

FACILITIES MASTER PLAN 2012



Twin Hills School District
SEBASTOPOL, CALIFORNIA



**Apple
Blossom
School**

Elementary K-5



**Twin
Hills
School**

Charter Middle 6-8



**Orchard
View
School**

*Independent Study
K-12 Charter*



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REV. 3/12

FACILITIES MASTER PLAN 2012

TWIN HILLS UNION SCHOOL DISTRICT

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Overview

Persinger Architects and Associates is pleased to present to the Twin Hills Union School District (District) the following assessments and ten year Master Plan. The purpose of this Master Plan is to assess the District's current and future needs by identifying and analyzing the major factors that are expected to affect the individual school's facilities needs over time and provide a plausible timeline and cost schedule for meeting those expectations.

In November 2011 the process was started with representatives from the District, the schools (both staff and teachers), and the Architect. A series of meetings were held and information gathered to better understand and analyze current and future needs. The results from this input were then compiled into a report which established a recommendation of projects with prioritization for Board consideration.

The foundation for these projects is in direct alignment with the mission and goals of the District and the individual schools.

Mission Statements:

District Mission Statement

The District's mission is to provide all our children a well-rounded and enjoyable educational experience in the environment that best matches their needs and those of their families.

Twin Hills Charter Middle School Mission

Twin Hills Middle School is committed to excellence. The mission is to provide all students with an education that is academically challenging in an atmosphere of mutual caring and respect. The school will provide the foundation for a life of continuous learning and prepare students to be positive contributing citizens.

Apple Blossom Elementary School Mission

Apple Blossom's mission is to:

- Provide a safe, nurturing environment
- Expect high achievement from all students
- Grow lifelong learners
- Develop creative and critical thinkers
- Develop projective, globally aware citizens
- Integrate the arts and technology into the curriculum

Orchard View Charter School Mission

Orchard View School seeks to empower all students to develop a passion for life-long learning by engaging them in a learning process that is designed to challenge their intellect and support their emotional growth and natural curiosity.

Facilities Mission Statement

To provide Facilities that promote 21st century learning through technology and innovative instructional practices that:

- Facilities are safe and meet or exceed state standards for school construction
- Promote health and wellness of all students
- Generate long term savings through reduced energy consumption and reduced long term maintenance costs
- Promote energy efficiency and incorporate sustainable design practices into the projects
- Better accommodate the growing community use of school facilities, strengthen partnerships and economic vitality

Master Plan Goals

It is the goal of this Master Plan to provide the District with the new “State-of-the-Art” Facilities it needs to offer its’ students and communities the services they deserve and to provide the students with the most modern education with the best in current technologies, facilities, and campus. Additionally, it is the goal to provide the community with campuses that foster community involvement and development and to provide the campuses with the teaching facilities that can deliver the specialized, safe, clean, and sustainable education that the District expects.

Enrollment

Apple Blossom Elementary School

The past influx of students to Apple Blossom went from a 2007 enrollment of 308 to a 2011 enrollment of 425. At maximum enrollment there are (4) classes at each grade level or (24) classes at 25 students per for a total of 600 maximum. Acknowledging enrollment fluctuations over the past ten years we can estimate student enrollment to be about 600 students by 2024.

Twin Hills Middle School

In reviewing the past influx of students to Twin Hills from a 2007 enrollment of 221 to a 2011 enrollment of 307. Acknowledging enrollment fluctuations over the past ten years we can estimate student enrollment to be 360 students by 2024 at the current capacity. Should the District elect to grow beyond this number, it will need to increase its capacity for students and teachers if it plans on sustaining its favorable student-teacher ratio.

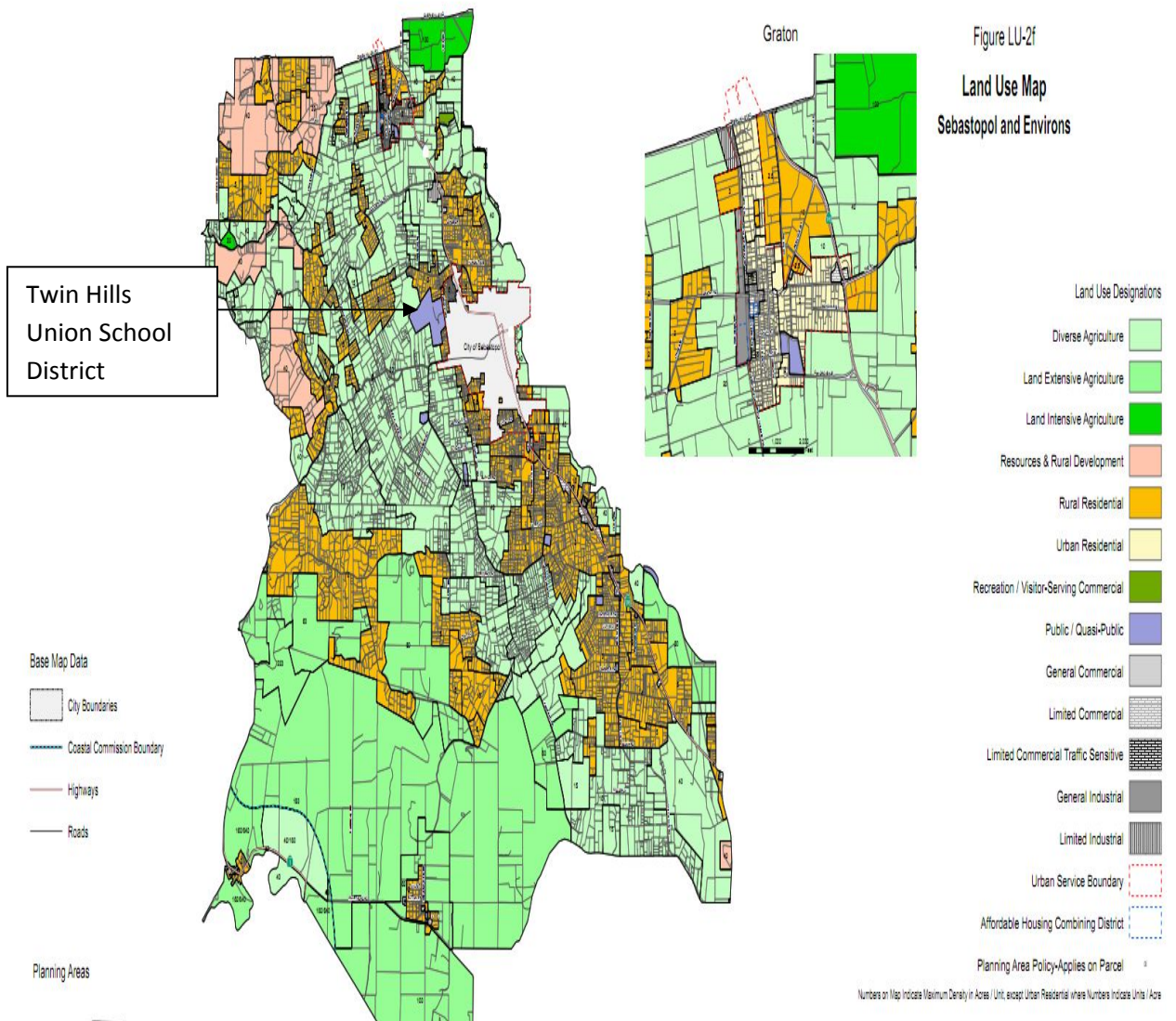
Orchard View Charter School

In reviewing the student enrollment data for the previous ten years of Orchard View it is concluded that the enrollment will stay relatively the same over the next ten years although it does have unlimited growth possibility. It is expected to grow in the typical scenario to 210 students by 2024. Therefore at this school it is not as important to prepare for growth, but rather prepare the campus with its existing capacity with new “State-of-the-Art” Facilities.

Demographics:

Sonoma County

According to the U.S. Census Bureau, Sonoma County's population is 493,285 and the median household income is \$68,225. Sonoma County population increased 8% from 2000 to 2010, and is projected to grow an additional 11.3% from 2005 to 2035. Although population growth is on the incline in the county, Sebastopol has a decline in student population growth. However, it is the goal of the District to increase student population by providing a highly valued education platform.



From the Sonoma County Permit & Resource Management Department

Site Analysis

Overview

In reviewing the three campuses of the District, it is noteworthy that there are many relocatables or portable classrooms and that all classrooms are near maximum utilization.

The purpose of analyzing school facilities for maximum utilization is to:

- Identify space for potential enrollment growth
- Account for unique curricular needs
- Determine the potential for state and aid funding
- Identify spaces that might be under utilized

The District has developed specialized spaces for various curricular needs such as Art, Science, Music, Career Technology and Computer Technology. Obviously these spaces become less ideal for core subjects such as Math, English, Language areas, etc. so while there is a fully loaded component to each site, it is incumbent upon all to consider a realistic approach to loading. In addition, over the next ten years enrollment is forecasted to increase and campus needs are expected to diversify, changing from campuses dedicated to general education to campuses offering “State-of-the-Art” education including opportunities for specialized hands-on workshops, modern up to date computer and science labs, and spaces dedicated to community and faculty meetings.

