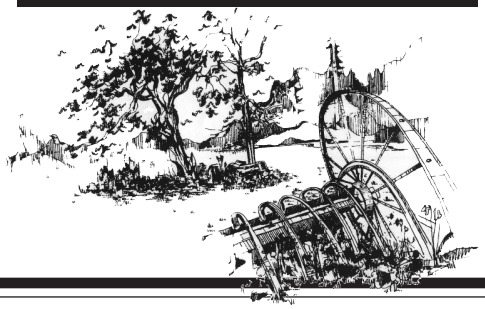
WINTER 2015



Barron Park Association Newsletter

PRESIDENT'S MESSAGE

Markus Fromherz, BPA President

You have in front of you another newsletter full of interesting information about Barron Park. 2015 has been a year of growth for the BPA, with several new board members, new kinds of events for the community, and new and increasing activities around development and environmental issues. Just consider the recent Diwali celebration (our latest cultural diversity event) or the city council decision on facilities with hazardous materials (an issue that the BPA regularly participated in over the years) or the recent planting along the Bol Park path (for which the BPA even formed a committee this year).

All of this is made possible by your membership in the BPA and by volunteers who contribute their time and talents for their community. Both are important to make our association work!

Please consider doing the following for your neighborhood.

- If you are a member, renew now for the new year. If you are not a member, sign up today! Your financial contribution pays for this newsletter and supports many of our events and activities.
- If you have been a member for a while, volunteer! We always need help with events and on our committees.
- If you have volunteered before, join the board! Your voice and your expertise are nowhere as impactful for the community as on the BPA board. If you have an important issue you would like to champion, we are always open for your ideas and concerns. Or join if you just want to participate on a fun and productive board.

Think about it and take action before you set this newsletter aside! Send me an email if you can help.

I hope you participated in the recent BPA Meet and Learn survey. We had three successful Meet and Learn events in 2015 and asked for your favorite topics for future events. We got great responses from fifty people! Look for a new series of Meet and Learn events in 2016 on culture, food, health, travel, and more.

If you haven't come to a BPA Community Happy Hour before or in a while, join us. It's every third Tuesday of the month, 5–6pm, at a local restaurant. (They are announced on the BPA-News mailing list.) We regularly have 10–15 people and are always happy to welcome new folks!

I am pleased to be your President of the Board of the BPA for another year. I am also happy to welcome Jaya Pandey as Vice President for this coming year. Together with the rest of the board, we look forward to your ideas and your contributions as members of the Barron Park Association!

DIWALI REPORT

by Markus Fromherz

Dear Jaya and most excellent team of volunteers,

On behalf of the BPA Board, I'd like to congratulate and thank you for a fantastic Diwali celebration in Barron Park! Please convey our gratitude for all the hard and wonderful work that you all did to create an outstanding event. You drew a big crowd, you delighted them with fun and exceptional performances, and you engaged them with food and dancing. With your (and Lydia's) contributions, Barron Park is becoming an ever friendlier and funner neighborhood and also a model for the rest of Palo Alto. (Our mayor, Karen Holman, said so.) This is no easy feat!

Again, thank you and congratulations!

—Markus

PS: Thanks also to board members who helped, especially Gwen Luce and Lisa Landers.

INSIDE

Bol Park Pathway—A Brief History

by Richard Placone

From the Bike Path with Strawberry Hill to the North, Sep. 2009 (before construction) from Google Street Maps.

In 1974, through the efforts of residential leaders in the Barron Park community, and the generosity of the resident Bol family, Bol Park was created. Toward the end of the Bol Park construction, the Southern Pacific Railroad Company was persuaded to donate to the community the abandoned railroad right of way that ran along the western boundary of Bol Park from Hansen Way to Arastradero Road. This right of way was immediately incorporated into the Bol Park plans to become the Bol Park Pathway so much used by the community for recreational walking, by parents taking youngsters for a ride in their strollers, and bikers heading for trails beyond or commuting to school and work. The Bol Park Pathway may be one of the most highly used trails in Palo Alto.

As long time residents of Barron Park know, the entire community voted in late 1975 to annex itself to the City of Palo Alto, which included the park and the pathway. Since that

From Strawberry Hill Looking North, Sep. 2009 (before construction) from Google Street Maps.

Frank Crossman

Strawberry Hill looking north, Mar. 2015 (after construction started).

Frank Crossman

Community volunteers on planting day, Oct. 24th 2015.

Frank Crossman

View of VA construction project and new planting on Strawberry Hill Nov. 2015.

time, the city and the community, through the Barron Park Association, have collaborated in maintaining the park and adding community approved upgrades over time.

Disaster Strikes

One sunny morning in late October, a Barron Park resident was walking on the pathway to work, when she suddenly encountered what she saw as a disaster in the making—the mature California Live Oak trees, along with all other trees and shrubbery that bordered the pathway, but on the property of the adjacent Veteran's Administration Hospital, were being bulldozed and ripped out, leaving vast areas along the bike path open for the first time to vistas of the VA campus. Within a few hours, what was once an idyllic and bucolic environment surrounding the pathway, became a glaring scar. Shocked, this resident immediately returned home to report this disaster to family and neighbors.

And so began the formation of the Bol Park Bike Path Committee.

Neighbors Art Liberman, David Boxerman and Richard Placone grouped together to see what could be done. David and Richard set out for the VA campus, and once there met with the staff directing the construction project. They learned that what was taking place was a multimillion dollar expansion of the hospital, a project scheduled to be completed in about three years hence. VA staff were vague about the matter of the removal of the trees, but did explain that this was a necessary part of the project, since the loop road that circled the facility was being relocated to a point aligned close to the East side VA property line, which parallels the Bol Park pathway. This necessitated removal of the trees they were told.

Art, David and Richard decided that this was totally unacceptable. The mature oaks and other trees were now part of the huge piles of rubble accumulating on the VA grounds. The three decided that surely some mediation was in order. While the VA did not involve the community in their construction plans, they would have to become part of any restoration effort.

Current Pathway Activities

Notices were sent out to the community calling for volunteers to form a standing BPA committee that would begin to work with the VA to develop plans to restore the environment along the pathway. Nine residents volunteered. The Palo Alto city manager's office was contacted with the result that Mr. Keene assigned one of his chief assistants—Khashayar Alaee ("Cash") to work with the new committee, promising full city cooperation as the committee's work progressed. In addition, the VAH administration assigned Ronald Bochenek, Eunice Tokada and Joanna Fong to work with the committee as well. Working through the BPA, the committee learned that the Barron Park community had been informed about the project in an earlier posting in the BPA Web Page. (VA Construction and the Bol Park Bike Path Area, November, 2014.)

Much has been accomplished since the committee's work began last fall. The city's Landscape architect, Peter Jensen, met with the committee several times, walked the pathway with committee members, and met with the VA staff to review the construction and landscaping plans. This activity has paid off as follows:

1. Peter has prepared a complete landscape plan for the entire length of the pathway adjacent to the VA property. His work has included placement of flags along the path indicating which species of plant goes where. Most plants are native to California and drought resistant once established. October 24, 2015 was designated planting day. The city provided all plant material, machinery and staff to dig all the holes and provided the planting mulch. A large contingent of Canopy staff and 60 volunteers from Canopy, Barron Park and other neighborhoods turned out to do the actual planting. The VA is providing the initial irrigation for two years at no cost to the community.

2. Cash and Peter, working with the VA staff, successfully persuaded the VA to modify its landscape plans to meet the committee's wishes regarding the external finish on the retaining wall, and to expand its landscaping plans to complement the landscaping on the city's side of the property line. As a result, in time the landscape environment along the pathway will not only be restored, but improved over what was there before the construction project began.

The next phase of this committee's work will begin after the first of the new year. While undertaking the work outlined above, committee members noticed while on site, that there was a significant amount of use of the path. So, while the committee will continue to look at ways to improve the natural physical environment of the pathway, we will also investigate ways to enhance the experience of all those who use it. The popularity and usage of the pathway has increased well beyond what those who designed it years ago envisaged, and some members of the neighborhood have expressed their concerns about safety for both pedestrians and cyclists. In its present state, pedestrians and bikers use the same right of way, which is narrow by today's standards. Resolving this will require involving the bicycling community and the City of Palo Alto to examine feasible solutions, possibly including physical modifications to the paved pathway. Those of you in the Barron Park neighborhood with suggestions about this should contact me or any other member of the committee. Persons wishing to join the committee as it begins the next phase of its work, are invited to contact me.

This brings the project up to the present. The committee wants to thank all residents of the Barron Park community for both volunteering to be on the committee and the planting day, the city and VA staff, as well as Canopy and Acterra members who have been very helpful in all of the committee's endeavors.

Richard C. Placone, Chair (*rcplacone at sbcglobal.net*)

Committee Members:

Art Liberman, Cedric de la Beaujardiere, Claire Elliott, David Boxerman, Frank Crossman, Lynnie Melena, Markus Fromherz, Peter Mueller

Khashayar Alaee,—City of Palo Alto

Ronald Bochenek, Eunice Takuda, Joanna Fong—VA Hospital

Palo Alto Weekly article ran Nov. 29, 2015: Stewards of Bol Park path give it new life *http://www.paloaltoonline.com/news/2015/11/29/stewards-of-bol-park-path-give-it-new-life*

BARRON PARK ASSOCIATION NEWSLETTER

Barron Park Association
724 Barron Avenue
Palo Alto, California 94306

EDITOR
Nancy "Jo" Hamilton,

ASSISTANT EDITOR
Myrna Rochester

DESIGNER
Patrick Coyne

PROOFREADERS
Bob Cook, Gwen Luce

CONTRIBUTORS
Markus Fromherz, Douglas L. Graham, Art Liberman, Lynnie Melena, Jaya Pandey, Richard Placone

A Turning Point: CPI and Zoning of Extremely Hazardous Materials

By Art Liberman

The City Council meeting on November 16th represented a real turning point for the Barron Park residents who live close to the Stanford Research Park. For the past decade, they have been appealing to City of Palo Alto officials to come to terms with the zoning lapse that had allowed CPI (Communications & Power Industries) to reconstruct its plating facility and increase its stock of extremely hazardous materials without consulting or even notifying the neighborhood.

