

Recommendations from the Ad Hoc Tree Committee for Town Park Improvement

September 28

2011

Actions taken by the Ad Hoc Tree & Park Committee and a recommended plan of action in detail for fall 2011 through spring of 2012 to better maintain and improve the conditions of the landscape on Town Property including an outline of actions to be taken annually and through 2016.

**A five-year
Action Plan**

Table of Contents

Purpose of Ad Hoc Park and Tree Committee of the Town Council.....	3
Council Approved Actions in Progress or Completed to Date.....	4
Formation of Citizen Committee.....	4
Assessment of current tree conditions and recommendations from professional arborists.....	4
Pruning class for Town Public Works Department, Committee and General Public.....	4
Storm water management class for Public Works Department, Committee and General Public.....	5
Development of a Pollinator Garden in place of the Memorial Garden.....	6
Recommendations for Public Works Procedure Changes.....	7
Semi-annual application of a grass herbicide around all tree trunk bases.....	7
Annual removal of mistletoe from town property trees.....	8
Prune large dead branches and diseased branches from town property every three years.....	9
Stop the removal of mulch material from bare soil areas of the park	10
Continue the deep water plan and implement a semiannual fertilization plan.....	10
Recommendations for Town Policy Changes and Hazard Prevention....	11
Implement policy change for all motor vehicle traffic on town property between 3 rd and 4 th Avenues...11	
Stop vehicle traffic on soil covered areas around Town Hall.....	12
Reconstruct the ramp on the Northeast corner of the Gazebo pad to comply with ADA standards.....	13
Recommendations for Action Projects in Phase One of the Five-Year Plan.....	14
Landscape around the bird sculpture to define and highlight the artwork.....	14
Create a landscaped water absorption basin on both sides of the gazebo from the slab to the appropriate downhill grade.....	16
Create check dams along the McKeown Ave side of the helicopter landing area and better define the parking area on McKeown Avenue.....	19
Plant native vegetation in the standing water area at the outflow side of the culvert on Quiroga Ave...22	
Create swales and humps on downhill slopes of several trees in the park and mulch the area of the tree to the tree’s drip line and do a swale and hump along the Naugle Avenue edge of the Park.....	24
Outline of Goals for Park Preservation and Improvements 2012 to 2016	
Appendices	
A. Minutes of Committee Meetings.....	26
B. Arborist’s Report.....	30
C. Press Release soliciting input from Citizen’s and outlining actions and funding sources.....	37

Purpose of Ad Hoc Park and Tree Committee of the Town Council

The Ad Hoc Park and Tree Committee was charged by the Town Council in January of 2011 to evaluate the Town's park properties as to needs for maintenance and improvements and report recommendations of the Committee to the Town Council.

No action by the committee is to be done without Town Council approval.

Any recommendations made and approved by the Town Council are to be implemented or overseen by the Committee.

The Committee is to hold regular public meetings.

The Committee is to submit requests to the Town Manager for funding from the Park Preservation Fund from the Patagonia Fall Festival donations and other funding sources for implementation of actions approved by the Town Council.

Each recommendation for action projects will provide information to the Council on the need, goal, implementation procedure, and funding source for the project.

The Committee has compiled this Action Plan to expedite the request process with the Town Council and to provide a report of progress. The Committee will make detailed recommendations for actions in phases with each phase covering a one-year period from June 1st each year. Additional requests for recommended projects may be added during the year as they arise, but it is the intention of the Committee to provide a detailed overall plan of action for each phase of the Five-Year Plan. Some recommendations will be for an annual maintenance program and once adopted, will continue each year unless withdrawn by the Town Council.