Apple Blossom Elementary School

School Site Information

Apple Blossom Elementary School
700 Water Trough Road
Sebastopol, CA 95472

School Site Information:

- Grade Level: Pre-K through 5th
- Original Construction Date: 1956
- Date of Last Modernization: 2005
- Total Building Area: 50,800 Sq Ft
- Site Acreage: 9.5 Acres
- Enrollment (2011-2012): 425
 - Kindergarten 4 classes
 - 1st Grade 4 classes
 - 2nd Grade 3 classes
 - 3rd Grade 4 classes
 - 4th Grade 2.5 classes
 - 5th Grade 2.5 classes

School Site Unique Features:

- The school site is bordered by apple orchards and farmlands on all sides, and Watertrough Road on the East.

Needs Assessment Overview – Apple Blossom Recommendations

Having gone through a modernization in 2003 as well as miscellaneous modernizations in 2010, much of the campus meets current code criteria for access / ADA compliance, however there are some exceptions which will be identified later in this document. While there has been upkeep to the permanent buildings, modernization will need to occur to keep the buildings functioning at the desired level which has been established by the District. The remaining classrooms are in portables, most of which have dilapidated over time and have run the course of their lifespan. Note that two of the portables (LF1 & LF2) are relatively new and are not in need of replacement until Phase 3. The following recommendations are needs/desires that have been gleaned from the teacher and staff surveys that were distributed at each school as well as meetings with the District and Site Administration:

- School wide clock system/bells for dismissal, etc.
- A private comfortable place to meet with other teachers, school personnel, and parents with computer access, white boards, tables, chairs etc.
- Modernize Library
- Improved Technology
- Preserve large play areas for kids
- Expanded Library and Media Center
- More technology in the classroom: T.V, projector, laptops, or ipads
- Document cameras for every classroom
- Media library and sound technology lab
- Streamlined parking pick-up/drop-off area
- Upper playground- overhang to eat under for upper grades with tables and benches
- New paint on blacktop for 4 square, hopscotch, class lines, and new games
- Separate play area for kindergarteners
- Relocate the pre-school
- More storage
- Intercom must work in all rooms
- More phone lines
- Upgraded network
- Wireless in all campus areas
- Updated software on computers
- Network or tablet centers in the classroom
- Access to TV in classrooms
- Provide “listening centers” for primary rooms
- New carpets
- Fix hallway partition
- Repaint/replace some walls
- Upgraded staff restrooms
- Doors that lock from the inside for code red drills in all classrooms
- Heat in the restrooms
- Updated Fire Alarm System

Twin Hills Middle School

School Site Information

Twin Hills Middle School
1685 Water Trough Road
Sebastopol, CA 95472

School Site Information:

- Grade Level: 6-8
- Original Construction Date: 1974
- Date of Last Modernization: 2001
- Total Building Area: 38,900 Sq Ft
- Site Acreage: 7.9 Acres
- Enrollment (2011-2012): 307
 - 6th Grade 72 Students
 - 7th Grade 120 Students
 - 8th Grade 115 Students

School Site Unique Features:

- The school site is bordered by residential neighborhood on all sides, and Watertrough Road to the South.

Needs Assessment Overview – Twin Hills Recommendations

Having gone through site work modernizations in 2011, much of the campus meets current code criteria for access / ADA compliance, and although there were a modernization of its classrooms in 2001, the main classroom building does not function well and the drastic modernization of such building is not a worthy investment of resources when compared to the cost of a new building. Many of the buildings that remain are old, outdated and dilapidating portable classrooms that are in need of replacement. The following list was derived from in part from the teacher and staff surveys that were completed in November 2011 as well as meetings with the District, Site Admin and the Building Committee. The recommendations are as follows:

- More small pull-up spaces, storage, etc.
- More Meeting Rooms
- New Staff Room that is teacher friendly with collaborative space adjacent
- New Library
- New state of the art Computer Lab
- New science labs
- More black top areas for sports like basketball
- Place for student council to meet
- Parent friendly place
- More parking
- Industrial Arts Room/Makers & Inventors Room:
 - Culinary arts
 - Green/recycling technology
 - Wood working
 - Computers/design technology
 - Fire/police/EMT technology
 - Solar/electric car technology
- Need 2-4 multi functional classrooms that would have a kitchen and bathroom for community with lockable storage
- Parent volunteer space
- Classroom/Wi-Fi/Hi-tech-to seat 80
- More/updated technology in classrooms
- Improved infrastructure: ie HVAC, Plumbing
- Sound insulation
- Parking/pave east side access road
- New finishes/need more natural light
- Windows that open for better air circulation & ventilation

Orchard View Charter School

School Site Information

Orchard View Charter School
700 Watertrough Road
Sebastopol, CA 95472

School Site Information:

- Grade Level: K through 12
- Original Construction Date: 2008
- Date of Last Modernization: none
- Total Building Area: 8,000 Sq Ft (All portables)
- Site Acreage: 9.5 (Including Apple Blossom)
- Enrollment (2011-2012): 180

School Site Unique Features:

- The school site is shared with Apple Blossom Elementary School, bordered by apple orchards and farmlands on all sides, and Watertrough Road on the East.

Needs Assessment Overview – Orchard View Recommendations

Having obtained some new portables in 2008 Orchard View is in a good position to continue maintenance on the existing portables until further down the Master Plan. At that point in the Master Plan, it is recommended that all portables be replaced with site built buildings. Furthermore, it is recommended that one of the existing run down portables get demolished and replaced along with the addition of two more. This would allow Orchard View to vacate classrooms they are currently occupying on the Apple Blossom Campus. The following bulleted items are recommendations to accomplish a successful response to the administrative needs:

- Demolition of Portables
- New Courtyard
- Maintenance of existing portables
- Eventual replacement of portables with permanent structures

Cost Estimates

Determination of Costs for Projects

Preliminary estimates for costs of the proposed projects were developed from a review of similar school facility improvement completed within the last two years. Preliminary programming and amenities were assumed for the purposes of this estimate.

<u>Project Component</u>	<u>Construction Costs</u>
Demolition of existing facilities	\$8-\$10/SF
General modernization of existing facilities and systems Including new systems and technologies	\$75-\$100/SF
General landscaping modernizations or improvements	\$5-\$8/SF
New construction or expansion of offices, classrooms, and specialized spaces (single story)	\$200-\$285/SF

Estimated Total Project Costs (2012 Dollars)

The following figures provide estimated total project costs inclusive of both estimated hard (construction) and soft (i.e.; professional services, architects, engineers, inspectors, etc.) costs in current 2012 dollars.

Proposed Project Estimated Total Project Costs (2012 Dollars)

Apple Blossom Elementary School

Demolition of Portables and Outdated Classrooms:	(5,760 sq ft)	\$62,000-\$77,000
New site built classrooms to replace portables	(5,760 sq ft)	\$1,152,000-\$1,642,000
Streamline parking pick-up/drop-off area:	(46,000 sq ft)	\$100,000-\$120,000
Modernize existing site work, landscaping, and walk ways:	(150,000 sq ft)	\$200,000-\$210,000
Modernize existing classrooms:	(26,000 sq ft)	\$1,950,000-\$2,600,000
New Library/Media Center & Teacher Training Center:	(3,840 sq ft)	\$768,000-\$1,094,000
Renovate playfields:	(5,000 sq ft)	\$200,000-\$210,000

It is important to note that modernization would include recommended upgrades to mechanical, structural, electrical, and civil issues that have been defined.

Total: \$4,432,000-\$5,935,000

The above figures are based on projected student body growth. Should there be a decline in student body, it is recommended that modernization and portable replacement occur. Should the student body count stay approximately where is currently is, it is recommended that modernization, portable replacement and the library/ media center & teacher training center occur.

**Proposed Project Estimated Total Project Costs
(2012 Dollars)
Twin Hills Middle School**

Demolition of Portables and Outdated Classrooms:	(20,985 sq ft)	\$168,000-\$210,000
New Campus Main Building including new classrooms, staff rooms, restrooms, and multi-purpose community rooms:	(20,925 sq ft)	\$4,185,000-\$5,970,000
New Classroom Buildings Computer Labs, Science Labs, Specialized Maker and Inventor Rooms:	(7,562 sq ft)	\$1,512,000-\$2,155,000
New Library:	(3,840 sq ft)	\$768,000-\$1,094,000
Site Improvements (new road, sports courts landscaping)		\$225,000-\$300,000

It is important to note that modernization would include recommended upgrades to mechanical, structural, electrical, and civil issues that have been defined.

Total: \$6,858,000- \$9,729,000

The above figures are based on projected student body growth. Should there be a decline in student body, it is recommended that modernization and portable replacement occur. Should the student body count stay approximately where is currently is, it is recommended that modernization, portable replacement and the library and maker/inventor rooms get pushed out until enrollment starts to increase enough to support this construction.

