the urban 'impermeable' footprint contributing runoff to the watershed is increased.

Figures 16 & 17: Pictures of lots and neighborhoods incorporating LID techniques.

Retention and Percolation ponds in parks and new developments can serve as recreation areas during dry periods, create ponds and wetland features in the winter, serve as nearby-nature year round, reduce stress on the Reclamation Ditch system and enhance local aquifer recharge.

Figures 18-20: Suburban detention basins serving multiple purposes with wildlife and recreational values.

Figure 49, above: Suitability for aquifer recharge. Areas of darkest green have the highest potential for the placement of infiltration basins.
Figure 50, right: Suitable areas were determined based on these criteria.

Based on soils and their permeability, topography, and land use (See Appendix C), an area with the highest potential suitability for recharge would have highly permeable soils, with percolation rates six inches per hour or greater. Soils that are not very permeable could also potentially contribute to re-

High
Moderatly High
Moderate
Moderatly Low
Low
Not Suitable

	Topography	Land Use	Soil Permeability
High	Less than 6% slope	Vacant undeveloped land; open space	6 to 20 inches per hour
Moderate	6-16% slope	Sports fields, parks; farm land adjacent to creeks	Less than 6 and more than .6 in/hr
Low	16% and greater slope	Occupied developed land	Less than .6 in/hr

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Figure 21: Map developed by Cal Poly students illustrating opportunity areas in the watershed for percolating captured surface water for groundwater recharge.