The issue has taken a long time to resolve. But finally our City government officials, both Staff and Council, recognize that having allowed this facility to be located so close to homes was, in hindsight, an unwise decision. The City Council action validates residents' long-standing position that the current situation poses a risk to nearby residents, is incompatible with good zoning standards and current zoning practices, and needs to be changed. The Council agreed to a plan proposed by the Staff and voted to take action.

Background

Up until 2006, residents were largely unaware of the activities at CPI, of the large amounts of extremely hazardous substances or their location on the CPI site, just over the fence from some residents' homes. They were aware of some construction activity, but not that the CPI plating shop was being reconstructed with even more hazardous material being added. Then, in February of that year, toxic nitric acid fumes released in an industrial accident wafted over the neighborhood. At that moment, residents living near CPI realized that the consequence of a more serious accident could endanger their health and welfare.

A number of Council meetings have been held on the topic over the years. Each time residents' arguments were met with a flurry of reports by CPI and their consultants declaring their operation to be absolutely safe, even though two more releases of hazardous materials occurred in 2008 following the one in 2006 that triggered the residents' concerns. The outcome of those Council meetings was to authorize more studies, reports, and investigations by Staff and by independent consultants. The years ticked by; the work was tedious and always more time-consuming than the Council had estimated.

At the Council meeting in October 2014, the Council came close. Staff proposed to change the zoning to make plating shops like CPI's a non-conforming use within 300' of residences (see article "*Progress, but Obstacles Remain*" in the Winter 2014 issue of the Barron Park Newsletter). The Council supported the idea of an ordinance to change the zoning, but wanted a proposal based upon the types and amounts of chemicals, not on their method of use.

Staff Proposal

The Staff disclosed their proposal at a community meeting at Barron Park School in October. The first part of the new proposal would create a new category or 'Tier' in the ordinances governing hazardous materials use, to cover **toxic, highly toxic and extremely hazardous substances** (called Tier 2), which are identified in California and EPA regulations. It would apply to all sites in industrial zones if they are located within 300' of "sensitive receptors" (code words for residences, schools, day care centers, etc.) and if they have those materials in amounts large enough to require them to send reports of their chemical inventories annually to the Palo Alto Fire Department.

If the first part of the proposal is approved, the hazardous material operation in the CPI plating shop and several other buildings would become 'non-conforming' to the zoning code. This would give the City the authority to phase out those uses in those buildings over a reasonable time period, long enough to allow CPI to recoup the full value of its capital investment, a procedure called **amortization**. A few years ago, the City conducted a study to determine the amortization time for the CPI plating shop and concluded that CPI would recoup its investment in 20 years from when the

Help Support the Barron Park Donkeys!

Photo by Bernard Andre

All those who care about Perry and Niner seek to guarantee their proper on-going care and shelter, as well as to ensure that funds will be available for health concerns as the donkeys age. The handlers hope that those generous neighbors who have contributed in the past will consider increasing their support this year. Contributions for the donkeys' care may be sent to: The Palo Alto Donkey Project, ACTERRA (Action for a Sustainable Earth), 3921 East Bayshore Road, Palo Alto, CA 94303-4303. The check *must* be made out to "ACTERRA-Palo Alto Donkey Fund." All of the above must be included.

For further information about making a contribution on behalf of the donkeys, or if you would like information about how to become one of the volunteer donkey handlers, please call Steven Parkes (650) 918-6768 or email at *smparkes at smparkes dot net*, or go to *BarronParkDonkeys.org*.

reconstruction of the plating shop was completed, which was in 2006. So, the Staff proposal included a second part, which would implement the amortization of the plating shop according to that schedule. This means that by 2026, the current CPI plating shop would have to be shut down.

Council Meeting

The Staff proposal was exactly what the Council had been seeking. At the conclusion of the discussion, the Council voted unanimously, on a motion by Councilmember Greg Scharff, to follow the Staff's two-part recommendation.

True to form, at the Council meeting before the vote, CPI trotted out a bevy of consultants and lawyers, along with some employees (including the CPI President, Bob Fickett), to argue against the proposal and to stress the safety of their plating shop activities. But no safety program can ensure, with complete certainty, that mistakes won't be made, that equipment won't fail, or that natural disasters won't occur. While residents don't doubt CPI's stated emphasis on safety, and in fact support all their initiatives in that regard, the proximity of the plating shop to residents completely changes the equation.

Samir Tuma and Art Liberman both spoke of accidents involving hazardous materials where officials had allowed the facilities to be located very near residences. The only way to ensure the safety of nearby Barron Park residents is to put a substantial distance between them and the extremely hazardous materials in the CPI plating shop. Councilmember Burt, who had been skeptical of previous Staff proposals, seconded the motion from Councilmember Scharff, saying that he himself would not want to 'be over the fence' from CPI.

Romola Georgia delivered a stirring talk that summarized the frustrations of residents over the past years, raising the many residents in attendance to their feet to show the Council their support of 'ridding the neighborhood of toxics.' Indeed, the community has been united, and this turning point would not have happened without the persistence and engagement of residents who wrote letters, appeared at Council and PTC (Planning and Transportation Commission) meetings, created a website, met with City staff, circulated flyers, spoke with their neighbors, and spent many hours researching the issues.

Wider Community Support

The Barron Park Association also sent a letter to the Council in support of the local residents. Over the past decade, the BPA has consistently supported the efforts and actions of the Barron Park neighbors of CPI. The suggestion of using amortization as a method of legally resolving the hazardous material issue over time came from then BPA President Lynnie Melena in 2010. In 1985, following a fire in the plating shop in what is now CPI (it was then Varian) serious enough to require the evacuation of nearby businesses, the BPA organized a large emergency exercise for our neighborhood of a (simulated) toxic gas release.

What Happens Next

The Council directed Staff to draft the two ordinances. The drafts will go first to the PTC and then back to the Council, possibly as soon as February, for final action.

The length of the amortization period is a point of contention; the question is not whether CPI will move its plating shop, but when. CPI disputes the City's study. They have stated that the plating shop in its present location is integral to their manufacturing processes and would only agree to move it in 2052, which coincidentally is the date of the termination of their lease for the property. The City Attorney acknowledged during the Council meeting that CPI may file a lawsuit and take the City to court.

CPI has not indicated what it might do next. On the one hand, the 300' separation from residences in the ordinance would permit CPI to build a new facility on their site, allowing them to stay in Palo Alto, and the amortization provision would give them another 10 years until 2026 before needing to complete the changeover. However, Mr. Fickett told the press (quoted in the *Daily News*, Nov 20, 2015) that there is "a good chance that the company would have to close the entire location if hazardous material use is phased out." So it is possible that the turning point could become a tipping point for CPI.

EMAIL LISTS

The BPA has four email lists: bpa-news, bpa-issues, bpa-misc and bpa-jobpostings. They are hosted at Google Groups. To join, go to the BPA Website: *BPApaloalto.org* and click on the tab "BPA Email Lists." This provides an easy means to subscribe, and information about the lists.

The End of Creek Flooding in Barron Park?

By Douglas L. Graham, Barron Park Historian, with significant input from Doug Moran

A Strange Noise in the Night

Boom!...Boom!...Boom! Low pitched and very loud booms awoke me at about 12:30 a.m. on the night of January 23–24, 1983. A winter storm had been lashing Northern California with wind and exceptionally heavy rain for several hours, following steady rainfall all afternoon. Before going to bed, I had watched Matadero Creek in my back yard rise from four feet deep at supper time to six feet, then eight feet. Now I was shaken awake by the thunderous booms at regular intervals of about five seconds. What was going on? The rain was coming down in sheets. A quick look at the creek by flashlight showed the racing brown water to be about 11 feet deep in the 14-foot channel. The water was full of debris, including large tree branches, and was racing past at sprinting speed.

A Stationary Wave Caused the Booming

The booming noise seemed to be coming from the direction of the old railroad bridge, about 150 feet upstream. I walked up there and found that the water had formed a "standing wave" which was regularly reaching high enough to slap the underside of the bridge decking—hence the big booms. It was quite an unusual "alarm system."

A Violent Storm Cell Caused Flash Flooding

We learned later that a violent storm cell had parked itself over the small watersheds of Matadero and Barron Creeks and unleashed a torrential downpour for about five hours. This caused flash flooding of more than 90 acres of Barron Park, plus other extensive areas of Palo Alto between El Camino Real and the Bay.

A Flood Control Project Protects Us Now

The ultimate result of this flood was the construction, about a decade later, of a massive flood control project that is expected to prevent future floods from the creeks up to and including the "100 year flood." So our neighborhood is now protected—we believe.