Council Approved Actions Completed to Date

Formation of Citizen Committee:

In February of 2011 the first meeting of the Committee was held. Interested parties were invited to be part of the Committee via email and public notice. That meeting included Chair Cornelia O'Connor, Vice-Mayor Andrea Wood, Patagonia Area Business Association President Jeff Evans, Fall Festival Coordinator Kazz Workizer, Patagonia Museum President German Quiroga, Arborist Cliff Hirsch, and residents Bea Quiroga and Kelly Fleming. [See appendix A.- Committee Meeting Minutes]

Assessment of current tree conditions and recommendations from professional arborists

The Town Manager contacted Certified Arborists Juan Barba and Cliff Hirsch, to perform an evaluation and report of the trees in Town Park. \$800 of the funds set aside from the Fall Festival was used to pay for the report. [See appendix B]

Recommendations from the Report include:

1. Improve water flow to trees in the park. Many trees suffer from lack of water due to inadequate delivery of irrigation water, compaction of the soil, and unchecked run-off from sloping landscapes.
2. Remove low tree limbs and large dead tree limbs before branch failure to prevent damage or injury to property or park users. Correct heaved sidewalks to prevent injury.
3. Restrict vehicle traffic on soil covered areas of the park to prevent further soil compaction. Stop all vehicle traffic in the soil covered area around Town Hall to prevent further soil compaction and damage to grasses and tree roots.

Pruning class for Town Public Works Department, Committee and General Public

The Committee committed to providing educational workshops to aide in the implementation of recommendations made by the arborists. German Quiroga contacted County Extension Agent Dean Fish and asked that he coordinate efforts to provide workshops. Dean Fish

arranged for Jack Kelly, retired U of A Agriculture professor, to conduct a pruning workshop. The workshop was attended by the Town Manager, the entire Public Works Department, members of the Committee and general public. A private donation provided lunch for Dr. Kelly and a stipend for travel expenses. The attendees were invited to a short “walk-through” of the Town Park to examine examples of poor and correct pruning. During the walk through Dr. Kelly diagnosed problems with some of the trees in the park and recommended Round-Up be applied to all of the trees around the trunks on a semiannual basis to prevent the need for string trimmer usage that is doing severe damage to all the tree trunks. He also suggested a general insecticide for leaf-eating insects that have invested a small sycamore in the park. Public Works Foreman, Arcenio de la Ossa, agreed to make those corrections.

Storm water management class for Public Works Department, Committee and General Public

Dean Fish arranged for a Storm Water Management program to be presented by Catherine “Cado” Daily of the Cochise County Water Wise Program at the County Extension Office of U of A South in Sierra Vista.

The program was presented and attended by Public Works Foreman Arcenio de la Ossa, members of the Committee, and members of the public. Ms. Daily presented information on passive and active water collection methods and showed several images of before and after public works water management projects done in the Tucson and Sierra Vista areas. Many of the projects were accomplished with volunteer help.

After the presentation, Ms. Daily toured the park area with members of the Committee and Arcenio de la Ossa. She recommended starting at the top of our water flow problem by adding check dams to the area on the McKeown side of the helipad. For the standing water at the base of the outflow side of the conduit under Quiroga Street, Ms. Daily recommended planting some native water use plants that would prevent standing water in that area and prevent people from walking in the area. She also recommended some similar rain gardens to be added along the watershed from the culvert after we see the results of the check dams and culvert base plantings. These rain gardens would have boundaries defined with large rocks and rock mulch with water tolerant native plants and pathways across the watershed for foot traffic.

Seeing the erosion and safety issues on the McKeown Avenue edge of the gazebo pad, Ms Daily recommended we install gabion benches downhill from the pad with the tops of the benches being even with the top of the pad. We would then need to fill in with some planting of bushes and mulch to create a water retention basin for runoff from the pad and the gazebo roof. On

the shallower runoff area between the pad's ramp and the gazebo she recommended a gabion or curb check dam be used in the same manner as the benches on the other side but these do not need to be as tall as the other side because of the incline and the need to avoid covering the exposed roots of the tree on that side. She recommended swale with mulch on the downhill slopes of other trees in the park to aid in water retention and to prevent erosion or root damage from soil compaction.

Development of a Pollinator Garden in place of the Memorial Garden

Patagonia Girl Scouts sought permission and a donation to create a pollinator garden in the space of the Memorial Garden. They indicated they would remove the non-native plants in the garden and indicated that the Senior Citizens had agreed to do the weeding and maintenance. They asked for a donation of \$500 from the Park Preservation Fund to cover the irrigation system, mulch and walkways. The request was approved and the Town agreed to provide assistance in irrigation, mulch, and walkways for an estimated budget of \$500.