Proposed Project Estimated Total Project Costs (2012 Dollars)

Orchard View Charter School

Demolition of Portables:	(7,835 sq ft)	\$63,000-\$78,000
Modernize site work and walkways:	(4,600 sq ft)	\$75,000-\$85,000
New Campus Buildings including new classrooms, staff rooms, restrooms:	(7,835 sq ft)	\$1,567,000-\$2,233,000
New Courtyard:	(8,000 sq ft)	\$27,000-\$35,000

It is important to note that modernization would include recommended upgrades to mechanical, structural, electrical, and civil issues that have been defined.

Total: **\$1,732,000-\$2,431,000**

The above figures are based on projected student body growth. Should there be a decline in student body or it remains as is, the recommendation would remain as above.

Estimated Total Project Costs (Escalated)

Given the estimated timing of projected funding, the proposed projects would need to be phased over time. An escalation factor must be added to the 2012 cost estimates to allow for the cost of inflation of labor and materials over the projected life of the program. A cost escalation rate of 2% was assumed for projects phased in 2014, and a rate of 3% was assumed for all years thereafter.

Based on identified Board priorities, guiding principles, and input received from the Facilities Committee, a proposed phasing plan is provided later in this report. The escalation assumptions used in the estimated costs listed below are consistent with the proposed phasing plan.

Should the District garner additional funding or bond authorization through State Aid programs or Federal Stimulus legislation, projects may be shifted into earlier phases, thereby reducing escalation and resulting in potential project cost savings.

The following chart provides estimated total project costs inclusive of both estimated hard (construction) and soft (i.e.; professional services, architects, engineers, inspectors, etc.) costs in escalated dollars.

Proposed Project Estimated Total Project Costs

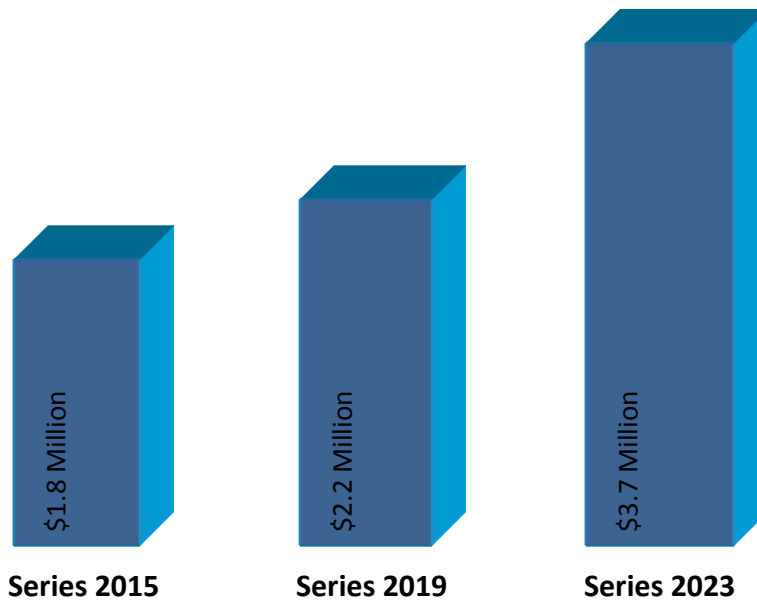
(Escalated)

Apple Blossom Elementary School:	\$6.2 Million
Twin Hills Middle School:	\$10 Million
Orchard View Charter School:	\$2.5 Million
Total:	\$18.7 Million

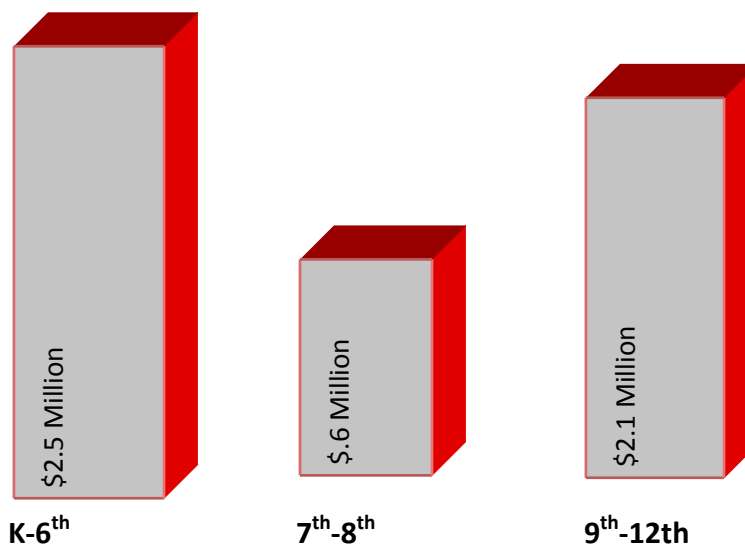
*Note: for the purpose of this exercise a value of 3% was used to account for inflation

Projected Funding Schedule

It is of import to the Master Plan to establish a schedule of projected funding. This funding would happen in part to a General Obligation (GO) Bond as a result of Prop 39. Additional funding would also become available as a result of projected growth and thus projected eligibility. The following two schedules mimic how this funding would offset project costs.



G.O. Bond Proceeds (from the report prepared by Caldwell Flores Winters, Inc.)



Projected Eligibility Dollars (by grade)

Priorities

Overview - Criteria

This Facilities Master Plan defines projects that are required to bring all educational facilities up to current standards that impact safety, performance, function, technology, and program requirements over the next ten years. Given the estimated timing of funding, the projects will need to be phased and implemented over time.

As the District moves forward with the implementation of projects, guiding principles will provide specific direction and parameters for the District to prioritize the construction projects.

These principles are consistent with the District's strategic goals and mission statement discussed earlier. The following guiding principles are dynamic and provide the flexibility needed to adjust to new issues and needs that may arise. They are intended to guide decision-making as the District implements projects over time and are presented as follows:

Criterion #1: Academic Achievement

- Facilities that promote 21st century learning through technology and innovative instructional practices (i.e., interactive and project based learning, small class sizes, preparation for higher education and career opportunities)

Criterion #2: Health and Welfare of Students

- Facilities that promote health and wellness of all students

Criterion #3: Sustainability of General Fund

- Facility improvements that generate long term savings to the General Fund through reduced energy consumption and reduced long term maintenance costs

Criterion #4: Energy Efficiency/Sustainable Design

- Facility improvements that promote energy efficiency and incorporate sustainable design practices into the projects

Criterion #5: Diverse/Interactive Community Facilities

- Facility improvements that better accommodate the growing community use of school facilities, strengthen partnerships and economic vitality

Proposed Phasing

Overview

Given the estimated timing of projected funding, the proposed projects would need to be phased over time. An escalation factor must be added to the 2012 cost estimates to allow for the cost of inflation of labor and materials over the projected life of the program. For the purpose of a base figure, note that the higher number in the range was used to make projections.

On November 28, 2010, the District established priorities for funding projects from the Measure M bond: “to reduce annual school operating costs by installing solar energy improvements and eliminating leases; replace portables and construct permanent libraries at Apple Blossom School and Twin Hills Middle School; and to construct a technology center and expand student access to computers and technology.” These priorities have been established as “Phase I” below.

The guiding principles discussed earlier were used in evaluating the phasing of the subsequent phasing. Should the District garner additional funding or bond authorization through State Aid programs or Federal Stimulus bond funding, projects may be able to be accelerated into earlier phases.

The following is a proposed phasing plan:

- **Phase I – \$6,935,000**

- Twin Hills Middle School - \$6,230,000**

- New Campus Main Classroom Building inclusive of new classrooms including special ed., staff room, meeting rooms, restrooms, Maker Room, Culinary Arts Room and multi-purpose community rooms
 - Demo (3) portables

- Apple Blossom Elementary School - \$225,000**

- New sidewalks/ramps that are ADA compliant
 - New drop off loop at Watertrough Road
 - Resurface existing parking and landscaping improvements

- Orchard View Charter School - \$480,000**

- Demo (2) existing run down portables
 - Construct (4) portables for new classroom and staff/teacher rooms
 - Re-do courtyard & modernize site work and walkways

- **Phase II – \$4,788,000**

- Apple Blossom Elementary School - \$3,694,000**

- Modernize Existing Classrooms
 - Construction of new library/media center and teacher training center

- Twin Hills Middle School - \$1,094,000**

- New Library/Media Center

- **Phase III – \$6,485,000**

- Apple Blossom Elementary School - \$1,719,000**

- Replacement of portables with permanent buildings

- Twin Hills Middle School - \$2,455,000**

- New Industrial Arts Center with Specialized Maker and Inventor rooms
 - Modernize Landscaping
 - Site Improvements to include new parking and sports courts

- Orchard View Charter School - \$2,311,000**

- Replace portables with Site Built buildings

- **Total Program - \$18,208,000**

Conclusion

This ten year plan, implemented immediately, has the potential to recreate the Twin Hills Union School District with “State-of-the-Art” Facilities to provide the teaching and services it has promised while maintaining all of the same feels and components that the District prides itself in. The modernized technology, buildings, and campuses will offer the district capacity for growth and opportunity to offer more than the standard services to its students and community.