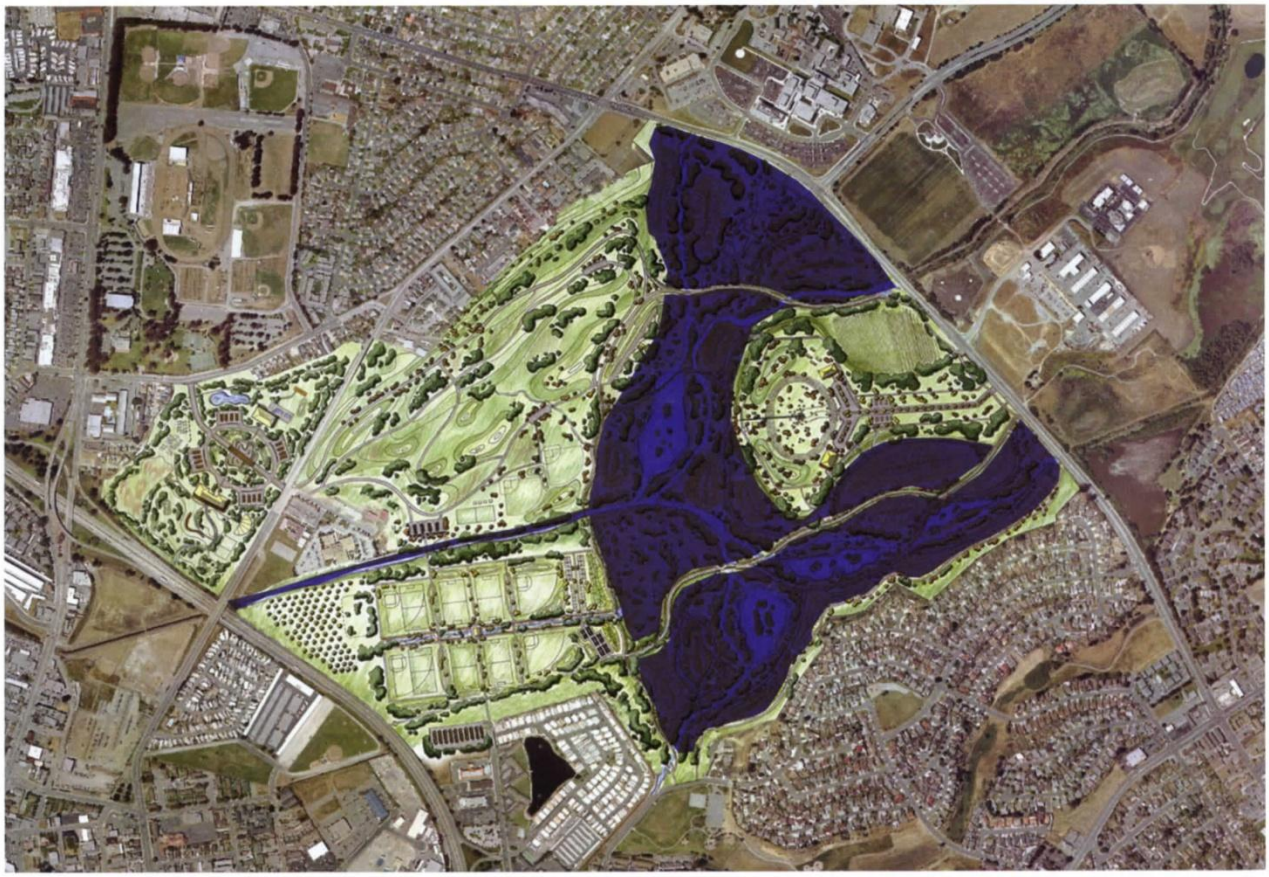

Figure 105: A 25-year flood event in Carr Lake Regional Park.

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Figure 22: Image developed by Cal Poly students illustrating how their Carr Lake park conceptual plan would be designed to handle a '10-year' storm event based on historical rainfall records and hydrologic modelling.

3. Area farms will host a variety of farm runoff water quality management techniques reflective of the individual approaches and needs and innovations, resulting in cleaner waterways amidst a thriving agricultural economy.

New technologies such as those using bioreactors and resin beads give farmers the flexibility to treat runoff water quality concerns while limiting food safety program liabilities associated with open ponds and vegetation. Resin bead systems allow recovery of the trapped nutrients and potential re-use by the farmer or elsewhere.

Wetlands can be designed to perform multiple functions (habitat and water quality) where land is available for the wetland and an associated food safety buffer.

Figure 23: A modification of Figure 3 incorporating comments from interviewees regarding additional farmland practices for water conservation and food safety protection: in-field soil moisture monitoring stations and low-stature 'food safety' fences along waterway and pond edges to minimize small wildlife incursion into vegetable production fields.

4. The Reclamation Ditch/creek system will be able to safely and effectively convey storm flows while protecting or enhancing water quality as flows are conveyed to Elkhorn Harbor. Where possible, wetlands and other wildlife habitat will be incorporated into the system's function.

The RD system is desperately in need of improvement for bank protection, strategic stormwater retention and conveyance capacity within a challenging context of water quality regulations and general public scrutiny. Any project to treat the system will be extremely costly, which will require a combination of local fund-raising (fees, bond sales, etc) and external grants. Such a large, publicly-funded project will require broad acceptance and political support and demonstrate meeting multiple criteria for conveyance and environmental quality concerns.

If a comprehensive treatment of the Rec Ditch system seems financially or politically out of reach, another approach could be to identify sets of projects to treat critical locations in the system and treat them individually as prioritized. These are identified in the studies by Schaff & Wheeler, CSUMB and CSU Pomona.

In the meantime, interviewees noted that the ditch bottom and banks can be intentionally or passively vegetated with low-statured, herbaceous vegetation that will protect the channel without inhibiting storm flows, with silt fencing on the edges and 50' bare earth buffers from edge of vegetation to crop to meet current food safety standards. The comfort level of the individual farmer and the configuration of the channel in a given locale affect how much vegetation grows in the channel, as some prefer to keep banks bare but the channel bottom 'green'. Some sections of ditch are less stable and may require more substantial armoring than vegetation can provide.

Incorporation of a public access element to the waterway (such as park nodes or paths) has been suggested as a possible means to expand potential funding options and public interest, but would have to overcome substantial opposition from the host agricultural community, for which a financial and political cost-benefit analysis would need to be developed considering the 'heat' associated with the topic.