The non-natives have been removed and ground prepared for planting. Completion of planting in the Pollinator Garden is scheduled for no later than April 2012.

The Garden will serve to educate visitors and reduce water and maintenance needs in the area. It will also attract pollinators to the Garden providing another wildlife viewing area in the Town Park.

Recommendations for Public Works Procedure Changes

Semi-annual application of a grass herbicide around all tree trunk bases

PURPOSE:

Removing the plants with the use of Round-Up already in use by the Public Works Department will reduce the man hours needed in mowing the Park and stop damage to the tree trunks from the use of string trimmers or close mowing with large tractor-pulled mowers. Damage to the trunks encourages disease at the base and can result in tree death.

METHOD OF IMPLEMENTATION:

The Public Works Department will apply the herbicide to an area around the trunk of each park tree with grass or weeds at its base. The herbicide will not damage the tree and will kill the grass if applied in the spring and again in the rainy summer season. When the volunteer Committee mulching process is completed, the need for application of the herbicide will be significantly reduced by adequate coverage of the mulch.

COST:

Herbicide is kept on hand by the Public Works Department and reduction in man hours spent trimming and mowing areas around the tree trunks should offset any increase in herbicide usage. The Committee will purchase mulch for the Park at \$30 per cubic yard. A four inch layer of mulch around each tree in the Park between Quiroga and 4th Avenue (87 trees) will cost approximately \$970. Mulching around trees between 3rd Avenue and Quiroga will cost approximately \$180.

FUNDING SOURCE:

Private donations and Park Preservation Fund

COMPLETION DATE:

This is an on-going semiannual project with cost being reduced each year because of the increase in grass control from continual applications of herbicide and mulch build-up.



Damage to tree base from string trimmers

Annual removal of mistletoe from town property trees

PURPOSE:

Reduce branch and limb loss to the trees in the park.

METHOD OF IMPLEMENTATION:

Large- Leaf Mistletoe (Phorodendron) will be pruned out of infected trees at least annually by removing small infected branches before it extends into the main stems or just the mistletoe branches if it has. The plant growth regulator ethephon (Monterey Florel Brand) may be used as directed by the label to control mistletoe in dormant host trees. To be effective, the spray must thoroughly wet the mistletoe foliage. Daytime temperatures must be above 65 degrees Fahrenheit for good results. By treating when trees are dormant, the tree foliage will not get in the way of the treatment and the mistletoe is more visible than when leaves are on the tree. Public Works employees would need to assist in removing or treating large clumps that are beyond the reach of pole pruners and require the use of a bucket truck. It is the intention of the Committee to remove the mistletoe in late November or early December after trees are dormant. We can then package the mistletoe as a fundraiser for the Park Tree Fund. Volunteers will package the mistletoe and it is hoped local merchants will let us place the packaged mistletoe with some information about the Park projects and a donation jar, in their establishments.

COST:

Use of volunteers with privately owned pruning poles will be used to trim the lower branches and approximately 4 man hours from one Public Works employee would be needed for removing clumps over 14 feet above the ground. Merchandising materials will be a one-time cost of approximately \$40. Chemical treatment will cost approximately \$20 each year.



Regrowth will continue unless the branch is removed.

FUNDING SOURCE:

The chemical treatment will be absorbed by the Public Works budget. Merchandising materials and volunteer support will be provided with private donations.

Prune large dead branches and diseased branches from town property every three years

PURPOSE:

Hazard mitigation and aesthetics of the Park are the two purposes of a pruning regimen in the Park. Dead limbs often fall in windy situations and are unsightly.

METHOD OF IMPLEMENTATION:

Volunteers will identify hazardous limbs and will prune lower branches. Public Works Department employees can remove some of the larger limbs but many jobs identified by the Committee members should be done by pruning or removal companies. Evaluation will be done by the Committee each year. Costs to do the entire area in one year are prohibitive so the Committee recommends the Town property be broken in to three areas (Health center to Quiroga, Quiroga to 4th Avenue, and Richardson Park plus 4th Avenue to the end of the Park) so that pruning or removal will be accomplished each year and be completed over a three-year time period.