Phase One will implement the new buildings that the campuses deserve, removing old and deteriorating classroom buildings and providing modern State-of-the-Art teaching facilities in addition to new rooms dedicated to the developing educational systems of the Sebastopol community, promising students and the community areas for hands-on learning and development with the latest technologies and practices. Site improvements will be completed as well.

Phase Two will modernize the existing classrooms that stay at Apple Blossom on par with the new classrooms in the District along with construction of a new library and teacher training center. Twin Hills will also receive a new library and media center will have the capabilities to continue raising education standards.

Phase Three will complete the desire to eliminate any remaining portables, and allow for the construction of an industrial arts center at Twin Hills along with site improvements.

In the next ten years the Twin Hills Union School District can transform into a “State-of-the-Art” District with higher potential for long-term development and growth, promising its students and teachers better facilities for their future.

Appendix A

Electrical Assessments

Overview

In late 2011 visual assessments of classroom and support facilities were conducted by an electrical engineer to review existing conditions as they relate to the existing electrical and data systems. These assessments were based on a review of existing materials, systems, age and general conditions of the facilities. It is expected that a more extensive review will take place as part of the programming and preliminary design phase of each project. These preliminary findings were recorded and follow.

APPLE BLOSSOM SCHOOL

ELECTRICAL SERVICE

1. The original electrical service was replaced in 2004. Service is rated at 2000 Amp 120/208 Volt 3 Phase 4 Wire. Spaces in the switchboard are available and service capacity appears adequate.

DATA SYSTEM

1. With the exception of the office building, it appears that all copper data wiring is Category 5 or in some cases Category 3. Fiber distribution etc. appears adequate.

CATV SYSTEM

The campus does not have a cable TV system.

SECURITY SYSTEM

A Radionics security system has been provided in selected areas including office and cafeteria.

TELEPHONE SYSTEM

The telephone system was upgraded in 2004. System appears to function properly.

LIGHTING

With the exception of the office, gymnasium and several classrooms, all interior lighting appears original 1958 through 1967.

FIRE ALARM SYTEM

System was upgraded in 2004 with an addressable Notifier system. During modernization the system in the office and gymnasium was upgraded to current codes. The remainder of the campus does not comply with current SB575 standards,

MASTER CLOCK/BELL SYSTEM

The system appears to function properly

INTERCOM SYSTEM

Campus is served with a Bogen Intercom System. System appears to function properly.

We suggest the following upgrade priorities:

1. Upgrade the existing Life-Safety Fire Alarm system to current standards. Install smoke detectors in all rooms below ceilings and heat detectors above ceilings. Strobe and horn/strobes should be installed in areas per DSA standards. The complete system should comply with SB575 standards.
2. Replace existing fluorescent lighting fixtures with low energy fluorescent fixtures with T8 lamps and electronic ballasts. Replace existing incandescent fixtures with compact fluorescent type fixtures. Switching and motion sensors should be provided per Title 24 requirements. In addition, lighting levels should be provided per current standards.

3. Connect master clock bell system to intercom system for class pass functions.
4. Replace all Category 3 and 5 data cables and jacks with Category 6 system. Replace all patch panels and patch cords, etc. with Category 6 equipment.

TWIN HILLS SCHOOL

ELECTRICAL SERVICE

1. The electrical service is rated at 1200 Amp 120/208 Volt 3 Phase 4 Wire. Spaces in the switchboard are available, and service capacity appears adequate.

DATA SYSTEM

All copper data wiring, patch panels, etc. appears to be Category 5. Fiber distribution cable from main distribution frame (MDF) to IDF's appears adequate.

CATV SYSTEM

Selected rooms have cable TV system.

SECURITY SYSTEM

The office and approximately 50% of classrooms are protected with a security system.

TELEPHONE SYSTEM

The telephone system was installed in 1998 and appears to be functioning properly.

FIRE ALARM SYSTEM

The system is protected with a Notifier addressable fire alarm system. Approximately 50% of campus has been upgraded during modernizations and comply and to current codes. The remainder of the campus does not comply with current SB575 standards.

MASTER CLOCK/BELL SYSTEM

The system has recently been upgraded and appears to function properly.

INTERCOM SYSTEM

The system appears to function properly.

LIGHTING

With the exception of six classrooms, all interior fluorescent lighting has been replaced with energy efficient fluorescent fixtures with T8 lamps and electronic ballasts.

We suggest the following upgrade priorities:

1. Upgrade the existing Life-Safety Fire Alarm system to current standards. Install smoke detectors in all rooms below ceilings and heat detectors above ceilings. Strobe and horn/strobes should be installed in areas per DSA standards. The complete system should comply with SB575 standards.

2. Replace existing fluorescent lighting in six classrooms with low energy fluorescent fixtures with T8 lamps and electronic ballasts. Switching and motion sensors should be provided per Title 24 requirements.
3. Upgrade existing data system to Category 6 standards. Replace all copper wiring, patch panels, switches, etc. with equipment to conform with Category 6 standards. It appears that the fiber backbone may be reused.

ORCHARD SCHOOL

ELECTRICAL SERVICE

1. The electrical service is rated at 600 Amp 120/208 Volt 3 Phase 4 Wire and fed from the main switchboard at Apple Blossom School. Service capacity appears adequate.

DATA SYSTEM

Data System is fed from the main distribution frame (MDF) at Apple Blossom School with fiber cable and appears adequate. All copper data wiring is Category 5

CATV SYSTEM

The campus does not have a cable TV system.

SECURITY SYSTEM

The office and approximately 90% of classrooms are protected with a Honeywell security system.

TELEPHONE SYSTEM

The system was not functioning during site walk-through.

FIRE ALARM SYSTEM

The system was upgraded in 2004 and complies with current code.

MASTER CLOCK/BELL SYSTEM

The campus does not have a master clock system.

INTERCOM SYSTEM

System is new and functions properly.

LIGHTING

With the exception of two classrooms, all lighting has been upgraded to current standards.

We suggest the following upgrade priorities:

1. Replace telephone system.
2. Replace all Category 3 and 5 data cables and jacks with Category 6 system. Replace all patch panels and patch cords, etc. with Category 6 equipment.
3. Replace existing fluorescent lighting in two classrooms with low energy fluorescent fixtures with T8 lamps and electronic ballasts. Switching and motion sensors should be provided per Title 24 requirements.

Appendix B

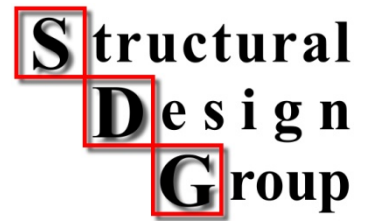
Structural Assessments

Overview

In late 2011 visual assessments of classroom and support facilities were conducted by a structural engineer to review existing conditions as they relate to the structural condition and integrity of existing buildings on each site. These assessments were based on a review of existing materials, systems, method of construction, age and general conditions of the facilities. It is expected that a more extensive analysis will take place as part of the programming and preliminary design phase of each project. Initial findings are as follows.

November 28, 2011

Alexis Persinger
Persinger Architects
5875 Ross Branch Road
Sebastopol, CA 95472



Richard D. Burris, SE
Larry H. Dunn, SE
Brian D. Hartley, SE

**RE: Twin Hills Union School District
Structural Observation**
700 Watertrough Road, Sebastopol, CA

On January 21, a site visit was performed to observe the exterior of the site-built structures at Apple Blossom, Orchard View, and Twin Hills schools. The purpose of our visit was to identify readily apparent potential structural deficiencies based on current structural design practice and current Building Code requirements. This report assumes that all site-built wood framed structures have been constructed using plywood roof and wall sheathing and that the design of all structures has been reviewed and approved by the Department of State Architect (DSA). All conclusions herein are based on visual observation only. Structural calculations were not performed.

Apple Blossom School (Reference SK-1)

Apple Blossom School is comprised of both site-built and modular buildings. The site-built structures are all one story buildings of wood framed construction. Lateral resistance to wind and earthquake loads is provided by wood shear walls. The type of light, wood frame construction utilized in the buildings on campus has historically performed well in earthquakes.

With the exception of buildings designated A and B on SK-1, the number of solid wall panels available to resist lateral loads appears to be adequately proportioned relative to the number of window/door openings on each side of the buildings on campus. The presence of solid wall panels on all sides of the buildings allow for an even distribution of lateral forces to the shear walls and minimize the amount of lateral drift/deflection that the buildings would otherwise experience.

The north and south walls of buildings A and B are void of solid wall panels as shown in SK-2 and SK-3. The absence of shear walls on the two ends of these buildings makes the structures susceptible to excessive lateral drift/deflection at these two wall lines during an earthquake. Excessive cyclic drift/deflection under lateral earthquake loads could break the window glazing leading to a potential life safety hazard.