A Long and Strong Tradition

The story begins long before that flood. The neighborhood has had a long and strong tradition of community action, of watching out for threats to our environment and way of life, and of standing up to government when it is the threat, while persuading it to help us when needed. In 1932, when the state highway department planned to dig an enormous "borrow pit" in the Maybell Tract, a delegation traveled to Sacramento and met with Governor Rolph in a desperate attempt to stop it. In 1947, led by Matadero Avenue resident David Packard, we persuaded the Palo Alto Unified School District to build Barron Park School. In the 1960s, our fights against muffler shops, adult bookstores and so-called "massage parlors" on El Camino Real, and creeping encroachment on our R-1 zoning by developers of apartment complexes, resulted in Barron Park being allowed by the county to draft our own General Plan. In the late 1960s and early 1970s we planned and created a community park (Bol Park) and persuaded the county to set up a special taxing district in Barron Park to pay for it. In the period 1955–1983, flooding from our creeks seemed to become a major problem, and this article is the story of how the neighborhood dealt with it.

A History of Repeated Flooding

This paragraph is reprinted from my story in the Fall, 2008 issue of this newsletter:

"A bare listing of the years in which there was recorded flooding in Barron Park is impressive; 1940, 1941,1945, 1951, 1952, 1955 (December 22–26, the infamous "flood of the century"), January 1956, 1958 (twice —March and April), February 1962, 1968, March 1973 and finally 1983 (twice—January and February). This is at least 14 flooding incidents in 44 years, or about once every third year on the average. The April 1956 county report on flooding from Dry Creek (Barron Creek) refers to "particularly severe rainfall in storms of 1940, 1945 and 1955."

Responses to the Flooding

There is a rich record of Barron Park requests for help with the flooding problem in the 1950s and the governmental responses (or lack thereof). There were many ideas bruited about, including a "high dam" on Matadero Creek to create a flood control reservoir in the valley where the intersection of Page Mill Expressway with I-280 is now. However, the focus soon shifted to fixing the problems with Barron Creek that had caused the worst of the flooding in 1955.

Barron Creek—Were Private Bridges the Main Problem?

In 1955, Barron Creek was in an open ditch all the way from where Gunn High School is now (then the Stanford pastures) to El Camino Real. There were more than a dozen wooden bridges for private driveways spanning the open channel, some of them dating from the 1920s and quite rickety. Several were swept away in the 1955 flood and piled up against a stronger one that held up, near the intersection of Orme Street and Los Robles Avenue. This de facto dam caused the creek to over bank there. Most of the Encina Grande Tract and areas on both sides of Los Robles to and beyond El Camino were flooded. So an obvious solution was proposed: Put the Laguna-to-El Camino stretch into an underground culvert and forbid private bridges above Laguna. This was done in 1958 (with one exception) and it was thought that the problem was solved.

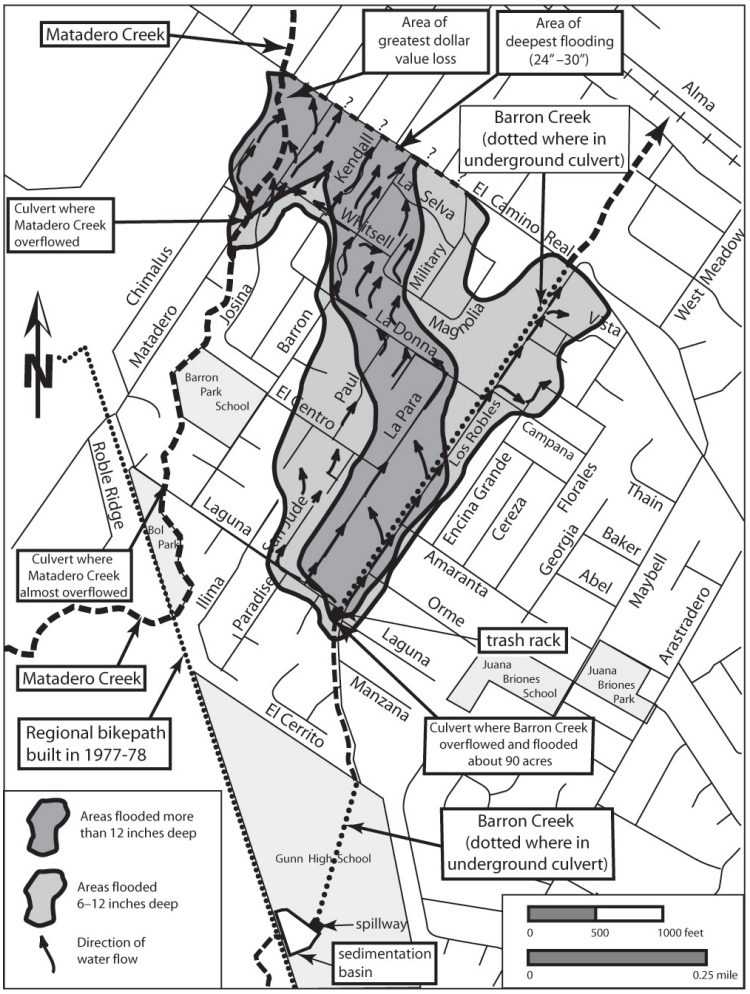
But it wasn't. A five-foot concrete pipe culvert was installed in 1958 and declared to be adequate to handle a "50-year flood" which has a 2% chance of occurrence in any given year. But the estimate of the potential flood magnitudes was way off, and the culvert proved inadequate in a minor flood in 1962, which had flood flows far smaller than a 2% flood. However, the real crisis came in the big flood of 1983. Barron Creek over banked again at the culvert intake at Laguna Avenue and this time flooded a large part (at least 80 acres) of the neighborhood.

Matadero Creek—Dithering Produces Nothing

So much for Barron Creek. Matadero Creek had less attention given it. During the 1960s and 1970s, nothing was done to prevent a repeat of the 1955 flooding. If you are interested in the details of that flooding, read my account of the O'Connor family's experiences in the creek story in the Fall 2008 newsletter. The problem was that there was no real consensus on what should be done with Matadero Creek, either among the Barron Park residents or among the county flood control staff. After much dithering, discussions petered out—until the mini-flood of 1973.

Matadero Creek—Was Erosion the Main Problem?

The flood of 1973 was an early March event. Occurring during the night (as usual), the flood barely missed overbanking at both the Laguna Avenue and Matadero Avenue bridges. It tore along the creek channel, ripping soil from the steep creek banks on the outside of most of the bends. The worst



Map 1: January 1983 flood in Barron Park

Adapted by Patrick Muffler in 2006 and 2008 from the map prepared by Doug Graham in 1983 (see http://www2.bpaonline.org/Creeks/Maps/flooding-1983-01-map-big-dgraham.jpg)

damage occurred just below the old railroad bridge (where the bike path bridge is now) on the lots at 996, 984 and 972 Ilima Way three lots in a row. The old bridge abutment was on the outside of a major bend, and it acted like the nozzle of a hose aiming and intensifying the flow against those lots. (Journalistic candor here: 984 is my property and I had just moved in. Our lot lost approximately a quarter of our back yard, which went dashing down to the bay.)

Moreover, there was damage to lots on Laguna Avenue, La Calle Court, Barron Park School and several lots lower down all on the outside of curves in the creek or just below them.

The 1970s Creek Committees

After the March flood, we organized Citizen's Creek Committees, separate ones for each creek, with Bob Moss chairing the Barron Creek committee and me chairing the Matadero Creek committee of 59 creek bank residence owners. For the next five years, the Matadero committee worked with the Santa Clara Valley Water District (which had taken over flood control and creek responsibilities from the county) to find solutions to the flood erosion and the down-cutting of the creek bed that was also occurring. For the erosion, several significant bank protection projects were carried out on various properties (nothing was done on my property). Specifically, the brand-new Bol Park was protected in several places with concrete filled sandbags, which have proven successful right up to today.

Several stretches of the creek had been down-cutting rapidly. For instance, at my property in 1972 the creek bed was 11 feet down from the top of the bank, but by 1975 it was 14 feet down—three feet of down cutting in three years. To stop this, "levelers" (mini dams of concrete-filled sandbags) were installed at intervals to stop the down-cutting of the creek bed. They worked surprisingly well.

A Failed Flood Prevention Project

The major project, however, was the widening and straightening of the culvert under the Matadero Avenue Bridge built in 1929. This enlarged culvert was designed to accommodate the estimated "100-year flood," which has a 1% chance of occurrence in any given year. But again like the case of the Barron Creek culvert, the estimate was way off. The sad story was the same. In 1983, a "20-year flood" (5% chance of occurrence in any given year) occurred, and there was serious over banking onto the local streets. The culvert would have had to have been rebuilt again, had it not been for the eventual construction of the Matadero Creek Bypass underground culvert, which made capacity of the Matadero Avenue Bridge moot.

"Biggest El Nino Ever"?

1982–3 was an El Nino year—the strongest one on record until this year (2015–6), which may be stronger. And 1983 was the second very wet year in a row (the two-year period 1981–2 and 1982–3 is still the wettest 2-year period on record). In early 1983, rainfall records were broken widely in Northern California, and the mudslides were the worst on record. At Love Creek in the Santa Cruz Mountains, an entire neighborhood was entombed forever under hundreds of feet of mud, rocks, redwood trees, vehicles and houses including all their occupants. The Sierra got a heavy (but not record-breaking) snowpack, and there was extensive spring snowmelt flooding in the Central Valley, especially from the Tracy area to north of Yuba City. San Jose was extensively flooded by the Guadalupe River and Coyote Creek. Most reservoirs overflowed and the entire flood flow went down the spillways.

The BIG Flood of 1983

The worst local (Palo Alto) storm occurred on the night of January 28–29. "Torrential" rain occurred in both our creeks' watersheds from dusk on the 28th to about 3:00 a.m. on the 29th. Flash floods on both creeks overbanked into the streets. Structures on more than 90 Barron Park properties were flooded. Significant soil erosion took place on more than 44 properties. The worst flooding was on the 500 blocks of Kendall and Barron Avenues (the first block west of El Camino Real). See Map 1, the 1983 Flood Map.