COST:

Only one estimate of \$1400 was received for the removal of the diseased Cottonwood identified as potentially hazardous.

FUNDING SOURCES:

Volunteers can remove many of the lower branches and will identify limbs that need removal based on the recommendations of the Arborist's Report. For trees that need professional pruning the Committee recommends that SSVEC be approached to remove or prune trees that jeopardize their lines. The Town's insurance might cover the cost of removal of trees or limbs that pose a major safety hazard.

Stop the removal of mulch material from bare soil areas of the park.

PURPOSE:

Using Public Works employees to rake and remove dead fallen leaves and pine needles is counterproductive to water retention and tree root protection techniques. Retention of this mulch material is necessary to prevent grass and weed growth near the tree trunk bases and should be applied or kept in areas above check dams and in water retention basins. Fallen pine needles under pines in bare soil areas help prevent blowing dust, soil erosion, and help protect tree roots and aid in water absorption. Mulch in bare soil areas help mitigate slipping hazards when the soil is wet. Microorganisms that help break up compacted soils and ultimately break the organic mulch into fertilizer for the trees

METHOD OF IMPLEMENTATION:

Large fallen leaves can be broken into pieces for mulch by running the mower over them before raking or blowing them into mulch basins or tree trunk rings. For the most part, just leaving the small leaves and pine needles where they fall is the best option. After rains, mulch material will stay in basins and other low lying areas where mulch is needed to help in water absorption and control the slipping hazards posed by wet soils.

COSTS:

Nothing beyond the man hours already spent raking and removing. Waste in the landfill will also be reduced.

FUNDING SOURCE:

None needed.

COMPLETION DATE:

This is an ongoing annual project with each section of the Park done in a three-year cycle.

Continue the deep watering plan recommended in the Arborist's Report and apply a high nitrogen fertilizer at the drip line of diseased trees in the park semiannually in the early spring and late summer.

PURPOSE:

Improve the health of the diseased park trees

METHOD OF IMPLEMENTATION:

All portions of the park with a water delivery system should be watered by irrigation and those without should have irrigation added or be converted to plant material that can exist on natural rainfall and harvested water. Because of the slopes, soil compaction and lack of turf the system should be set to run each valve with 3 or 4 multiple starts, 15 – 20 minutes at a time rather than a single 1 hour setting. This will possibly increase the water usage in the park approximately 200% over current use. At a minimum, the zones in the northwest portion of the park where there are many large trees in decline should have 1" applied, the remainder of the park with healthier trees could have the volume reduced by a third, i.e., 2 starts of 20 minutes per week, and determine if that is adequate.

FUNDING SOURCE: Public Works budget

Recommendations for Town Policy Changes and Hazard Prevention

Implement policy change for all motor vehicle traffic on town property between 3rd and 4th Avenues

PURPOSE:

The Arborist's Report, Jack Kelly, and Cado Daily have all strongly recommended vehicle traffic be limited on the soil covered areas of the Park. Years of driving on the dirt combined with the original make up of the soil from the days as a railroad bed compacted the soils severely. The density of the soil makes it almost impervious to water and difficult for tree roots to grow. The addition of mulch and the improvement of the irrigation system will help but continuing the practice of park users and Public Works employees driving on the soil covered areas will continue to damage the trees.

METHOD OF IMPLEMENTATION:

Only allow motor vehicle traffic including Public Works pick-up trucks to enter the Park between 3rd Avenue and 4th Avenue on sidewalks and through the street level entrances at the base of the sidewalk leading to the gazebo pad and the one on Naugle adjacent to the gazebo pad. Normal sized vans and trucks fit on the sidewalk between McKeown Avenue entrance and the gazebo pad. That sidewalk only, should be used to carry heavy equipment to and from the gazebo during events. Only large trucks used to supply equipment to the gazebo pad may be allowed to access the pad from the street level entrance on Naugle Avenue that is adjacent to the pad. No vendor should be allowed to drive on soil covered areas of the park. No trailers or RV's should be driven in to the soil covered areas of the park. Only tent vendors should be allowed to set up in the soil covered areas of the Park. Event coordinators should have these limitations to vehicles made known to them in writing when requesting permission from the Town Council for the event. Compliance should be mandatory. Only emergency vehicles should be exempt from compliance. Only necessary landscape vehicles should be driven on the soil covered areas of the park. The entrance being used on Quiroga next to the culvert outflow needs to be blocked.