The 2010 California Building Code allows buildings with "open" fronts provided the roof diaphragm is engineered to transmit lateral forces by rotation to the remaining shear walls and provided that Code drift/deflection limits are met. It is unlikely that these buildings, believed to be constructed in the 1960's, meet the required drift/deflection criteria.

It is therefore recommended that the window openings at the low ends of the saw-tooth roof be infilled with plywood panels and retrofitted with holdown devices into the foundation as required to meet current Code requirements. A more expensive option, which would allow the windows to remain, is to install a steel "moment" frame within the wall line or behind the windows.

Twin Hills Union School District - Structural Observation

Page 2

Orchard View School (Reference SK-1)

Orchard View school consists primarily of modular buildings. The only site-built structure on this campus is the wood framed canopy over the outdoor eating area designated as structure C on SK-1. The canopy is open on all sides and appears to be of relatively new construction. Lateral resistance to wind and earthquake loads is provided by cantilevered wood posts and 2x diagonal knee braces. Roof framing consists of 2x rafters spanning to 4x support beams. The rafters cantilever approximately 6 feet beyond the support beam on one side of the structure. Reference SK-4.

Long standing provisions of the California Building Code require canopy roofs be designed to resist the effects of wind uplift. The existing toe-nailed rafter-to-beam connections do not appear capable of resisting the required uplift forces, particularly at the cantilevered eave condition. Similarly, the existing beam-to-post connections appear deficient in this regard.

The canopy roof does not incorporate a plywood sheathed diaphragm. Plywood roof sheathing is normally used to transmit lateral forces to the lines of diagonal knee braces. However, it may be possible that the metal deck roofing material on the canopy has been used in lieu of plywood or that lateral loads are transmitted to the diagonal bracing by other methods.

In light of the apparent deficiencies, it is recommended that the existing construction be compared to the original design documents approved by the Department of State Architect's office and any missing hardware at connections be installed. In the event that the structure has been constructed according to plans, the original engineer for this structure should be contacted regarding compliance with the potential deficiencies described above.

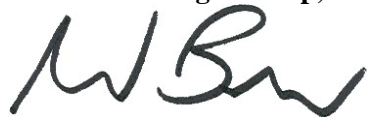
Twin Hills School (Reference SK-5)

Twin Hills School consists of a combination of site-built and modular buildings. The site-built structures are of light frame wood construction similar to those at Apple Blossom School. The number of solid wall panels available to resist lateral loads appears to be adequately proportioned relative to the number of window/door openings on each side of the buildings on campus.

A wood framed storage shed, designated building D on SK-5, has been constructed adjacent to a sloping grade. The soil on the northwest side of the structure has eroded downslope, away from the building, exposing the foundation. However, no signs of differential settlement were observed during our visit. To minimize further erosion and the potential for distress to the building's foundation, it is recommended that downspouts along the northwest wall be routed to drain away from the building.

If you have any questions, please do not hesitate to call.

Sincerely,
Structural Design Group, Inc.



Richard Burris, SE
Principal



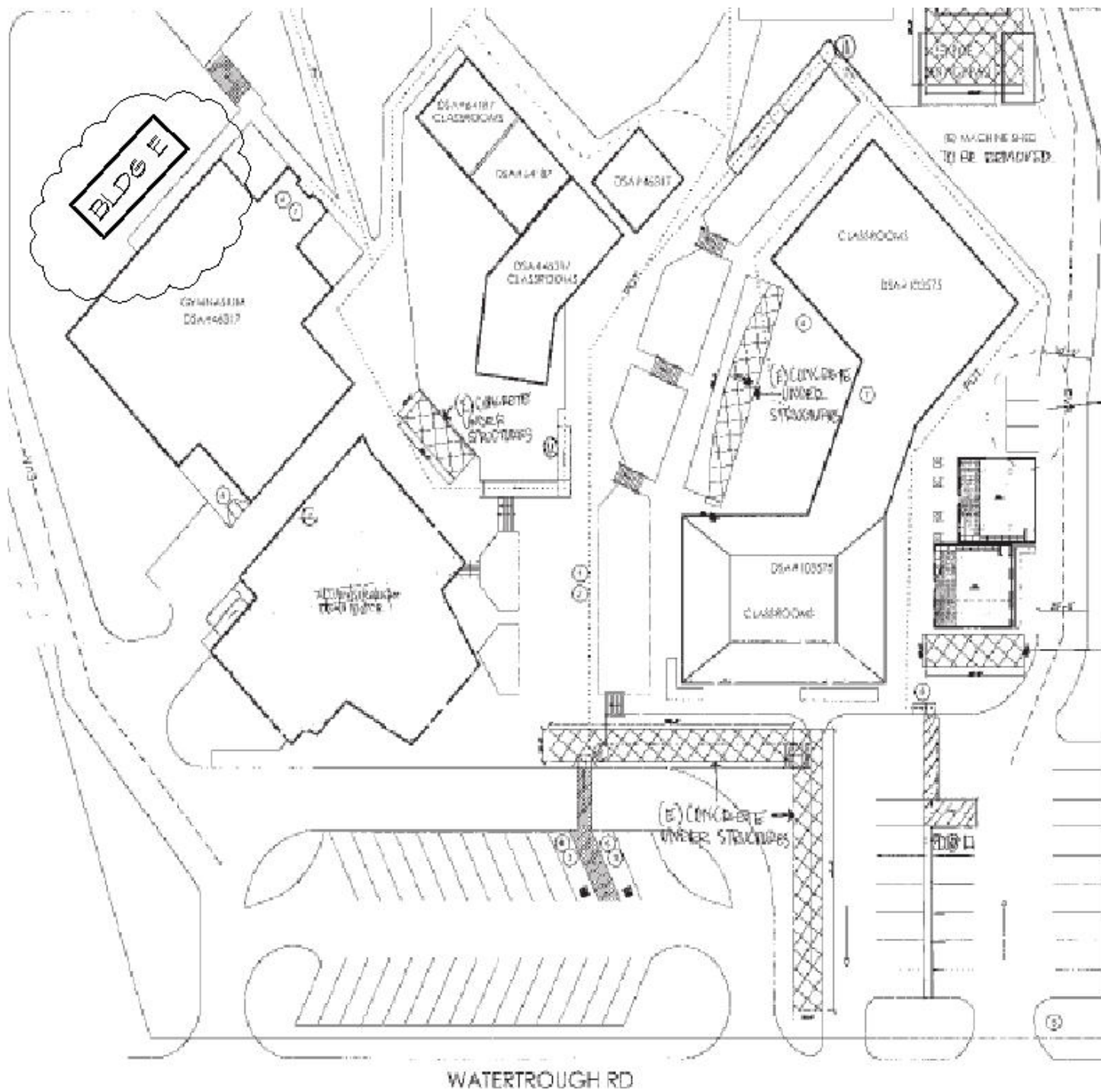
SK-3

Bldg. B - South Wall (Bldg. A similar)



SK-4

Bldg. B - North Wall (Bldg. A similar)



WATERTROUGH RD

SK-5



SK-6

Appendix C

Mechanical Assessments

Overview

In late 2011 assessments of classroom and support facilities were conducted by a mechanical engineer to review existing conditions as they relate to the existing mechanical systems in place at the three campuses. These assessments were based on a review of existing systems, age and general conditions of the facilities. It is expected that a more extensive review will take place as part of the programming and preliminary design phase of each project. These reports follow.

January 31, 2012

Alexis Persinger, Principal
Persinger Architects and Associates
5875 Ross Branch Road
Sebastopol, CA 95472

Alexis,

Following is a report of the site's most pressing HVAC related issues:

Modular / Portable Classroom Buildings

The Classroom buildings use wall mounted Bard type heat pumps to provide heating and cooling. The equipment is generally in good condition and is typically 11 years old. The equipment is serviceable for another 5 years, plus or minus, before needing replacement.

Multi-Use Building

The main room is conditioned by two twinned furnaces in a mechanical room. The supply air is delivered to the room by underground ducts. The furnaces are about 5 years old and have another 10 years of useful service life left.

While the furnaces are acceptable the underground ducts are not. They are a liability hazard due to the possible seepage of moisture into the ducts. It is *strongly* recommended the system be reworked to eliminate the underground ducts in favor of new above ground ducts. This isn't easily accomplished but is necessary to guard against future respiratory ailments of staff and children.

We recommend doing this right and installing new roof mounted equipment. The liability hazard is enormous. The District is urged to effect this change as soon as possible.

At the kitchen the hood has no makeup air. This represents a current Code violation and can be remedied by adding a makeup air swamp style cooler to the kitchen.

The cook hood also has no Ansul fire suppression system. This also represents a current Code violation. An Ansul system is recommended to be added.

The toilet room serving the Kitchen area has no exhaust fan. One is recommended to be added.

The Cafeteria Office has no conditioning besides a small ceiling fan. It is recommended a ductless split system with outside air intake be added to bring this area up to Code.

Finally, the Workroom has no conditioning. It is recommended to add a ductless split system here also, or, alternatively, add a small rooftop AC unit to condition it and the adjacent Cafeteria Office.