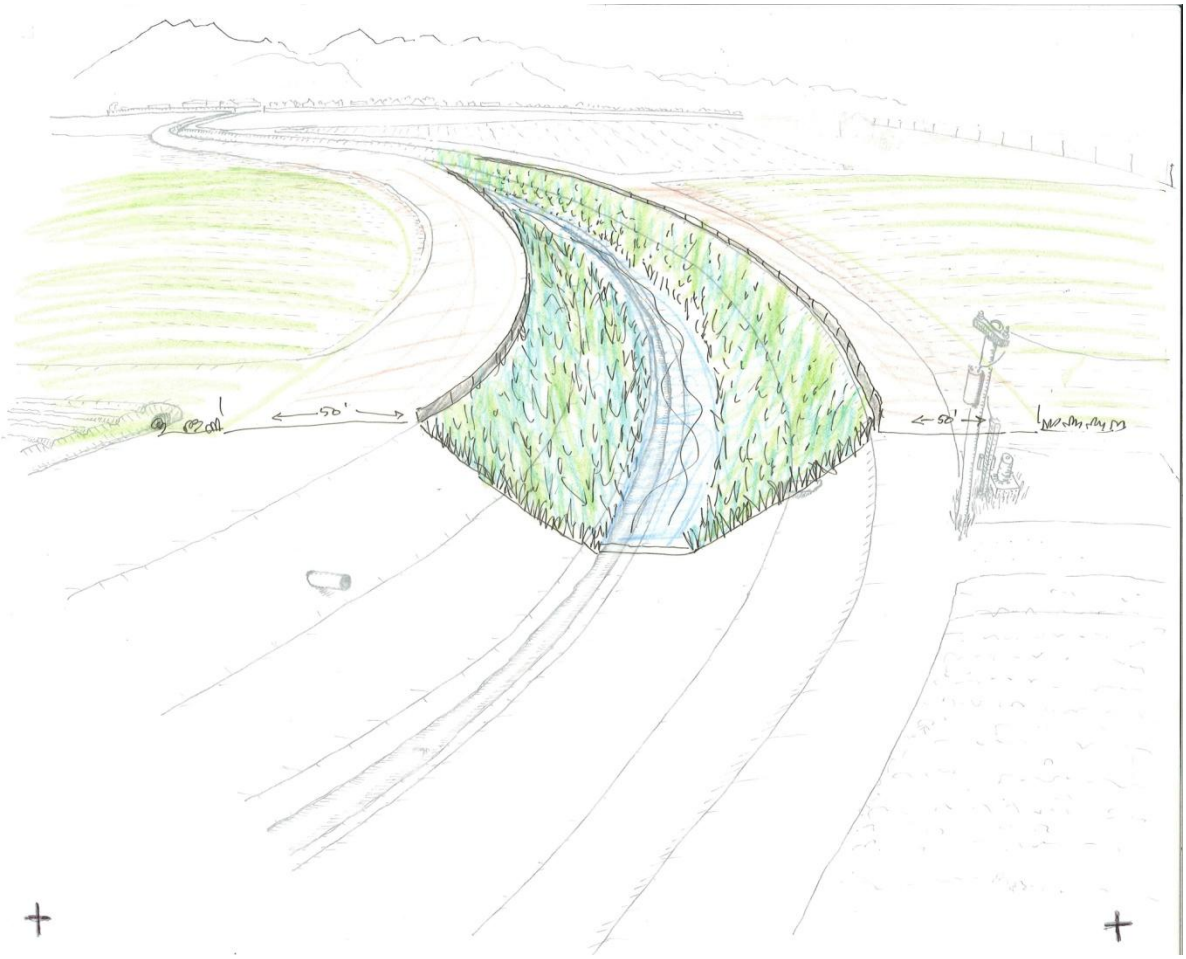

Figure 24: An overlay of the ditch schematic more illustrative of a typical Rec Ditch cross-section with 'bank-to-bank' herbaceous vegetation, calling out specific elements needed to meet food safety concerns: low-stature fence and 50' bare-earth buffers between edge of vegetation and field.