COST:

\$40 to \$100 for used utility poles and/or large boulders

FUNDING RESOURCE:

Public Works Department hours to haul large boulders to the site and place them or used poles purchased from or donated by SSVEC. If purchases need to be made they would come from the Park Preservation Fund.

COMPLETION DATE:

No later than November 2011

Stop vehicle traffic on soil-covered areas around Town Hall

PURPOSE:

Stop the compaction of soil and destruction of grasses around Town Hall.

METHOD OF IMPLEMENTATION:

Block all vehicle entrances being used by Public Works Department trucks when going to Town Hall to read the meters or other business. Use large boulders or used utility poles to block the entrances.

COST:

Public Works man hours to place boulders or some of the available used utility poles in the area of Town Hall

FUNDING RESOURCES:

Public Works budget

COMPLETION DATE:

No later than November 1st, 2011

Reconstruct the ramp on the Northeast corner of the Gazebo pad to comply with ADA standards

PURPOSE:

Hazard mitigation--The ramp is currently being used by local residents in mobility carts and bicycle riders. It is only 3.5 feet wide and has a very steep angle. It is also used during events by people pushing others in wheel chairs, stroller users, and people in mobility scooters and chairs. The soil on either side of the ramp has eroded and there is an 8 to 11 inch drop from the ramp and the pad where they connect.

METHOD OF IMPLEMENTATION:

Reconstruct the ramp on the Northeast corner of the gazebo pad by extending it to the corner of the pad and realigning the angle of the ramp to be compliant with American Disabilities Act standards. Either the Public Works Department or a concrete contractor could do the work.

COST:

Between \$600 and \$1200

FUNDING SOURCES:

There are grants available for ADA compliance in small communities. Technical information is available online through the Americans with Disabilities Act Technical Assistance Program

Recommendations for Action Projects In Phase One of the Five-Year Plan

Landscape around the bird sculpture to define and highlight the artwork

PURPOSE:

Enhance and define the bird sculpture

METHOD OF IMPLEMENTATION:

Create and maintain a small garden of no more than 6 feet in diameter around the pole support of the Park Bird Sculpture by using a large rock border to define the area and planting drought tolerant plants within the space. Volunteers will landscape and build and maintain the garden.

COST:

Approximately \$200

FUNDING RESOURCE:

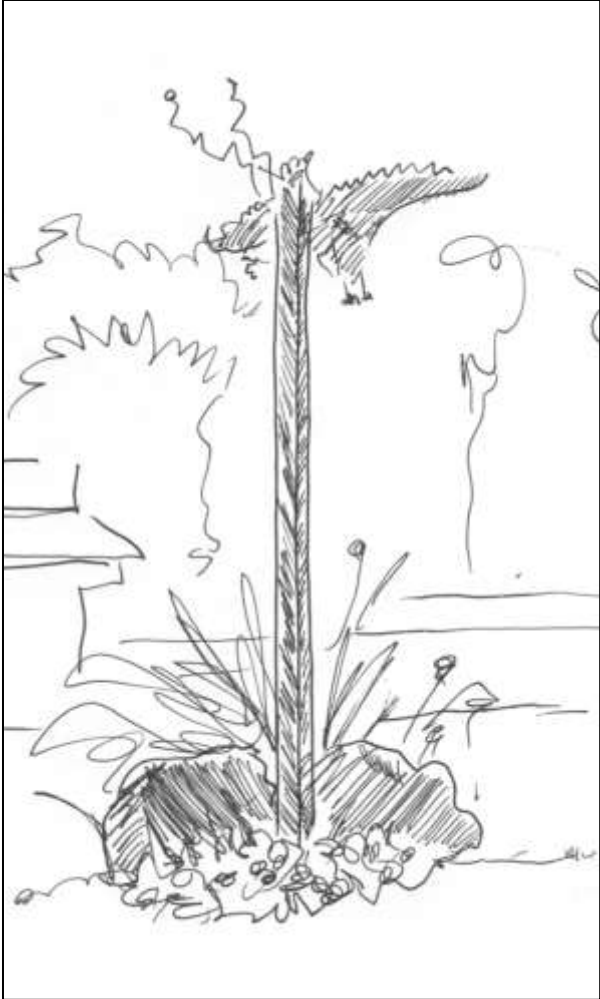
Funding is being sought from the Patagonia Area Business Association