Site Built Classroom Buildings (original construction to the site)

These buildings have:

1. The gas fired furnaces (one per classroom) dating back to 2001. The furnaces are in good condition and have about five years of useful life left. They are recommended to remain as is until about 2017 when they should be changed out.
2. The condensing units on the roofs are also of 2001 vintage. The units are in fair shape and will not need replacing unit 2017. At that time they should be replaced with super high efficiency units for energy savings.

Toilet Rooms

The ceiling exhaust fans are dirty with dust and accumulated gunk. They should be cleaned or (preferred) replaced.

This concludes our analysis.

Sincerely,

Mike Bocklund, P.E. / Principal

January 31, 2012

Alexis Persinger, Principal
Persinger Architects and Associates
5875 Ross Branch Road
Sebastopol, CA 95472

Alexis,

Following is a report of the site's most pressing HVAC related issues:

Classroom Building (Rooms 20 & 21)

This building is heated and cooled with wall mounted Bard type air conditioning units. The three units are original to the building and are seven years old. They currently do not need replacement, as they have not exceeded their useful service life.

Classroom Building (Rooms 15, 16, 22 & 23)

This building is heated with gas fired furnaces that are about five years old. The units are replacement units to the original installation equipment. The units do not need replacement as they have not exceeded their useful service life.

Library and Classroom Building (Rooms 2, 3, 5, 6, 7, 9, 8, 11, 12, 13, 14 + Teachers + Toilets)

These units are original to the buildings and consist of gas fired furnaces concealed in cabinetry or as rooftop gas fired units.

The units have exceeded their useful service lives. It is recommended the school replace the units with new condensing type equipment with +95% thermal efficiencies. This represents no small energy savings to be harvested.

The exhaust fans at the restrooms are aged and in need of replacement.

This concludes our preliminary analysis. A further in-depth analysis is recommended as our site visit was constrained by communication issues with the head custodian (our Portuguese is rusty ☺).

Sincerely,

Mike Bocklund, P.E. / Principal

Appendix D

Civil Assessments

Overview

In late 2011 a site visit was made to each school by a civil engineer to review existing site conditions as they relate to ADA compliance, and various other civil concerns. These assessments were based on a review of existing conditions of the facilities. It is expected that a more extensive review will take place as part of the programming and preliminary design phase of each project. Reports with the findings follow.

PRELIMINARY MASTER PLAN

For

**Apple Blossom School
700 Watertrough Road
Sebastopol, CA 95472-3917**

Prepared for

**Twin Hills Union School District
700 Watertrough Road
Sebastopol, CA 95472-3917**

January 18, 2012



Introduction:

This preliminary master plan is intended as a broad overview of the campus' infrastructure with regards to the sites sanitary sewer, storm drain and water systems, as well as vehicular and pedestrian access. It is also intended to provide the District with suggested improvements that can be incorporated into the future modernization schedule. It is not intended to be a complete index of all items needing improved on site or to be used as construction drawings in any way.

This preliminary master plan has been prepared by studying previous construction documents and as-build drawings found in the District archives along with subsequent visits to the campus and meetings with the District Facilities Manager.

Each section of the preliminary master plan includes a general site overview obtained from plan and site research including faculty interviews. After the general overview, observed site issues are identified and analyzed following recommendations to the District for each item that is investigated in *italics*.

Site Infrastructure

General Overview:

According to previous construction documents and as-build drawings found in the District archives, the Apple Blossom School was originally designed and approved in 1957 and consisted of an administration building, kindergarten building, multi-use building and two classroom buildings. The first of two additional classroom buildings were designed and approved in 1962 and the second in 1965. Additional modular buildings have been placed on-site in the more recent years.

The existing sanitary sewer lines servicing the original buildings were designed using asbestos-cement pipes which were directed into a septic tank and leach field located south east of the site, parallel to the creek. Additional septic tanks have been installed for subsequent site improvements and additions. The leach field was also relocated to north east playing field.

Unless damaged or broken, asbestos-cement pipes are not considered to be dangerous. Asbestos-cement pipes may soften and lose mechanical strength over time causing them to deteriorate. As the pipe weakens, asbestos fibers can be released from the pipes with the potential to be released into the air and water supply. The expected service life of asbestos-cement pipes is expected to be approximately seventy years.

The existing storm drain lines servicing the original buildings were also designed using asbestos-cement pipes which were directed toward the creek to the south of the site, a tributary of the Atascadero Creek. With the additional development of the site, additional storm drain lines and inlets were installed which also discharge into the creek at various locations along the southerly property line.

Overall site drainage appears to be suitable with no history of major flooding. The majority of the original buildings on campus have downspouts that connect to a closed pipe system. Alternatively, the majority of the buildings added later have downspouts that discharge onto splashblocks or the ground immediately adjacent to the building. Additional site drains and concrete valley gutters are installed around the campus to capture the majority of the surface runoff and direct it to the creek and valley gutter adjacent to Watertrough Road.

The existing water supply for the original site included a pump station and pressurized tank located adjacent to the original bathroom facilities in the center of the campus. According to previous construction documents found in the District archives, significant upgrades were made in 1998 to the campus water supply system including a new potable water supply and treatment system which included a new well and treatment plant. Piping improvements included the separation of landscape irrigation facilities from potable water supply piping.

Observed Site Issues:

The original sanitary sewer and storm drain systems are comprised of aging, asbestos-concrete pipe.

Because of the sanitary sewer and storm drain systems age and potential hazard, it is recommended that the existing sanitary sewer and storm drain system be video inspected to determine the pipes condition. Sections of the pipe should then be replaced that are damaged or broken. It is further recommended that the entire original systems be removed and replaced over the next 10 years, including all connections to the buildings' downspouts. All new sanitary sewer and storm drain systems should be hydraulically and/or hydrologically designed.

Settlement in the amount of up to two inches was observed at the west end of the original leach line location (identified in **Exhibit 1**). It was also understood from the District Facilities Manager that a sink hole had also occurred near this same location and was repaired in the past two years. The methods used to abandon the original leach field and subsequent repairs of the sink hole are unknown.

A geotechnical review of the original leach field should be done, including a boring(s), to determine soil stability in this area. Recommendations can then be included to remove and recompact any loose and unsuitable backfill. The area should then be monitored annually to determine if any further settlement occurs.

Although the overall site drainage appears to be suitable, there is very little treatment of site storm runoff prior to discharge into the creek. Current State code requires new development to treat all runoff prior to leaving the site.

As additional site improvements are made, the design should encourage natural filtration of site runoff and should incorporate the existing building downspouts and surface runoff per current State law.

It was also observed that the main parking lot appears to lack sufficient drainage structures.

As additional site improvements are made to the main parking lot, some slight grading and additional drain inlets should be installed to mitigate any ponding. Improvements could include flow through planters that not only beautify the area, but encourage natural filtration of site runoff.

None of the storm drain outlet points found on-site along the southerly property line (identified in **Exhibit 1**) have proper velocity reduction devices installed which is causing ongoing erosion along the creek bank, including small wash out areas.

*Proper velocity reduction devices should be immediately installed below all existing storm drain outlets above the creek bank and Watertrough Road as identified in **Exhibit 2** to reduce on-going erosion. Any wash out areas should be graded and recompact as identified in **Exhibit 2** to reduce the opportunity for additional erosion to occur. As upgrades are made to the campus' storm drain system, smaller storm drain systems should be abandoned or removed and combined to other, larger systems hydrologically and hydraulically designed to capture the sites runoff. More suitable locations should also be determined for the sites discharge points to minimize erosion and sediment pollution. In this way, erosion caused by discharge from the site will be easier to monitor and control with fewer discharge points.*

Due to the locations of numerous large trees with respect to the existing drainage structures, many of concrete valley gutters and drain inlets have cracked or heaved to elevations that cause localized ponding and disruptions in surface flow as shown in **Photos 1** and **3** of the Appendix.

*Concrete valley gutters and drain inlet grates identified in **Exhibits 1** and **2** should be replaced. Additional measures should be taken to detour future tree root damage to new valley gutter and drainage improvements. The use of tree root barriers and pipe superior in resisting tree root intrusion should be considered in subsequent design improvements.*

Several of the downspouts on the original buildings were observed to have been disconnected from the main storm drain system as shown in **Photo 2** of the Appendix. Many of the downspouts on more recent building additions discharge directly against the building foundations. In some cases runoff from downspouts and adjacent walkways flows directly below the buildings as shown in **Photos 5** and **6** of the Appendix because of poor site grading immediately adjacent to the buildings.

Downspouts not directly connected to a closed pipe system should, at minimum, be fitted with concrete splashblocks to discharge runoff at least eighteen inches from the building structure. Additionally, in areas where the immediate grade adjacent to building structures is less than two percent (2%), the grade should be regarded to encourage positive drainage away and around structures rather than beneath them for downspout and surface discharge. Where positive drainage cannot be achieved in certain areas, additional surface drains should be installed and connected to the existing storm drain system.