Driving and Walking the Flood

I began this story by telling you of the "booming" that woke me up at about 12:30 a.m. on the 28th, and relating that I found it to be caused by a standing wave that was reaching up and slapping the bottom of the bike path bridge deck. After making this interesting finding, I walked back to my house, wading through about six inches of clear water covering Ilima Way and running fast toward Laguna Avenue.

Storm Drains Automatically Closed

There was no way for that much water to get into the storm drains any time soon. I found out later that the water level in Matadero Creek was already high enough at that time to close the flap valves on the storm drain outfalls to the creek. Doug Moran wrote a good description of what was happening in the storm drains on Ilima Way and throughout Barron Park: "By design, the storm drains had stopped working. (They) empty into the creeks and when the water gets too high, a flap automatically shuts. While this causes water to (backup on streets and yards) it prevents that water from causing the creeks to overflow. In some circumstances,

the flaps also work to prevent back-flow up the storm drains into the neighborhoods."

I decided that I would check out the flood as thoroughly as possible so that I could report on it to the neighbors and the Barron Park Association the next day (I was still the BPA Creek Committee Chair). I had a VW camper bus with high clearance, so I chose to drive where possible. I walked where I had to.

Good News and Bad News

The first place I checked out was my back yard. The channel was about 14 feet deep and it was about 50 feet wide from my bank top to the opposite bank top in Bol Park. The water was about 3 feet down from the top, so it had a very long way to go before flooding my property. The situation I found at the Laguna Avenue Bridge was also good news. Not only was Matadero Creek staying in its channel there, it wasn't even close to overbanking. I thought, "Maybe this isn't going to be so bad after all."

The next checkpoint was the Barron Creek culvert at Laguna. Driving down Laguna, I found bad news—the entire street was flowing in my direction. The brown and roily flood water was speckled with small pieces of trash and other debris. I parked and waded to the culvert entrance. The trash rack was mostly free of large debris (small debris passes right through) and didn't appear to pose a problem. In the dim light from the streetlight coming through the dense rain (the downpour continued without breaks) I could barely see anything but there was enough light to see that the flood was also racing down Los Robles and it looked deeper than I wanted to risk driving the bus into. I wished that I had a waterproof camera with me but realized that there wasn't enough light and there was just too much water in the air, so photographs would probably have shown nothing but streaks and drops of water on the lens.

Following the Flood

I decided to follow the Laguna branch of the flood, which turned down La Para. As I slowly drove along, I decided I ought to make a record of the flood depths and flow directions. I had a small notepad and pencil, but the car was getting fairly wet inside from opening the door, and the paper was getting soggy and torn. I followed the flood down La Para to La Donna, where it turned left and then right at Barron Avenue. At this point the volume was much less than had left the creek at Laguna, and I realized that it had been flowing away between houses and spreading out. Still following the main flow, I turned right down Barron and soon came to where it was pooling. I parked and walked to the corner of Whitsell, where some of the water went right, some went left and most went straight ahead down Barron toward El Camino.

A Marooned Policeman

Straight ahead on Barron Avenue looked like the deepest water, but it was barely moving, so I waded on, towards El Camino. I could see headlights ahead of me even though the water was about three feet deep in the middle of the street. The headlights aimed toward me were on a Palo Alto police cruiser sitting dead in the middle of the street with its red and white emergency lights going around and around. I approached the car, wading cautiously in cold water reaching above my waist. The officer was sitting in the driver's seat with water up to his chest, yelling into a hand-held microphone, trying to reach his dispatcher on the radio. He asked me, "Where is all this water coming from?" and I told him about Barron Creek overbanking a half-mile away, but I didn't feel he was really interested in my answer.

More than Four Feet of Water in their Yards

Leaving the stranded and distracted patrolman, I took a good look at the houses in the 500 block of Barron Avenue, especially the ones on the north side where the yards were visibly lower than the street. It looked to me like there was more than four feet of water in several yards (510, 516 and 520 Barron). Most of the houses on that block had at least some flooding in the house, and I have heard that several of them have since been raised up as a requirement for selling them.

El Camino Real Served as a Dike

Most people never notice this, but bicycle riders can't help but notice that El Camino is higher than the level of the Barron Park streets that intersect with it from the west (our side). This means that water coming down those streets tends to pool against El Camino, which acts like a dike or dam. I believe that this is a natural feature, dating from a time when, during a global warm period, the oceans were about 36 feet higher than they now are. There was a natural beach line with sand dunes along the line where El Camino runs today. I have newspaper accounts of the various widening projects that slowly converted El Camino from a two-lane dirt county road to the six-lane metropolitan boulevard of today, and none of them mention extensive filling of dirt to build up the roadway (while the articles on building the Bayshore Freeway, by contrast, are all about the extensive filling operations necessary to raise the roadway above the surrounding marshes). I conclude that the "dike" was always there, and the road was built on it because it was high and dry in the typical winters when seasonal wetlands existed on both sides.

Where the Creeks Met and Mingled

I returned to my bus and decided to check the Matadero Avenue bridge culvert over Matadero Creek next. I didn't have to go far on Whitsell Avenue before meeting a flood flow coming south, from Matadero Creek that met and mixed with the Barron Creek flow that I had been following.

Sure enough, Matadero Creek was overflowing about eight inches deep across the Matadero Avenue Bridge. Most of the flow was going straight down Matadero Avenue toward the Flamingo Motel (now the Creekside Inn). Some of it, as mentioned above, was going south on Whitsell, then turning east on Kendall, flooding the 500 block with up to a foot and a half of water in several yards. It pooled in Kendall, but not as deep as in the 500 block of Barron. Moreover, a fair amount of water went north on Tippawingo and east on Chimalus to flood that street from 524 up to 650. From the end of Chimalus it entered the Flamingo Motel property and did some damage there.

Flash Floods Don't Last Very Long

It was now about 3:00 am and the rain was easing off some. I was soaked, cold, tired and ready to go home. I didn't realize until much later that my flood chasing had coincided precisely with the peak of the flood. The next day, Barron Parkers who lived on streets that were not flooded got up and went to work and about their business as usual. By dawn, the streets were open, the water had (mostly) drained away, the storm was gone, the sky was blue and it was a beautiful day. On the non-flooded streets the only signs of the flood were unusual amounts of leaves and other tree parts. This lack of visible damage led to some political disagreements later on when the flood project was being proposed, as many people had to be convinced there had BEEN a flood, and that it had done serious damage.

Proving it Happened

For about two weeks after the flood, I did little else but work on fact finding. The morning-after responses, including the unbelievers and nay sayers, convinced me that we needed to take a written survey of residents in the areas that I already knew had been flooded because I had personally seen and felt the floodwaters. I wrote a three-page survey covering flood depth and direction of flow at their properties, as well as water and erosion damage, and help received from government agencies (there wasn't any). I then tested it on several flooded residents, ran it by the BPA Board, made copies and distributed it by hand to about 90 residences. I got

59 responses—a 2/3 response rate. The data plus my experiences enabled me to make a detailed map of the neighborhood showing street flood depths with 12-inch and 6-inch contours, and arrows showing flow directions on the streets and on many properties between streets. (See Map 1, Flood of 1983).

Flood Stories and Life-Changing Moments

Several survey respondents had replied with personal anecdotes. Two stories stand out in my mind. A homeowner on La Donna woke up at about 3:00 a.m. with the feeling that something was wrong. He swung his legs out of bed to stand up and stepped into about eight inches of filthy brown flood water in his bedroom. Another person (a renter on Barron Avenue) found her garage about three feet deep with flood water, and realized that her nearly-completed book manuscript was ruined, along with years of research notes and backup papers.

No Photographs Equals No Flooding?

Apparently, nobody took photographs of any aspect of this flood, probably because almost everybody slept though it and the ones who were awake likely felt it would be futile to try because of the constant intense downpour. Many of them were frantically busy trying to protect their property. As mentioned above, by the time the sun was up, the flood was over and most of the floodwater had drained away. Unfortunately, the lack of photographic evidence was one of the most difficult challenges facing me and the flooded residents in our attempts to convince other residents that there had been serious flooding. Thankfully, we found the public officials to be more receptive.

HOW THE BIG PROJECT WAS BUILT

Working with the Local Government Agencies

By the time the flood waters receded, many Barron Park residents were ready to start thinking and talking about a flood control project or projects to prevent a recurrence. It had become obvious that the existing flood control structures were not adequate to prevent frequent floods with potentially very large property losses. The BPA knew that it would be a large challenge to get a project built that would protect the neighborhood without destroying the remaining semi-natural condition of the creeks, especially Matadero Creek (See Photo, Ducks in Matadero Creek).

The project called for a long-term commitment by volunteers who would stick with it long enough to develop a professional type relationship with the senior staff of the Water District, the City, and other agencies that would be involved in planning and managing the hydrological and structural engineering studies required, as well as the construction phase. It would require political sensitivity in providing useful citizen input to the various agencies involved. As the BPA Creek Chair, and a professional manager of large projects, I already had ten years of experience working with the staff and Board of Directors of the SCVWD as a citizen representative from Barron Park. I had also worked with the Palo Alto Public Works staff and with the city council, in several BPA roles (including former President) and in a SCVWD role as a member and chair of the Northwest Flood Control Zone Advisory Committee (Palo Alto city staff members were also members of that committee). I had complete support from BPA President John Joynt and the entire board. Thus, I was in a good position to exert leadership on behalf of the BPA and residents of Barron Park.