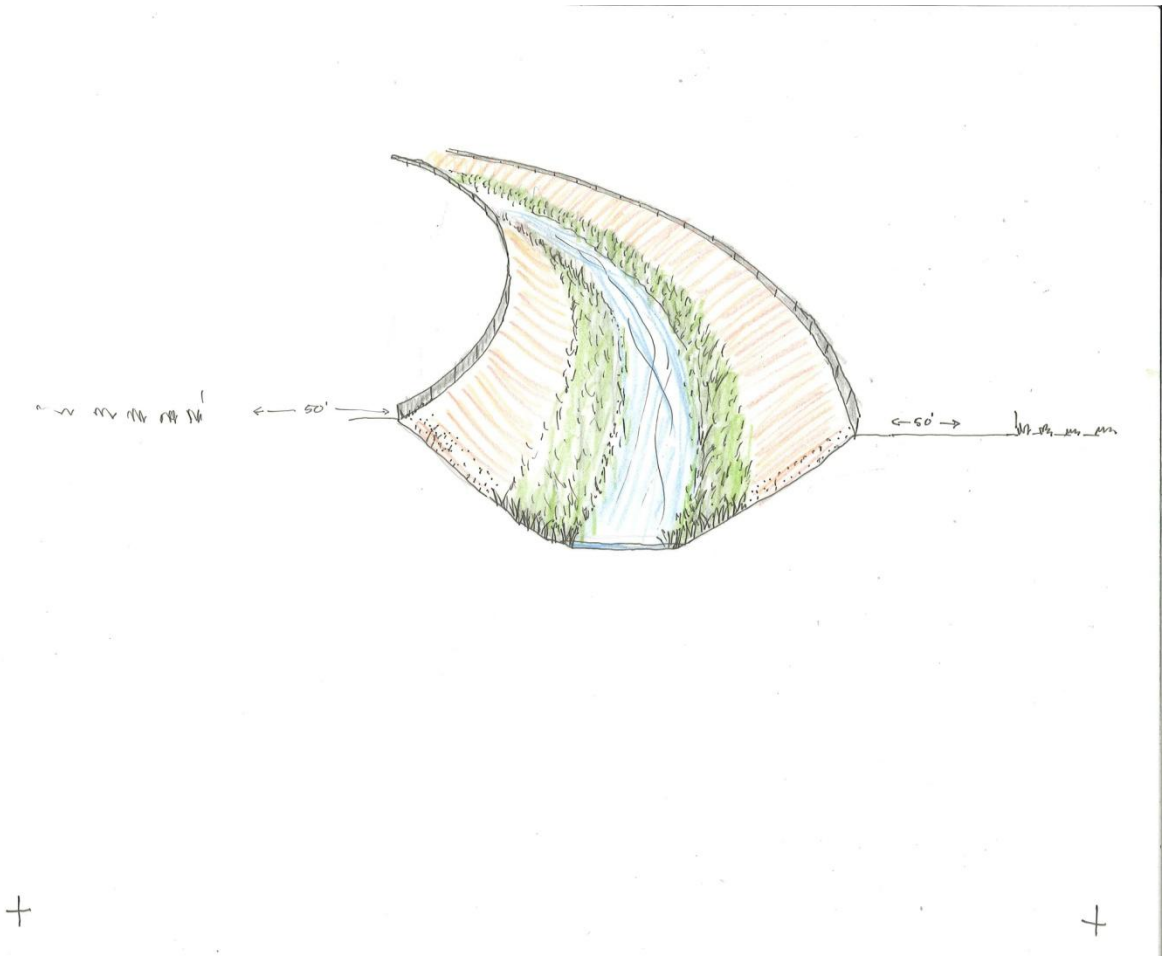

Figure 25: The most-preferred option among the farmers interviewed for a Rec Ditch cross section: namely vegetation just in the lower part of the channel where it's difficult to control, but potentially provides erosion control and may draw nutrients from the saturated soil along the channel. A bare bank is preferred by food safety inspectors, especially augmented with a low-stature fence and additional bare earth buffer.

