



Save the Drop Water Conservation Contest 1

Proposal from Lizbeth Azueta, Vallery Sanchez, and Stefanie Zarate, students in the 7th grade at Bethune Middle School

OVERVIEW: As students in the seventh grade at Bethune Middle School Math/Science/Technology Magnet, the opportunity to swim at school is one of the things we enjoy most about going to Bethune. We are concerned though that the drought in California could cause the pool and after school swimming program to be shut down. We recently learned that through the use of the pool as many as 696,670 gallons of water per year are being disposed through the pool gutters to the sewer system and wasted when they could be recycled back into the pool. According to Jim King, Swimming Pool Technical Supervisor for Los Angeles Unified School District (LAUSD), modernization of the gutter plumbing system is feasible and would eliminate this problem. We are taking advantage of the Save the Drop Contest to bring this situation to the attention of the Bethune community. By doing so, we hope it will motivate others to take responsibility for conserving water and to advocate for maintaining the pool and after school swimming program that has meant so much to us and to the 1,600 students who have participated in the program since 2009.

SCOPE OF WORK: Based on a preliminary estimate from Jim King, the cost to redo the pool plumbing and conserve 696,670 gallons of water could be as much as \$500,000. We will have a more precise estimate once Condor Pools, a design and construction company in El Monte, finishes examining the original architectural plans to the pool. Win or lose, we believe that our entry in the Save the Drop Contest will give momentum to our campaign to mobilize support to see this project through completion. The construction will involve removing the existing connection of gutter piping to waste lines and connecting the gutter overflow instead to a large tank, called a balance tank, in the basement beneath the pool. Fortunately, in terms of costs, the pool plumbing is accessible by means of crawl space and will not require having to dig through concrete. The main circulation pump will then draw water from both the main drain and the balance tank. The balance tank then serves to balance the draw of water between the bottom of the pool and the top of the pool or gutter system. This in turn will improve the safety of the pool for swimmers since it more adequately removes the organic material from the surface of the water and distributes the chemically treated, heated water more evenly around the pool. Currently, the main circulation pump draws water only from the main drains at the floor of the pool.

1 Calculation of Bethune pool water loss from current scum gutter system:

Formula = Length x Width x Avg Depth x Conversion Factor (cubic feet to gallons)

Daily Loss = 27' x 60' x .25' x 7.48 = 3029 gallons (gal) Weekly Loss (5 days) = 3029 gal x 5 days = 15,145 gal

Annual Loss (46 weeks) = 696,670 gallons

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COST SAVINGS: The costs that will be saved annually as a result of this project start with the savings in water itself, which will amount to approximately \$9,351. We arrived at this amount by using the following information we received from Michael Montes in the Maintenance and Operations, Energy Management Unit at LAUSD: "The cost of water for LAUSD is about \$5.85 per HCF (Hundred Cubic Feet, 748 Gallons = 1HCF), and the additional cost for sewer service is about \$4.20 per HCF, for an approximate total of \$10.05 per HCF of water consumed."

$$\frac{696,670 \text{ gal}}{748 \text{ gal}} = 931 \text{ HCF} \times \$10.05/\text{HCF} = \$9,357 \text{ in total water and sewer costs saved}$$

Additionally there will be savings in heating and chemical costs resulting from the consumption of less water. We will be consulting with Michael Montes and Jim King to figure these and any other savings that we may have overlooked.

ACTION PLAN:

BETHUNE MIDDLE SCHOOL

7TH GRADE PROJECT FOR SAVE THE DROP CONTEST

Date 11/09/2016

Goal/Vision – We seek to maintain the use of the swimming pool for a learn to swim program for students at Bethune Middle School by engaging the school community in an initiative to conserve water.

Objective – To convince the LAUSD to fund the modernization of an antiquated pool plumbing system that is causing 697,670 gallons of water to be wasted annually.

Team/Work Group Members Lizbeth Azueta, Vallery Sanchez, Stefanie Zarate, members of the Mustang Swim Team, 6-10 students from Leadership Class, Ana Hinds, 7th Grade Health/Science Teacher, Leticia Pitones, Coach from the Trojan Swim Club

Strategies to Achieve Objective	Timelines, Persons Responsible,	Resources Needed	Indicators of Success & Evaluation Plan	Date & Status or Date Completed
1. Awareness of the problem: Production of video/Powerpoint presentation to be used in classrooms, school assemblies to inform students of need to update pool plumbing if they will	presentation ready to be shown by 1st week in December. Team effort	Cell phones, digital cameras, computers to edit with.	Surveys to measure student attitudes toward water conservation, and the opportunity to participate in swimming program at school.	

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continue to have the opportunity to learn to swim after school.			Feedback from teachers and parents toward organizing to save the pool and swim program	
2. Attend School Site Council to agree upon best strategy for winning support of Local District South	Take up at November 17 th Council meeting. Dr. Garrett	1-3 members of Mustang Swim Team, Leticia Pitones, Tony Grutman, Director of Trojan Swim Club Outreach, Jim King	Agreement of Council to advocate for a budget adjustment with the District to update the plumbing to the pool	
3. Seize upon the opportunity at the Community Fair at Bethune on December 10th to educate community and business leaders about the Save the Drop Contest, our project to conserve water and sustain the swimming program, and to conduct fund development	December 10 th , Tony Grutman, parent(s) of students on the Mustang Swim Team tbd.	Leaflets and/or other informational material. Leadership students from work group, parents, students, TSC coaches/instructors	Leads to potential funding, commitment of civic and political leaders in politicking on behalf of our initiative	
4. Proposal to Local District South for a budget adjustment to fund the modification to Bethune Pool	12/14/2016 Patricia Navarro, Parent Liaison, Dr. Garrett, Tony Grutman	Written proposals to distribute to Local District; letter expressing support for water conservation project and swim program to Local District signed by students, parents, faculty, community leaders, etc.	Agreement to take proposal under consideration; securing funding as a Critical Care project	
5. Next steps tbd by level of support from all stakeholders in the project				

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Bethune Middle School