Getting a Project Started

The first job had been to gather the facts, and the second one was to convince the key government bodies, especially the SCVWD, that they should authorize a project in Barron Park. My flooding map and statistics from the survey were submitted to the SCVWD and to the City of Palo Alto about two weeks after the event. I then attended the SCVWD Board meeting and presented the map, data and stories of the flood. Staff was asked at that meeting to take a preliminary look at the situation and report back. During this time, Bob Moss took over the chairmanship of the BPA Creek Committee, which freed more time for me to work with the district and city. Bob organized a cleanup of the flood debris in Barron Creek before the next flooding threat, an event in March, 1983 that brought the creek within inches of flooding again. For the next fourteen years, Bob and I worked as a team to provide the citizen leadership necessary to push the project through the planning, funding, approval and construction phases.

Known and Unknown Complications

Early on in the project, we learned of complexities in the situation, some expected and others unknown to us. The first principle that had to be followed was above all "Do no harm." We could not fix the Barron Park flooding problems without first fixing the downstream flooding on both creeks. To do so would have been unethical because it would, by increasing the peak flood flows, make the downstream flooding worse where it had occurred and likely would extend flooding to areas that had not flooded before. This, besides being wrong in itself, would open the water district to lawsuits from the citizens suffering the enhanced flooding. OK, we sort of knew that before getting started with this. But we didn't realize that a third creek would have to be involved. The second principle, a matter of SCVWD policy, required that flood projects be designed to handle the "100 Year," or 1% Design Flood, the flood of a magnitude such that there is a 1% chance of occurrence in any given year.

Three Creeks and a Flood Basin

The surprise was Adobe Creek. Although Adobe Creek had not flooded in 1983, according to SCVWD calculations it would flood at magnitudes much lower than the 1% flood. Therefore it had to be fixed also. The second surprise was that, because all three creeks emptied into the Palo Alto Flood Basin (often referred to mistakenly as the Palo Alto "Tidal Basin"), it had to be fixed also, as it was inadequate to handle the combined 100-year floods of all three creeks simultaneously. This may seem like stretching a point, but the three creeks have small, adjoining watersheds and it might well happen that all three would have 1% design flows at the same time. And, of course, following the first principle, the flood basin would have to be fixed first. Doug Moran commented "Storm cells are often small. The 1983 event produced flooding in Barron and Matadero, but not Adobe or San Francisquito Creeks. The 1998 flooding of San Francisquito was from a storm cell centered on its watershed, but Barron and Matadero were just far enough outside that center that they didn't flood."

Photo: Ducks in Matadero Creek

The Hydrology Was Challenged

Both the BPA and the Friends of the Marsh challenged SCVWD's hydrological methods (and, by implication, their calculated 1% flood magnitude). An independent consulting firm was brought in and recommended a smaller 1% flood. The SCVWD staff challenged that. This caused a 6–12 month delay in the project.

A Public Uproar

The plan to fix the flood basin resulted in a political battle with environmentalists. It required raising the levee height in the Baylands, which in turn required a broader levee "footprint." This meant that the brackish marsh would lose several acres, a small percentage of its extent. The Friends of the Marsh and several other groups, loosely coordinated by Emily Renzel, became determined to stop the project in its tracks. Ms. Renzel was a former Councilperson and Mayor, and was extremely well connected with influential people in Palo Alto and in the broader environmental community. She had a fine reputation in the movement, and subsequently the city has named the marsh for her. One council meeting was dominated by the two groups with dueling speakers. Finally, a compromise was found by providing some city-owned but unused land to be added to the marsh to compensate, and the final loss of habitat was only ¼ acre. The delay was several months.

Adobe Creek Got the Priority

Besides the "do the downstream work first" principle, the water district could not do all this work simultaneously because of limited human and financial resources, so the creek work would have to be prioritized, and would have to be done in priority sequence. During the hydrological studies, it was determined that Adobe Creek would flood larger areas, with a higher total value of property at risk, than Matadero, and Matadero more than Barron. So that was the priority order. To some people in Barron Park and elsewhere in Palo Alto who got flooded in 1983, this seemed nonsensical, but the logic could not be faulted.

Public Input on Alternative Project Proposals

Meanwhile, the SCVWD prepared and presented alternative proposals for fixing Barron Park's problems. Public meetings were held at Creekside School (Barron Park School site) to get public input. The four proposals were:

- Do Nothing (given serious consideration)
- Straight concrete channeling with many trees and houses to be removed
- The reservoir idea (which made even less sense than before, since by this time the Old Page Mill Road dam site was no longer available; I-280 had been built and it would have had to be re-routed and a large bridge built)
- A bypass proposal to carry the full flow of both creeks (leaving the creeks dry)

The first three proposals were soundly rejected. There was some support for the fourth, but nobody wanted to see the creeks dried up.

A Conceptual Breakthrough

Back to the drawing boards the staff went, and came up with a breakthrough idea that saved the project. The breakthrough was the concept of diverting ONLY the HIGH flood flows from Barron Creek and combining them with Matadero Creek HIGH flows in an underground bypass channel. The "normal" low flows would pass down the regular creek channels undisturbed. This required some sophisticated design work on unique, specialized inlet structures for diversion and bypass culverts. The entire public input and design processes took two years.

25 Years before It Could Be Completed?

The next tasks were to develop rough estimates of the cost of the project, segment by segment, and to determine how to pay for it. At the then current tax rate in 1986, the SCVWD staff told us that the project could not be done until after 2010, 25 years or more in the future, with a probable occurrence of about eight floods in the meantime. This was clearly not acceptable to the people of Barron Park.

The Measure F Election

The SCVWD Board then voted to hold a county wide election to pass a parcel tax that would pay for the Barron Park project and several other critical flood control projects in our county. I wrote a supporting argument for the ballot Measure F to raise the parcel tax (referred to as a "benefit assessment"). It passed with more than 50% of the vote everywhere in the county, but by more than 2/3 in Palo Alto.

The Public Facilities Finance Corporation (PFFC)

In 1988, the SCVWD Board created the PFFC to help the SCVWD raise money, based on the assured parcel tax revenue. The PFFC Board was composed of three citizens. I was appointed to the Board, which elected me president of the corporation, a position I held until temporarily moving to Pennsylvania in 1997. By 1990, the PFFC had raised more than $40 million through two issues of Certificates of Participation (COP), which are similar to bonds. These funds were sufficient to pay for the project, and enabled the project to begin.

Final Design; Full Speed Ahead

In 1987–88, the final design was fixed. The flood basin had been enlarged and the work on it was completed. Work on Adobe Creek began in 1987. It looked like the project could proceed at "full speed ahead." Bob Moss recalls "…that when the original design of the bypass was done the design engineer rushed it through, and the normal verification design check wasn't done." This created major problems later on, as you will see.

Adobe Creek Work Hits a Snag

However, the work had barely begun on Adobe Creek when the project hit a major snag. In spite of an active campaign by the water district to involve the creek bank owners and solicit public input to the plans for the project prior to beginning work, some people apparently had paid little or no attention. Irate homeowners now objected vehemently to the height of the floodwalls to be built in their back yards, and to the extent of widening the channel on their stretch of the project. Once again, the basic hydrology was challenged and independently reviewed. Straightening this all out and making some minor compromises took much time and delayed our project another year.

Work Begins on Matadero Creek

In 1989, work re-commenced on Adobe and began on Matadero. The BPA and SCVWD continued to hold public meetings in Barron Park to present project updates and solicit public input on details of the project construction and plans for the post-construction period. Doug Graham and Bob Moss continued to be the lead people representing the BPA until 1997.

The Chimalus Crisis

In 1991, another controversy erupted on Chimalus Avenue, where neighbors suddenly realized that the bypass channel excavation was going to remove most of the trees that had grown up alongside the Stanford Channel that ran between their back yards and the Stanford Research Park. The Stanford Channel was an open ditch storm drain that came from campus, crossed the industrial park and emptied into Matadero Creek at El Camino Real. It drained a fairly large watershed and was one of the creek's largest tributaries. It was to be replaced with a very large (12'x12") underground bypass culvert. The de facto greenbelt that had grown up screened the industrial buildings from the residents' view. Their protests brought work temporarily to a standstill, but a settlement was reached when Varian Corporation agreed with Stanford to let SCVWD build most of the bypass on their land (under the parking lots). This controversy and its resolution delayed the project more than a year.

Bike Path Relocation

Meanwhile, planning, public meetings, and negotiations had proceeded on a troubling issue that had delayed approval of final plans for Phase 5, the critical reach from Barron Creek to Matadero Creek. The regional bike path was going to be destroyed by the excavation and construction of the underground diversion and bypass culverts. A suitable detour needed to be planned through the Gunn High School property, Bol Park, and the right-of-way from Matadero Avenue to the Stanford Research Park. This involved negotiations with the Palo Alto Unified School District, the City of Palo Alto, residents along Matadero Court, and representatives of several bicycle groups. It was more complicated to unravel than the Flood Basin controversy had been. However, a peaceful settlement was reached, and a "temporary" bike path detour route was approved (part of which ultimately remained after the project was finished, to become a "permanent" additional path).

Mickey the Donkey

When Bol Park was established and landscaped in 1973–4, the Bols' last donkey, Mickey, was moved across the creek from the Bols' house to the isolated corner of the house lot—the current "Donkey Pasture" owned by James Witt. The Barron Creek Diversion culvert construction was going to cut off public access to Mickey, and this became a matter of concern to many of Mickey's human friends, including the donkey handlers. Several proposals for ways to provide public access to the pasture were considered, but each was deemed impractical, and it was decided that the donkey handlers and veterinarian could be granted access to the work site to feed and care for Mickey. In the end, Mickey seemed stimulated by the construction proceeding right next to his pasture and developed new friends among the workers, so all was well.