Although the existing potable water supply, irrigation and fire suppression systems were not investigated for their adequacy, interviews with the District Facilities Manager indicate there are no current issues with the potable and fire supply systems. However, the District Facilities Manager considered the irrigation supply system to have a poor layout with poor pressure.

The layout and pressure of the irrigation supply system should be investigated to determine adequacy.

Site Vehicular and Pedestrian Access

General Overview:

It is understood from interviews with the District Facilities Manager that the current vehicular access is not adequate. An area along Watertrough Road has recently been identified as a potential student drop-off area and plans are currently being developed for County approval.

The majority of the concrete surrounding the original buildings is original and was most likely constructed prior to the development of ADA code and is currently installed with slopes that exceed current accessible code. Additionally, due to the locations of numerous large trees with respect to the existing walkways, several sections of concrete slab has cracked or heaved to elevations that cause tripping hazards. In some areas, tree roots have also adjusted the adjacent asphalt surface causing additional tripping hazards. Concrete heaving and other tripping hazards caused by tree roots are shown in **Photos 4, 7, 8, 9** and **10** of the Appendix.

Observed Site Issues:

Overall, site accessibility with respect to ADA code was poor resulting in the majority of the buildings being inaccessible to persons with disabilities as defined by the current ADA code. Areas identified to have slopes in excess of those defined by ADA code are identified in **Exhibit 1**.

*Areas identified in **Exhibit 1** to have slopes in excess of those identified by ADA code should be removed and replaced as funds become available. A study should be conducted for the placement of a new accessible ramp to connect the*

original Apple Blossom Campus with the upper playing fields and charter school. The new ramp should be designed to minimize tree removal. The use of tree root barriers superior in resisting tree root intrusion should be considered in subsequent design improvements.

Site storm drain inlets shown in **Photo 8** and as identified in **Exhibit 1** located within pedestrian walkways were not equipped with ADA compliant inlets.

*Drain inlets as identified in **Exhibit 2** to have non ADA compliant grates should be removed and replaced as funds become available.*

Appendix



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7



Photo 8



Photo 9

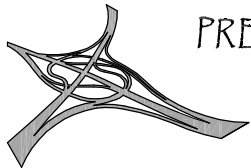
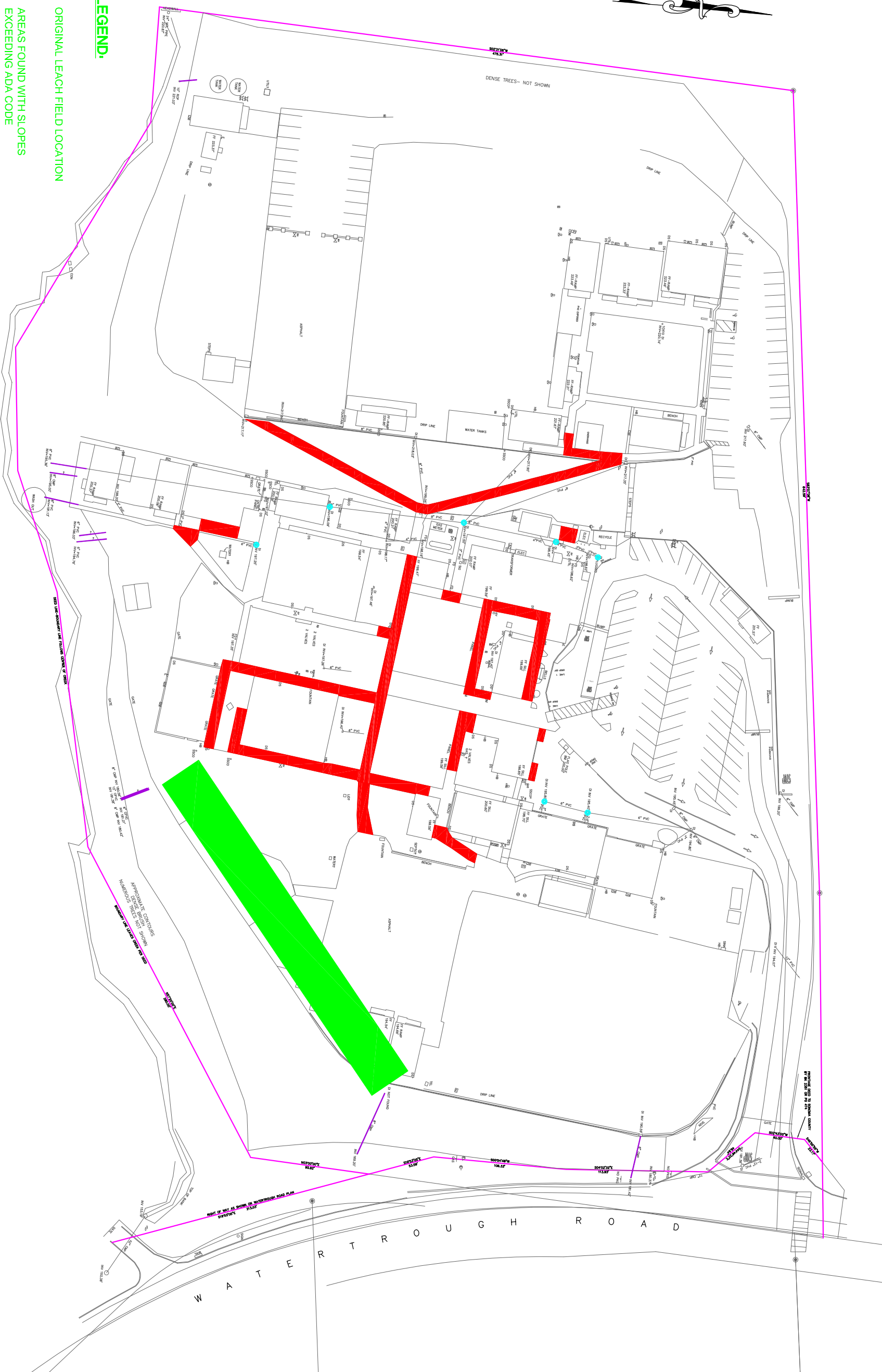


Photo 10



LEGEND.

- ORIGINAL LEACH FIELD LOCATION
- AREAS FOUND WITH SLOPES EXCEEDING ADA CODE
- STORM DRAIN INLETS FOUND WITHIN PEDESTRIAN WALKWAYS WITH NON-ADA COMPLIANT GRATES
- EXISTING STORM DRAIN OUTLETS



PRECISION ENGINEERING
AND
CONSTRUCTION

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Belmont, CA 94002

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F: 650.637.1059
TLutzPE@gmail.com

EXISTING SITE EXHIBIT
APPLE BLOSSOM SCHOOL
700 WATER TROUGH ROAD
SEBASTOPOL, CA 95472

Date:
01/16/2012

Scale:
1" = 80'

Design: TRL
Check: TRL

PEC Job No.

PEC 11-041

Drawing Number:

EXHIBIT
1

- AREA OF RECOMMENDED
GEOTECHNICAL INVESTIGATION

EXISTING WASH OUT AREAS TO BE
GRADED AND RECOMPACTED

REMOVE AND REPLACE FLATWORK OR
CONCRETE VALLEY GUTTER

INSTALL VELOCITY REDUCTION DEVICE

REPLACE STORM DRAIN INLET GRATE
WITH ADA COMPLIANT GRATE
- LEGEND.
-
- GRAPHIC SCALE
-
- RECOMMENDED SITE
IMPROVEMENTS EXHIBIT
APPLE BLOSSOM SCHOOL
700 WATER TROUGH ROAD
SEBASTOPOL, CA 95472
-
- PRECISION ENGINEERING
AND
CONSTRUCTION
- 901 Waltermire Street
Belmont, CA 94002
- T: 650.226.8640
F: 650.637.1059
TLutzPE@gmail.com
- Date:
01/16/2012
- Scale:
1" = 80'
- Design:
TRL
- Check:
TRL
- PEC Job No.
- PEC 11-041
- Drawing Number:
- EXHIBIT
2