COMPLETION DATE:

No later than May 2012



Photograph of bird sculpture now



Artist's concept of completed project

Create a landscaped water absorption basin on both sides of the gazebo from the slab to the appropriate downhill grade.

PURPOSE:

Protect the tree roots and retain storm water from the gazebo roof and pad that will be gradually fed to the tree roots and plantings in the basin. Correct erosion of the pad edge and down slope. Prevent further erosion in the area of the pad. Improve the aesthetic of the gazebo area. Mitigate safety hazards by preventing cyclists from using the edge of the pad as a jump off point for stunts and preventing falls by people coming too close to the pad edge which now has an 8 inch to 12 inch drop to ground level.

METHOD OF IMPLEMENTATION:

Large rocks will be brought in to the base of the pad on the Southeast side of the gazebo. The rocks will help support the pad edge to prevent further erosion or pad failure. Volunteers will build gabion based benches with concrete seating pads on the stairway side of the gazebo pad. The gabions will be built and filled with rock and placed on the down slope in line from the bottom edge of the stairs between the pad and the tree and the edge of the gazebo wall. Soil from the leveling of the down slope where the gabions will be placed will be used to fill the basin area. Compost and loose garden soil will be added. Drought tolerant native bushes will be planted. The irrigation head at the edge of the pad will be changed from a sprinkler to a multiple tube drip head to water the bushes. A four inch layer of mulch will be added. Another gabion bench will be installed on the Southeast edge of the stairway and soil will be added to make the basin level with the sidewalk corner. All the gabion benches will be tiled with mosaics by the Patagonia Community Arts students.

A lower eight inch tall and 16 foot long structure with a concrete top will be placed in line between the gazebo wall and the ramp on the Northeast corner of the gazebo pad. The structure will be placed from 2 to 4 feet downhill from the gazebo pad. Soil and compost will be added. The basin will be planted with native grasses and the area covered with a 4 inch layer of mulch.

COST:

\$1000 to \$1600

FUNDING RESOURCES:

Potential grant funding from the Patagonia Community Foundation, private donations, and the Patagonia Park Fund.

COMPLETION DATE: No later than May 30, 2012



Artist's conception of the same area with benches topped with mosaic tiles on concrete top and small bushes planted in the water retention basin between the pad and the downhill slope. Bench tops will be on the same level as the gazebo pad.

Create check dams and parking area definition along the McKeown Ave side of the helicopter landing area.

PURPOSE:

Check flood waters from the helipad area watershed and help the sycamore trees in that area absorb more water. Hazard maintenance in the parking area along McKeown Avenue by the helipad and definition of the helipad boundary to prevent casual crossing of the area by cyclists and pedestrians.

METHOD OF IMPLEMENTATION:

Volunteers will strategically place rock check dams to the specifications supplied by Cado Daily to slow the water flow on the McKeown Avenue side of the helipad. Dams will be placed downhill from each sycamore tree to retain some of the storm waters to support those trees. Used utility poles will define the parking area and helipad boundary leaving an open access driveway for emergency vehicles

COST:

Up to \$180 for rock and used utility poles

FUNDING RESOURCES:

The Committee will solicit donations of utility poles from SSVEC and rock from a local contractor. If the Town has available rock the Committee can use then we will recruit volunteers to help move the rock to the project site. All labor will be done by volunteers.