More Surprises

By 1992, the plans for Phase 5 (Barron Creek to the Research Park) were ready for approval and the contractor was ready to begin work. Then more snags hit to prevent the work from beginning in 1992. The plans had included access through the Veteran's Hospital grounds for some of the construction traffic, primarily dirt hauling, and the VA objected. After lengthy negotiations, the request for traffic access was greatly reduced and a satisfactory compromise was reached with the VA.

Not related, but simultaneously, a Barron Park citizen challenged the basic analyses upon which the project design was based. A retired civil engineer, he asserted that the culverts would not provide protection from the 1% design flood. It was ultimately ruled that his criticisms were without merit.

These two issues together ate up another 6–12 months of the calendar and about $300,000 in extra staff time at SCVWD.

Haul 8,000 Truckloads of Dirt Along Matadero Avenue?

The next issue surfaced when our Matadero Avenue neighbors objected to the appalling prospect of more than 8,000 truckloads of dirt being hauled away from or back to the construction via Matadero Avenue. The hauling plan was later revised to have the trucks enter via the VA and exit down Matadero, rather than traveling both directions on Matadero, but the real breakthrough came with a proposal to leave most of the excavated dirt next to the construction site. This was dirt needed to backfill around the culvert and would otherwise have needed to be purchased and hauled in to the site. An agreement was reached between the SCVWD, the Palo Alto Unified School District and the contractor, and most of the dirt was dumped on the northeast shoulder of Strawberry Hill (the highest point on the bike path between the VA Hospital and Gunn High School). The excess dirt was smoothed to look like a natural part of the knoll. The requirement for hauling on Matadero Avenue was reduced by 91%—to 700 truckloads—and work could begin in 1994. Doug Moran was the key leader of the Matadero residents, and this began his long record of service to the BPA and the neighborhood.

Work Begins on the Diversion

Finally, in 1994, work began on the Barron Diversion and the intake for the Matadero Bypass—(which had been the original justification for the project) eleven years after the flood of 1983. For comparison, we landed a man on the moon only twelve years after the Soviets flew Sputnik. And, it took only four years to plan and four more to build Hoover Dam in a wilderness.

The Trailer Committee

The SCVWD expected that many small issues might arise during the work on Phase 5. Public input on the details would be valuable to prevent small issues from blowing up. They set up a regular biweekly meeting of the SCVWD supervising engineer, the contractor project management representative, a city Public Works staff representative, and representatives from the BPA. It met at the contractor's trailer office near the Gunn bike path, and we called it the "Trailer Committee." It met every two weeks through most of 1994–96. The BPA representatives were Doug Graham, Bob Moss, Dr. Inge Harding-Barlow, Art Bayce, and (later on) Doug Moran. The committee was very successful in settling several minor issues without having to call public meetings.

Construction Completed in 1996

Bob Moss wrote an excellent summary of the project in the winter 1996 issue of this newsletter, and I quote liberally from it. Bob noted that the project "…should prevent flooding and property damage during all storms up to and including a 100 year flood. Savings to the community are estimated at more than $5 million from moderate floods and more than $20 million from severe floods. Savings to neighborhoods farther downstream will be almost as much."

"The entire program took more than 10 years, and over $22 million, beginning in 1985 with improvements such as flood walls and widening of the Matadero Creek bed near the Baylands, moving upstream section by section. Bridges were raised, sharp curves in the channel were made gentler, and banks were stabilized. A major task was installation of a culvert under El Camino between the parking lots for Cibo (then Fresco) and Corner Bakery (then Sizzler) restaurants, which took almost a year and a half."

"The last 2 phases passed behind homes on Chimalus and McGregor, creating inconvenience, noise, dirt and dust. The bike path in Bol Park was closed for more than a year with bike traffic diverted along local streets. Use of Bol Park was difficult during construction, and it was hazardous to walk over and visit with Mickey. The construction finally ended in August and almost all of the park and bike path have been returned to their previous condition. Re-vegetation and landscaping began early in October (1996) and are almost finished along the bike path."

But the Project Could Not Be Used

Even after construction completion, the project could not be used for flood diversion from Barron Creek, and the inlet gates were deliberately blocked (partially) for another ten years. They were partially opened during the major El Nino event in 1998, when San Francisquito Creek flooded much of north Palo Alto with considerable property damage, and Barron Park narrowly escaped flooding.

Why were the Gates Blocked?

Christian Kalar, the new BPA Creeks Committee Chair in 1997 (he is still the Chair in 2015) wrote a good summary of the new problem, in the winter 1997 issue. "In the late summer of this year (1997), the Santa Clara Valley Water District was told of an error discovered by FEMA in their design review of the project. Back in 1988, when the bridge over the Matadero Creek channel at Louis Road was designed, there was a miscalcula-

tion, and consequently, it could handle only a 50 year flood (rather than a 100 year flood)."

A Manifestation of the Law of Unintended Consequences

Christian noted that, "If the water at Louis Road were to rise and touch the bottom of the bridge, there would be a chain reaction, causing the water to back up at each bridge and overflow at Waverly (suddenly, and with much force)…According to the SCVWD, water has never overflowed at the Waverly Street Bridge, thereby placing the SCVWD in a peculiar legal situation since they reduced a flood hazard in one area but created one in another."

Christian went on to write that, since part of the water that would flow in the Matadero Creek Bypass culvert during floods would originate from Barron Creek via the diversion culvert, the SCVWD has decided to solve the problem by blocking part of the diversion inlet structure, thereby reducing the Matadero creek flood flow but increasing the chance of flooding on Barron Creek. The result is 20 year flood protection on Barron Creek and 100 year flood protection on Matadero. They called this "the 20–100 option." The ironic point of this situation was that there were only about 25 houses (previously not listed as being in the official flood zone) that then would be in danger of flooding, while a flood on Barron Creek would endanger hundreds or even 1,000 homes.

El Niño Challenged the Flood Control System

Christian reported in the spring 1998 issue that "…Well, El Nino delivered a powerful punch and the new creek diversions worked! The storm of February 2–3, 1998 was at least a 25 year flood. Remember that the flood of 1983 was (only) a 17 year flood, so Barron Park…definitely benefited from the new flood control project."

Prior to the February storm, the January 24–25 rainy period had revealed that the flood gates at the Matadero Bypass inlet structure were not working correctly, and their functioning was even worse in February. The gate at the Barron Diversion had to be operated manually with a winch, which broke.

Shaving it Close

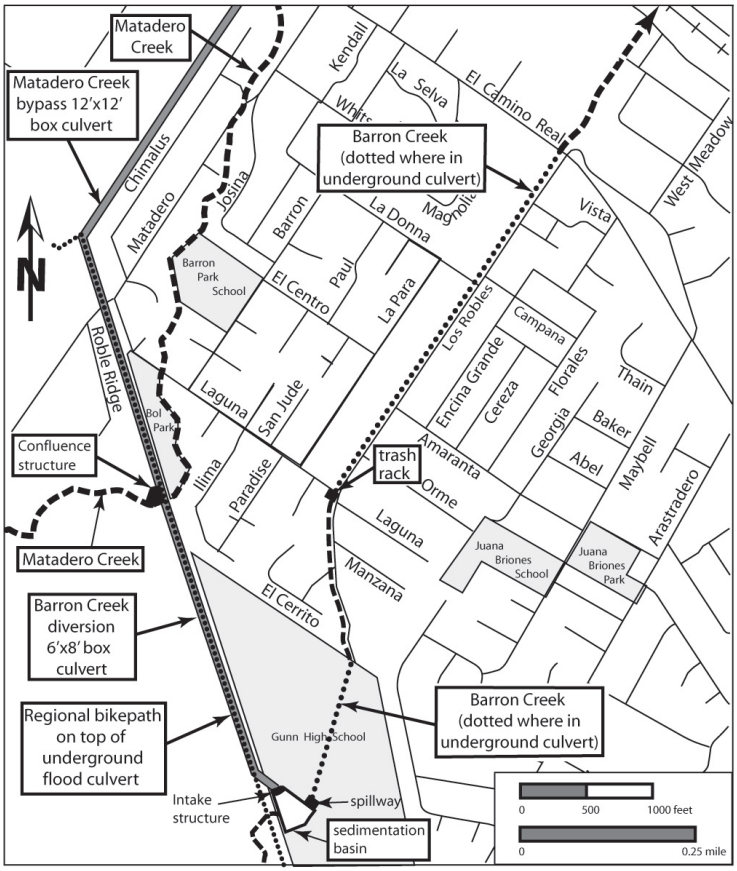
Doug Moran wrote: "I was the leader in getting the Barron Creek shutoff gate to be open by default and shut only when needed, and this was the primary factor in the Sedimentation Basin not overflowing badly in (the February storm). The SCVWD kept the gate open to the last possible moment (longer than their policy called for) resulting in the overtopping of the basin to be shallow and not deep enough to reach houses. By delaying, waves on Matadero Creek were touching the bottoms of the bridges nearest the Baylands. The policy had been to close the gate earlier to provide more of a margin for error."

The BPA Creeks Committee spent the night of February 2 patrolling the creeks and removing logs and limbs that were wedging under the bridges in Barron Park. The end result, however, was that both creeks escaped flooding (Barron very narrowly so).