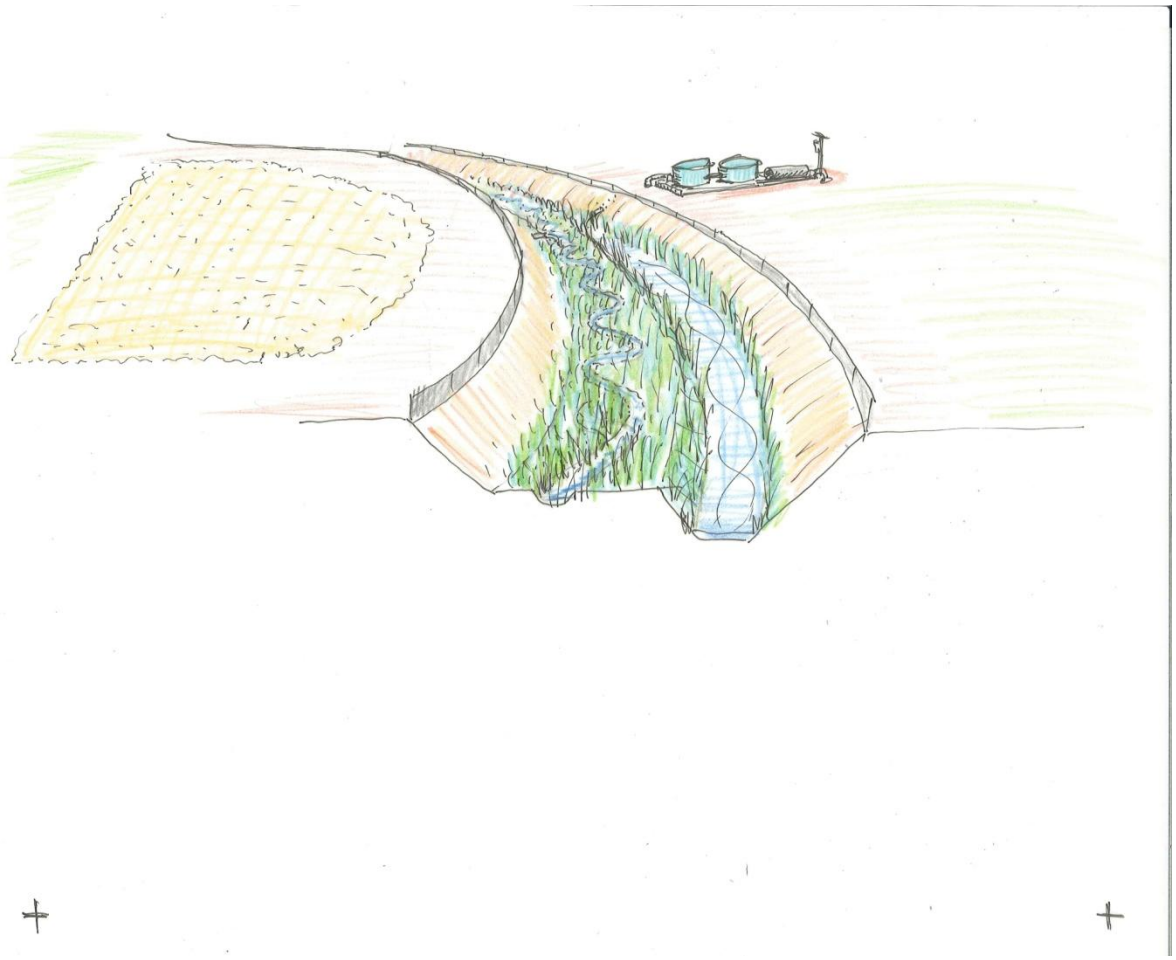

Figure 26: Illustration of an alternative ditch cross section showing several water quality treatment practices (from left to right): 1) woodchip denitrification bioreactor on edge of field outside ditch treating water before it drains into channel; 2) water quality treatment wetland on a perched 'bench' through which drainwaters flow before dropping into the active channel below (with food safety fence on either side of channel); 3) new intensive water treatment technologies (in tanks, for example) still in development. No single technique alone is assumed to be able to improve runoff water quality, nor is any one technique considered applicable to every situation. A future, healthy landscape is assumed to feature a variety of combinations of water quality management practices reflective of the diversity of soils, crops, hydrology, water systems and land managers.

5. Pedestrian and bike-friendly paths connecting Salinas to regional path systems will be developed along paths or nodes of least resistance.

While inclusion of a trail into the Rec Ditch cross-section was not considered a conveyance liability, it was unanimously rejected by farmers as a hazard for food safety, vandalism and general liability. Some indicated that it could only be a consideration if fencing was installed and compensation was available for the land lost to additional buffers and associated production constraints. Most of those interviewed thought there might be less controversial or challenging routes for trails between Salinas and Castroville, such as along existing right of ways, similar to the trail between Castroville and Molera Road or through easements across less productive farmland.