COMPLETION DATE:

No later than January 30th to capture any winter rains we may get.



Three samples of straw or fabric check dams

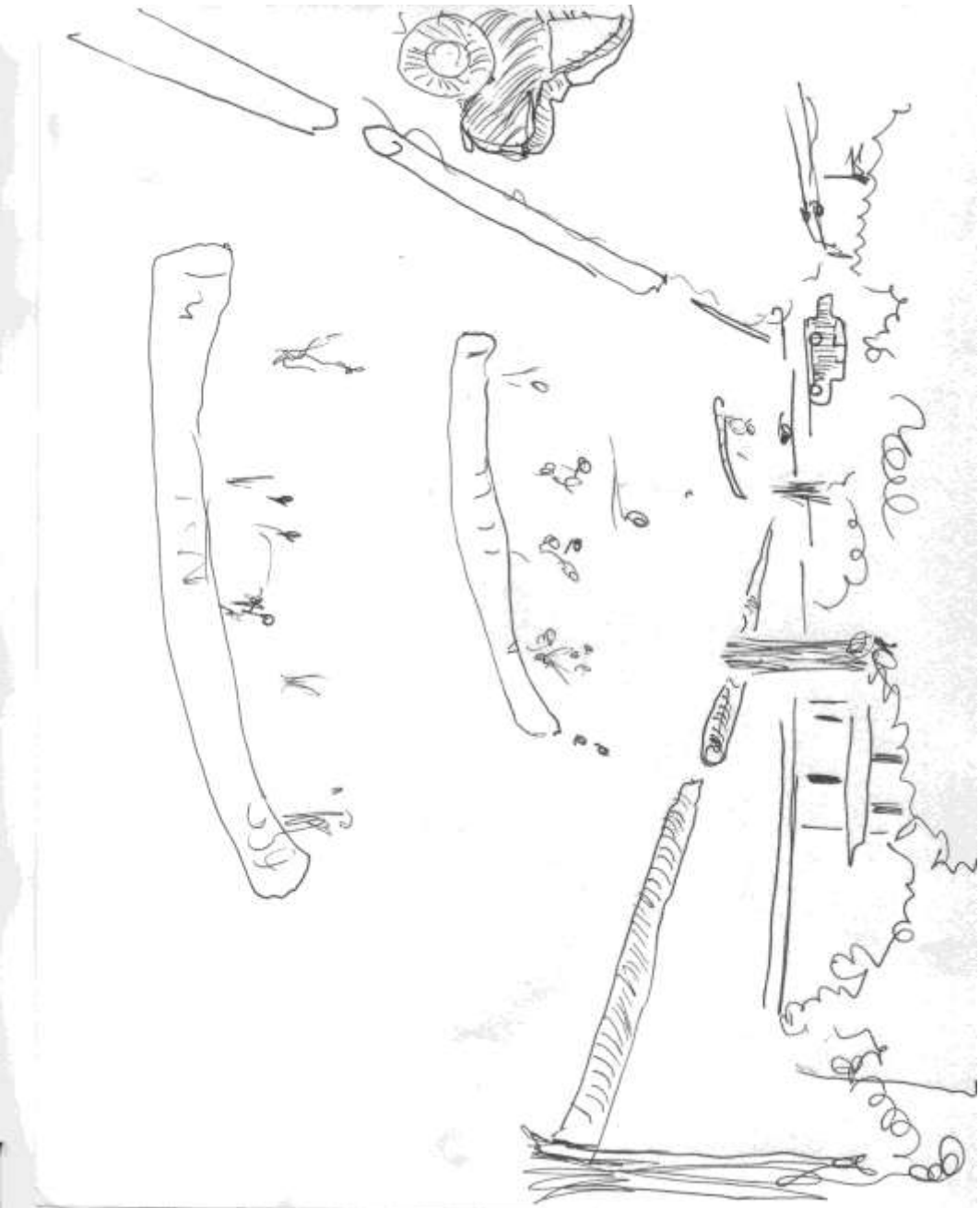


Rock check dams similar to our project

Photograph of drainage area now with parking unrestricted on the left side of the image



Artist's concept of completed project with used utility poles defining parking the parking boundary and using straw erosion control tubes to check the flow



Plant native vegetation in the standing water area at the outflow side of the culvert on Quiroga Avenue

PURPOSE:

Mitigate hazard of standing water with mosquito larvae in the Park. Provide a small habitat for interesting wildlife in the Park. Help storm water control. Improve the aesthetic of the area.