The Remediation Project

By the summer of 1999, the SCVWD staff had determined what needed to be done to correct the project. The Northwest Flood Control Zone Advisory Committee recommended $13.2 million worth of "fixes," and the SCVWD Board approved funding for the remediation project's planning and design to be included in the 2000 budget. Doug Moran and Bob Moss spoke on behalf of the BPA at the SCVWD Board meeting. On June 10, 1999 the SCVWD held a public outreach session at Cubberly Community Center to present details of the new calculations of creek flow and channel capacity requirements. The design was planned to be done by October 2000, the construction contract to be awarded by January 2001, construction to begin in April and most likely completion by December 2002.

As of the next report available to me, which appeared in the winter 2002 Newsletter, there was still major work to be done on the project, including modification of floodwalls between Alma Street and Highway 101, and complete replacement and raising of the Louis Road bridge as well as channel modifications under the bridge. Construction was likely to take two seasons to complete, so 2003 was the likely year of completion.



Map 2: Barron Diversion and Matadero Bypass Project, 1984–2006

After the 1983 flooding, it was obvious that a major flood control project was required to protect Barron Park and downstream areas from frequent floods up to the magnitude of the "100-year" flood.

First the Palo Alto Flood Basin's capacity had to be enlarged so that the increased flood flows from the three creeks would not flood the Bayshore neighborhoods. Adobe Creek had to be fixed second because the damage potential from it was greatest. Finally Barron and Matadero Creeks were fixed in a joint project. Construction in Barron Park proceeded in 1994–95.

Unfortunately, the 100-year flood flow for Matadero Creek had been underestimated, so the new Diversion/Bypass Structure could not be fully realized until remedial work was done on lower stretches of Matadero Creek. The project was finally completed, and, in 2006, FEMA removed Barron Park from the 100-year flood map.

Remediation Construction Completed by 2004

Christian Kalar edited a SCVWD report for printing in the spring 2006 BPA Newsletter. He noted that all construction work on the Matadero Creek channel was completed by October 15, 2004. Some of the floodwalls had to be raised to a height of seven feet in residents' back yards. This was one of the most sensitive issues for the Palo Alto Community.

A "Risk-Based"Analysis Procedure

Taking the advice of a consultant, the SCVWD followed a U.S. Army Corps of Engineers risk-based analysis procedure. The consultant performed thousands of hydraulic runs (simulations) using random combinations of flow and channel friction factors, and determined that the modified channel would pass the one-percent event (the 100 year flood) with 95 percent reliability. FEMA accepted the procedure as valid and issued a

[CONTINUED ON PAGE 14]

How the Barron Park Flood Control Projects Work

Summary

Flood flows in Barron Creek are picked up at the Sedimentation Basin and channeled into the 6'x8' box culvert under the bike path (see Map 2: Flood Control Projects). This is known as the Barron Creek Diversion Channel. The culvert extends to and crosses Matadero Creek on a combined bike path-flood culvert bridge. Meanwhile, flood flows in Matadero Creek are picked up in a structure adjacent to the bridge, mixed with the water diverted from Barron Creek, and released into a 12'x12' underground box culvert which runs under the bike path to the Research Park. This is known as the Matadero Creek Bypass Channel (it bypasses the semi-natural stretch of the creek past Bol Park and through the neighborhood). Water from the Stanford Channel is added at this point, and the combined flow continues in a 12'x12' box culvert to El Camino Real, where it is poured back into the Matadero Creek channel and flows to the Bay.

Details

Step 1 (all projects): sedimentation basin

When a flood flow comes down Barron Creek, it passes under the bike path bridge and into the sedimentation basin at Gunn High School. This basin was installed as part of an earlier flood control project in 1965. Its purpose is to slow the flow and thereby allow sediment (sand, dirt and small pieces of vegetation) to fall out harmlessly in the basin, rather than to pass on into the culverts lower down, where the sediment would reduce the flow capacity. Also, large pieces of vegetation and trash (tree limbs, etc.) would be captured in the basin rather than damming the flow at entrances to culverts. The reduced-sediment content water then flows over the concrete spillway and enters an underground culvert.

Step 2A (1965 project): underground culvert

The creek passes under the Gunn High School playing fields in a five-foot diameter concrete pipe culvert installed as part of the 1965 project. The culvert was laid straight across the Gunn, not in the curving channel of the creek. A small knoll ("El Cerrito") next to Strawberry Hill was demolished to provide additional material to fill the natural channel and to cover the culvert.

Step 3A (19th Century project): open ditch channel

The culvert ends where the creek leaves the Gunn property (formerly Stanford pasture lands) and enters an open ditch channel. The ditch runs alongside Los Robles Avenue from the Gunn property to Laguna Avenue. It was dug by employees of Edward Barron some time after he acquired Mayfield Farm in 1878 and before 1893 as part of development of the property for intensive agriculture. He "channelized" Barron Creek (known as "Dry Creek" at the time) down to where Laguna Avenue is now, and then ran it along the northeast-trending original property line of Mayfield Farm straight to the County Road (now El Camino Real). This took the wet-season water flows through Mayfield Farm. Several areas along the County Road were probably de facto wetlands during normal and wet winters. All the early famers in this area dug channels through their properties.

Step 4A (1958 project): second underground culvert

After the damaging flood of December 22–26, 1955 (widely considered later to have been the "flood of the century"), there was pressure on the County to protect Barron Park from a repeat. Hence the Barron Creek Flood Control Project constructed in 1958, when a five-foot concrete pipe culvert was installed from Laguna Avenue to El Camino Real. It was fitted with a trash rack at the Laguna Bridge to prevent debris from entering the pipe. The design was declared to be adequate to handle the "50-year" magnitude flood, which has a 2% chance of occurrence in any given year.

Step 2B (1984–2006 project): diversion intake structure at the basin

When the flood waters rise in Barron Creek, the stream gauges show the height at which the flood gates should be opened. The flood gates are located in the diversion intake structure at the north end of the sedimentation basin. To see them, go to the "overlook" that is just north of the bike bridge. Once the gates are opened, water can enter the diversion culvert. Simultaneously, a "normal" flow of water will continue to flow over the spillway and into the 1965 underground culvert to Barron Park and the 1958 underground culvert to El Camino.

Step 3B: (1984–2006 project): 6'x8' underground box culvert

The flood water entering the diversion intake structure is directed into a 6' by 8' underground concrete box culvert constructed in 1995 under the regional bike path. Thus, major flood flows are diverted from the normal channel of Barron Creek within Barron Park. The project design is estimated to handle floods of magnitudes up to and including the "100-year" (1% annual probability) flood flows.

Step 4B: (1984–2006 project): bridge over Matadero Creek

The Barron Creek diversion culvert crosses Matadero Creek at the donkey pasture. The bike path bridge was demolished and redesigned to incorporate the diversion culvert in one integrated structure.

Step 5: (1984–2006 project): bypass intake structure on Matadero Creek

A few steps south of the bike path-diversion culvert bridge, there is a complex intake structure to take flood flows of Matadero Creek. In the creek bed there are baffles to aim the flow toward the bypass intake structure. The baffles and intake structure were designed and a scale model tested with water flows to make certain that they and the confluence structure were correctly integrated and would handle the flood flows with minimal turbulence or pooling. Unfortunately, the orientation of the intake structure ensures that it cannot be viewed from any position to which the public has access. It faces the donkey pasture. Like the Barron Creek intake, the structure is equipped with flood gates that also serve to catch and hold large flood debris items such as large limbs and whole trees. Unlike the other one, the Matadero Creek intake gates work automatically when the flood flow exceeds about four feet. At greater volumes, the regular creek channel continues to carry about four feet of water while the excess goes into the bypass culvert. This structure was constructed in 1996.

Step 6: (1984–2006 project): diversion-bypass confluence structure

Immediately after the flood flows enter the intake structure, they pass into the diversion-bypass confluence structure, which was also physically modeled and tested with water. Here the excess flows from both creeks mix and flow into the bypass culvert. The confluence structure is located underground, beneath the bike path immediately north of the creek. No part of the confluence structure can be seen. The intake and confluence structures and the bypass culvert were constructed in 1996.

Step 7: (1984–2006 project): 12'x12' underground box culvert

The combined and mixed excess flood flows from both creeks flow through the 12'x12' concrete underground box culvert, which runs under the bike path from Matadero Creek to the Stanford Industrial Park boundary line, where it is joined by the Stanford Channel (formerly known as "the Stanford Ditch"). After this junction, it runs down the Stanford Channel right-of-way, on Stanford property, in back of the residences on the north side of Chimalus Avenue and between the Creekside Inn and the Stanford property.

Step 7A: (1984–2006 project): Stanford Channel underground junction

The junction with the Stanford Channel is underground. I believe the Channel was put in a 6'x 4' (or maybe 6'x8') box culvert which joins the 12'x12' culvert approximately where the bike path bends to go around the Varian property.

Step 8: (1984–2006 project: large concrete culvert under El Camino

At El Camino Real, under the Cibo Restaurant parking lot, Matadero Creek enters the very large box culvert (the top of which serves as the bottom of the El Camino Real Bridge across the creek). The culvert allows the diversion-bypass flood flows to join Matadero Creek at this point, and conveys the entire flow under El Camino.

Step 9: (1950s project): open concrete channel

Once past El Camino, the flood flows are contained in the open concrete channel that carries them through the rest of Palo Alto to San Francisco Bay.

"Conditional Letter of (flood) Map Revision" with the reduced floodwall heights at the critical bridge crossings.

An Overflow Bypass Channel

The remediation project included the excavation of an overflow bypass downstream of Highway 101. This preserved the natural Matadero Creek channel in the Baylands while providing additional conveyance of high flows to the Palo Alto Flood Basin. This required mitigation planting work as the final step in the project, which was completed in January, 2005.