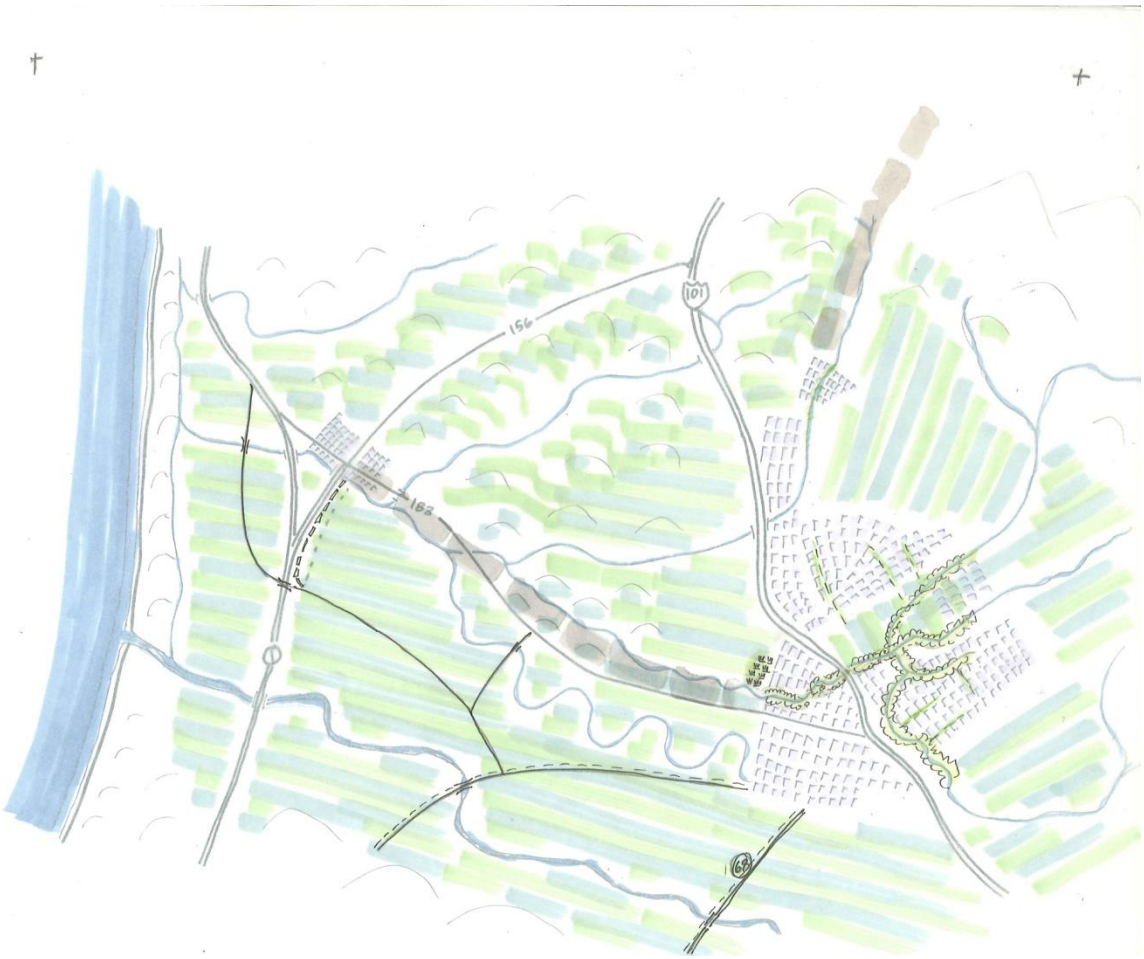

Figure 27: A tracepaper overlay of desired (fat grey dashed lines) and existing pathways in the watershed along with potential greenways in the city of Salinas as traced over Figure 8.