METHOD OF IMPLEMENTATION:

Volunteers will clear litter from the area and plant native bushes and grasses with a rock boundary definition.

COST:

Plants will be donated and all labor will be done by volunteers. The cost will be nil.

NO FUNDING SOURCES NEEDED

COMPLETION DATE:

No later than January 30th to capture any winter rains we may get.



Photograph of the standing water area at the base of the culvert on Quiroga Avenue



Artist's conception of the completed planting project in the standing water area of the culvert base on Quiroga Avenue

Crate swales and humps on downhill slopes of several trees in the park and mulch the area of the tree to the tree's drip line and do a swale and hump along the Naugle Avenue edge of the Park.

PURPOSE:

Control storm water and irrigation water providing better absorption to tree roots. Eliminate the need to mow near the tree. Keep irrigation and storm water inside the boundaries of the Park.

METHOD OF IMPLEMENTATION:

Volunteers using flat shovels will scrape the soil uphill and downhill from trees to catch water inside the drip line of each tree on a slope. Mulch will be added to each swale to prevent grass and weed growth and improve soil water absorption.

A small swale will be dug by volunteers inside the curb on the Naugle side of the Park avoiding damage to the sprinkler heads.

COST:

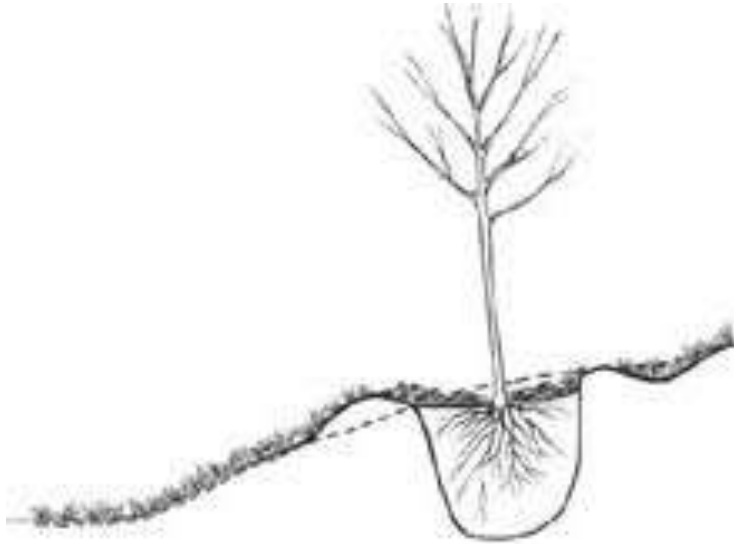
Up to \$200 in mulch

FUNDING SOURCES:

Private donations of tools and mulch unding and the Patagonia Park Fund

COMPLETION DATE:

No later than June 1, 2012 to take advantage of monsoon rains



Drawing of swale and hump

Outline of Goals for Park Preservation and Improvements from Summer 2012 to Summer 2016

- A. Phase Two projects from June 2012 to June 2013
 - a. Add gutters to the gazebo
 - b. Evaluate effectiveness of storm water controls in place
 - c. Replant vegetation and mulch trees in the Town Hall area
 - d. Build more gabion benches as needed
 - e. Continue pruning, workshops, and maintenance

- B. Phase Three projects from June 2013 to June 2014
 - a. Consider adding tables and benches to the park
 - b. Complete the pruning cycle
 - c. Solicit suggestions from citizens

- C. Phase Four projects from June 2014 to June 2015
 - a. Continue pruning cycle
 - b. Evaluate lower end of park
 - c. Solicit suggestions from citizens

- D. Phase Five projects from June 2015 to June 2016
 - a. Re-evaluate effects of previous projects