"No Longer an Imminent Danger"

In the same spring 2006 newsletter referred to above, Patrick Muffler wrote a wrap-up of the complete project from 1983 to 2006, much of it based upon input from Doug Moran. It nicely supplemented Christian Kalar's article, which focused on the final years of the remediation project. Patrick concluded that, "…the flooding potential of the creeks traversing Barron Park has been fully addressed. The process took 23 years and was not without mistakes, glitches and political controversy. But it happened, in no small part due to the leadership and persistence of the Barron Park Association and its officers, most notably Doug Graham, Bob Moss and Christian Kalar." Patrick's headline sums it up: "Flooding from Matadero and Barron Creeks No Longer an Imminent Danger."

The End of Flooding in Barron Park?

Does Patrick's headline equate to "the end of flooding" here? The answer is no, for at least three reasons;

(1) The creeks are now designed to carry a theoretical 1% design flow (the "100 year" flood). But the fact is that nobody REALLY KNOWS whether or not the calculated flow is realistic. The SCVWD has been wrong twice before on both creeks (underestimated all four times). The fault is not theirs; they have excellent engineers and are following the "best practices" in hydrology and hydrological engineering design. The real problem is the paucity of data on flood flows in these creeks. We have almost no solid data prior to the 1950s, and not very much until the 1970s and 80s. When you are using regression analysis to calculate the probable flood levels, you need more than a handful of real life data.

(2) Don't forget that the 1% design flow can happen in ANY given year. It does not matter if it also happened last year, or even earlier in the same year. So can the 0.2% (or 500 year) flood, or the 0.1% or "1,000 year" flood.

(3) Your house can also be flooded by plugged storm drains or excessive surface sheet flow off construction projects or parking lots.

Sheet Flow and Localized Flooding

And now we face the potential onslaught of repeated heavy rain and winds from El Nino of 2015–16. What do we have to worry about? Even though the creeks are fixed—we think—what about the history of surface sheet flow on some of our residential blocks? During the El Niños of 1982–3 and 1997–8, there were bad sheet flows off the Gunn High School property into the residential lots along McGregor Way and (I believe) El Cerrito Road. Also, the properties on Matadero Court have received large sheet flows from the Lockheed Company parking lots in the Stanford Research Park.

Talk to Your Neighbors

If you are new to the neighborhood, it would be a good idea to talk with your neighbors and ask them if your immediate area has any history of sheet flow or malfunctioning storm drains. It is also a good idea to get out and clear the drains with a rake, especially in the first few storms when there are a lot of dead leaves and twigs that can plug them up.

I hope you have found this article interesting. I know it is heavy on facts—If I could have spread it over two issues before the winter I could have livened it up with more human interest examples. My objective was to tell the whole story of the 23-year project, so that you would know that there has been a lot done to protect you and your neighbors. If you have questions, please do not hesitate to contact me.

Douglas L. Graham, Barron Park Historian, 984 Ilima Way, 650-493-0689, *dgrahampaca at gmail.com*

Inception of Green Beans of Barron Park

By Jaya Pandey, Committee Chair

The name of the environmental committee of the Barron Park Association has recently been changed to Green Beans of Barron Park. For me, "green beans" at the grassroots level symbolizes the purity of nature and the potential for sustainable growth. The main objective of the committee is to provide a collaborative platform for the Barron Park community to raise local and global environmental awareness and effect positive change.

There are many important and interesting components of this committee, one of which is our Youth Environmental Service Project Grant. This grant provides local middle school or high school students an opportunity to participate in an environmental service project serving the Barron Park community. Eligible youth may utilize this grant toward obtaining the Girl Scouts Silver or Gold Award, the Boy Scouts Eagle Rank, or simply to engage with the community while making a sustainable impact on our local ecosystem. Grant Applications will be received year round. Youth are encouraged to send a simple letter of intent to the Barron Park Association BPA board or directly to the Green Beans team.

Additionally, we encourage volunteers (both adult and youth) to join our committee, to develop a knowledge base on topics related to local and global environmental issues to be shared with the community. We are confident that if you are passionate about this topic, you will find an interesting program to join. Since we are starting committee activities in early 2016, this is the right time to step forward and work with this group.

Contact info: BPA Board email: *bpa-board at googlegroups.com*.

Green Beans team email: *greenbeans-bpa at googlegroups.com*

The Barron Park Green Team welcomes and supports the new Green Beans of Barron Park Committee

by Lynnie Melena

The Barron Park Green Team remains an active group with loose linkage to the Barron Park Association. In the past, the Green Team has sponsored the Green Tour, the mini-can challenge, a Low Carbon Diet workshop, plantings in Bol Park, tree planting with Canopy, workshops on water conservation and less toxic cleaning products and other events. For the past few years, Green Team members have been key members of the steering committee that presents Bike Palo Alto. This year's October event, for which the BPA provided some funding, had the best attendance ever with 650 participants.

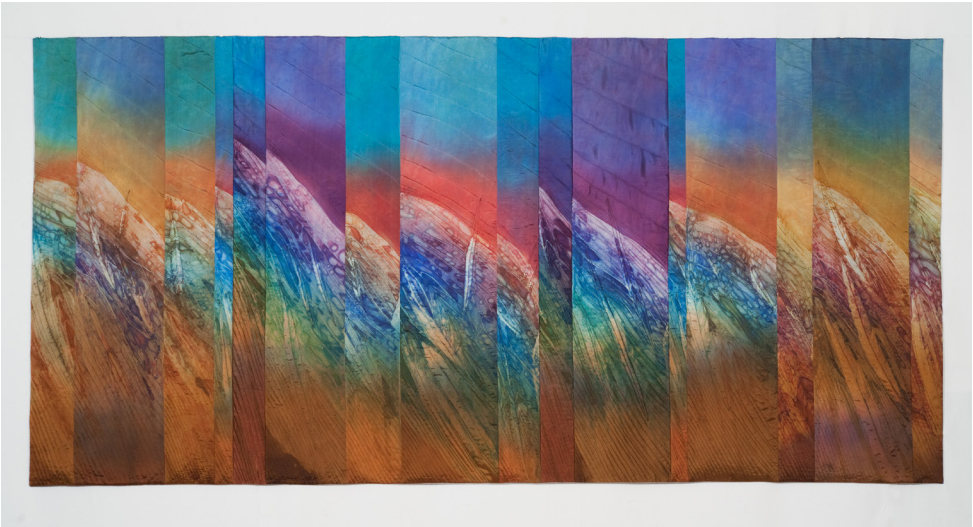
ART IN THE PARK—JUDITH CONTENT

Like the haiku, my work explores the essence of an image, memory, or moment in time. I find inspiration in nature's landscapes, from coastal marshes to desert canyons. Just as haiku have different interpretations, I hope the meditative quality of my work encourages viewers to draw upon their own memories and experiences when contemplating my work.

I construct my quilts intuitively using an array of hand-dyed silks. My fabrics are created by using a contemporary approach to the traditional Japanese dye technique, arashi-shibori. I add and subtract colors in layers, and although I can control the results to a great extent, the element of surprise when the designs are revealed never fails to excite me.

My background in watercolor painting and my love of building things led naturally to the construction of art quilts. As I prepare my palette of silks, I don't take notes or record the results,—but allow each dye session to inform the next. A collection of diverse silks are strewn on the studio floor, torn up, then arranged and rearranged until they resonate. The composition of fragments is meticulously secured to the design wall, studied, refined, and finally sewn together. Quilting defines portions of the design and appliqué is sometimes applied to accentuate depth or movement in the piece.

I graduated from San Francisco State University in 1979 with a BA in Fine Art with an Emphasis in Textiles. I have been a full-time studio artist for more than 35 years. I exhibit nationally and internationally, and my work is represented in museum, public, and private collections including the Mountain View and Sunnyvale campuses of the Palo Alto Medical Foundation. I served on the Palo Alto Art Center Foundation Board, as a juror for Quilt National and Quilt Visions and as President of the Studio Art Quilt Associates (SAQA). My work is included in publications such as SILK and *Textiles: The Art of Mankind* by Mary Schoeser, *Masters: Art Quilts I* by Martha Sielman, *The Kimono Inspiration* by Rebecca Stevens, and *Memory on Cloth: Shibori Now* by Yoshiko I. Wada.



"Pinnacles." Arashi-shibori dyed, pieced and quilted wall piece inspired by the rugged terrain of Pinnacles National Park. 82"w x 44"h. Commissioned for the Palo Alto Medical Foundation's Sunnyvale Campus

In addition to working with textiles, I enthusiastically explore other creative outlets. I tumbled hundreds of pounds of community-donated pottery to create "Pottery Creek," a public art installation that flanks the entry to the Palo Alto Art Center. I design jewelry, create hand-dyed accessories, paint buttons, crochet nests and explore book making and collage. I consider my home and garden canvases to color.

Links to my work:
www.tanseycontemporary.com
http://lucente-studio.myshopify.com/pages/style-2015
http://www.paloaltoonline.com/news/2015/05/20/in-living-color

"Aftermath" Arashi-shibori dyed, pieced and quilted silk wall piece. 70"w x 53"h.

"Bittersweet" Arashi-shibori dyed, pieced and quilted silk wall piece. 58"h x 73"w.

Pleated silk infinity scarf, ombre dyed. Hand painted button closure.

BARRON PARK ASSOCIATION
NEWSLETTER
WINTER 2015
■
www.BPApaloalto.org
724 Barron Avenue
Palo Alto, California 94306

PRSRT STD
U.S. POSTAGE PAID
PALO ALTO, CA
PERMIT NO. 143