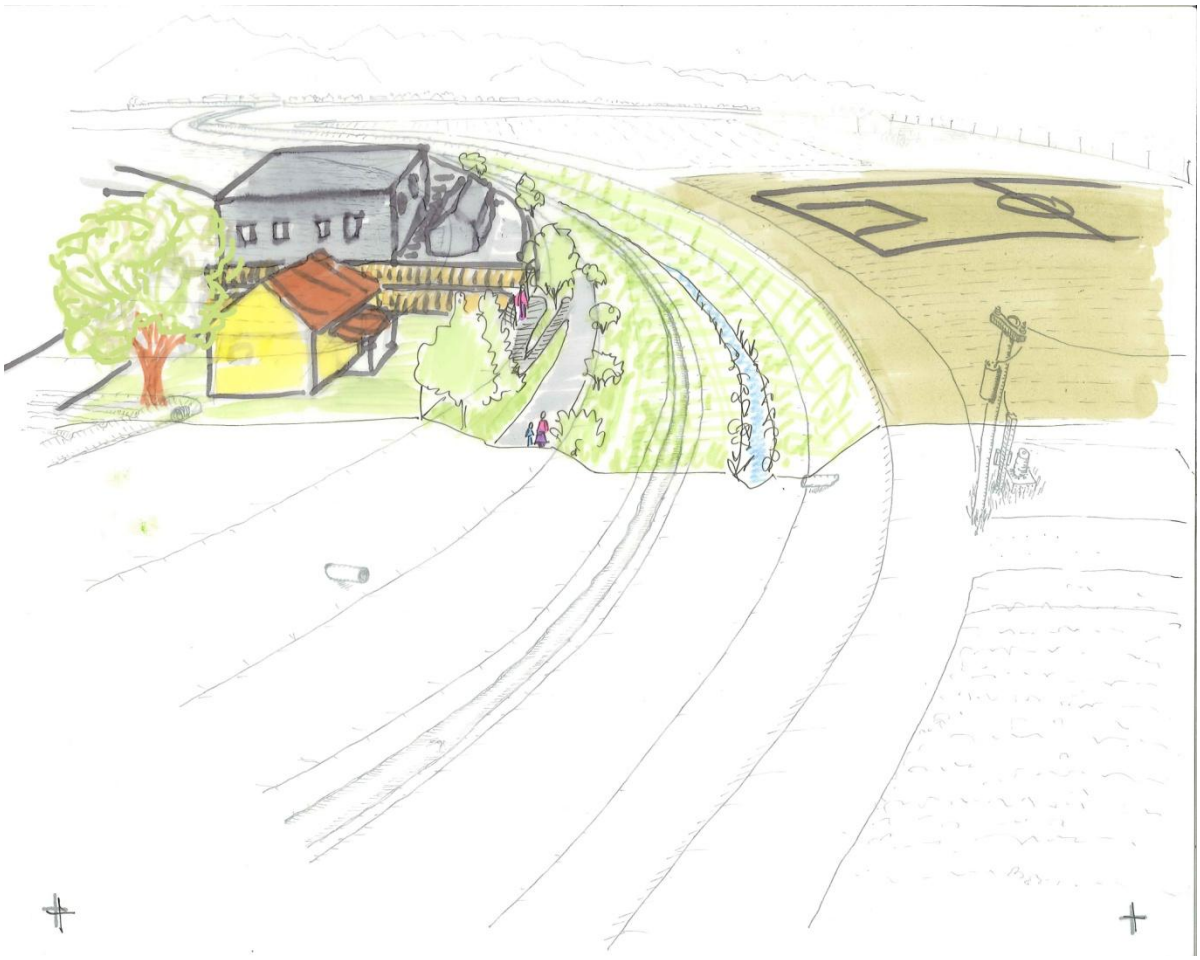

Figure 28: Conceptual image of a 'parkway' trail incorporated into the right-of-way of a waterway on the edge of a park in Salinas, as overlaid upon the ditch schematic in Figure 4.

Figure 29: Existing path between Hwy 156 and farmland running from Castroville to Molera Road

Watershed Objectives Defined at January 2013 Workshop

- Minimize Maintenance Costs
- Children in the Environment
- Sustainable Safe Ag
- Community connection to their creeks and rivers
- Healthy Families and Communities
- Clean Safe Water
- Flood Protection
- Manageable landscapes
- Safe Food Supply
- Environmental Stewardship
- Functioning drainage systems
- Buffers and Water purifying habitat
- Stormwater Management
- Recreation and Open space
- Productive Farming
- Wetland Resource Restoration and Conservation
- Education and Research
- Water Quality projects (BMPs)

Project Hurdles

- Additional Operations and Maintenance costs
- Land Owner agreements/ acquisition
- Construction Costs
- Land use changes
- Food Safety guidelines
- Lighting
- Fencing
- Public Safety
- Trespassing
- Flood protection
- Threatened and Endangered Species
- Protected habitats
- Coastal Protection
- Water Quality Regulations