PRELIMINARY MASTER PLAN

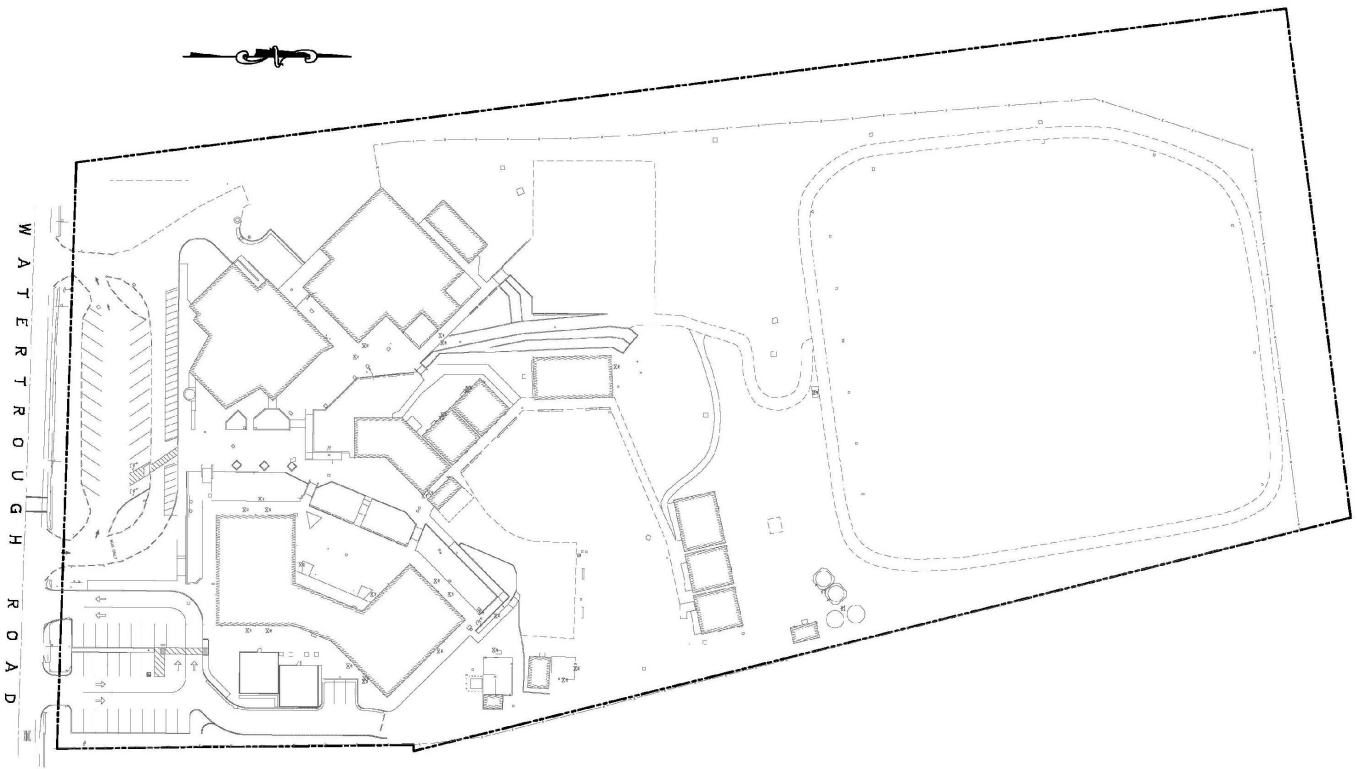
For

**Twin Hills Middle School
1685 Watertrough Road
Sebastopol, CA 95472-3917**

Prepared for

**Twin Hills Union School District
700 Watertrough Road
Sebastopol, CA 95472-3917**

January 18, 2012



Introduction:

This preliminary master plan is intended as a broad overview of the campus' infrastructure with regards to the sites sanitary sewer, storm drain and water systems, as well as vehicular and pedestrian access. It is also intended to provide the District with suggested improvements that can be incorporated into the future modernization schedule. It is not intended to be a complete index of all items needing improved on site or to be used as construction drawings in any way.

This preliminary master plan has been prepared by studying previous construction documents and as-build drawings found in the District archives along with subsequent visits to the campus and meetings with the District Facilities Manager.

Each section of the preliminary master plan includes a general site overview obtained from plan and site research including faculty interviews. After the general overview, observed site issues are identified and analyzed following recommendations to the District for each item that is investigated in *italics*.

Site Infrastructure

General Overview:

According to previous construction documents and as-build drawings found in the District archives, the Twin Hills Middle School was originally designed in 1972 and approved in 1973 and consisted of the classroom building located at the south east corner of the site. Two additional modular classrooms and a small administration building were constructed soon after. Further improvements were made to the site in 1985 including an additional classroom and the gymnasium building. Numerous additional modular buildings have been placed on-site throughout the 1990's and 2000's. The administration building was added in the more recent years.

The existing sanitary sewer lines servicing the site were designed as asbestos-cement pipes which were directed into a septic tank and leach field located at the south west corner of the lower playing field. Subsequent buildings constructed from 1985 to the present were most likely designed using polyvinyl-chloride (PVC) pipes. One section of pipe identified in **Exhibit 1** has known root intrusion according to interviews with the District Facilities Manager.

Unless damaged or broken, asbestos-cement pipes are not considered to be dangerous. Asbestos-cement pipes may soften and lose mechanical strength over time causing them to deteriorate. As the pipe weakens, asbestos fibers can be released from the pipes with the potential to be released into the air and water supply. The expected service life of asbestos-cement pipes is expected to be approximately seventy years.

The existing storm drain lines servicing the site were mainly designed using a combination of polyvinyl-chloride (PVC) and reinforced concrete pipe (RCP) which were

directed toward the creek north of the site, a tributary of the Atascadero Creek. A portion of asbestos-cement pipe was found adjacent to the original classroom building. With the additional development of the site, an existing swale that flowed through the center of the site towards the west was redirected into a closed pipe system. Additional PVC and RCP storm drain lines and inlets were also installed which discharge toward the creek, although the final discharge point could not be found and is likely off-site.

Overall site drainage appears to be suitable with no history of major flooding. The majority of the buildings on campus have downspouts that connect to a closed pipe system. Some of the modular buildings installed more recently have downspouts that discharge onto splashblocks or the ground immediately adjacent to the building. Additional site drains are installed around the campus to capture the majority of the surface runoff and direct it toward the creek.

The existing water supply for the original site included a pump station and pressurized tank located north of the original classroom building. According to previous construction documents found in the District archives, significant upgrades were made in 1998 to the campus water supply system including a new potable water supply and treatment system which included a new well and treatment plant. Piping improvements included the separation of landscape irrigation facilities from potable water supply piping.

Observed Site Issues:

The original sanitary sewer and storm drain systems are comprised of aging pipe and located within the vicinity of mature trees.

Because of the sanitary sewer and storm drain systems age, proximity to mature trees and potential hazard, it is recommended that the existing sanitary sewer and storm drain systems be video inspected to determine the pipes condition. Sections of the pipe should then be replaced that are damaged or broken. It is further recommended that the asbestos-concrete pipes be removed and replaced over the next 10 years. The use of tree root barriers superior in resisting tree root intrusion should be considered in subsequent pipe design and improvements. Any new sanitary sewer and storm drain systems should be hydraulically and/or hydrologically designed.

Although the overall site drainage appears to be suitable, there is very little treatment of site storm runoff prior to discharge toward the creek. Current State code requires new development to treat all runoff prior to leaving the site.

As additional site improvements are made, the design should encourage natural filtration of site runoff and should incorporate the existing building downspouts and surface runoff per current State law.

Many of the downspouts on more recent building additions discharge directly against the building foundations. In some cases runoff from downspouts and adjacent walkways

flows directly adjacent to or below the buildings as shown in **Photos 1** and **2** of the Appendix because of poor site grading immediately adjacent to the buildings. In some instances wood rot and mold were observed at the base of several modular buildings as shown in **Photos 3** and **4**. In other cases, site drainage is causing undermining of adjacent concrete flatwork as shown in **Photo 3**. Poor site drainage was also observed around both sheds north of the original classroom building as shown in **Photos 5** and **6** of the Appendix.

Downspouts not directly connected to a closed pipe system should, at minimum, be fitted with concrete splashblocks to discharge runoff at least eighteen inches away from the building structure. Additionally, in areas where the immediate grade adjacent to building structures is less than two percent (2%), the grade should be regraded to encourage positive drainage away and around structures rather than beneath them for downspout and surface discharge. Where positive drainage cannot be achieved in certain areas, additional surface drains should be installed and connected to the existing storm drain system.

Although the existing potable water supply, irrigation and fire suppression systems were not investigated for their adequacy, interviews with the District Facilities Manager indicate there are no current issues with the irrigation, potable and fire supply systems.

Site Vehicular and Pedestrian Access

General Overview:

It is understood from interviews with the District Facilities Manager that the current vehicular access is not adequate. The south east parking was recently upgraded including ADA access, flow through planters and new asphalt surfacing.

The majority of the original concrete surrounding the original building is original and was constructed with slopes that exceed current accessible code as shown in **Photos 9** through **12** of the Appendix. Additionally, due to the locations of numerous large trees with respect to the existing walkways, several sections of asphalt have cracked or heaved to elevations that cause tripping hazards. Asphalt heaving and other tripping hazards caused by tree roots are shown in **Photo 7** and **8** of the Appendix.

Observed Site Issues:

The asphalt within the drop-off area and lower parking lot are showing signs of their age including alligator cracking and spalling as shown in **Photos 15** and **16** of the Appendix.

The drop-off area and lower parking lot should be repaved as funds become available. Repairs and/or replacement should be done within the next five years. The use of tree root barriers superior in resisting tree root intrusion should be considered in subsequent design improvements.

The asphalt within the lower track surface are showing signs of age including alligator cracking and spalling as shown in **Photo 8** of the Appendix.

The lower track surface should be repaved or resurfaced as funds become available. The use of tree root barriers superior in resisting tree root intrusion should be considered in subsequent design improvements.

Overall, site accessibility with respect to ADA code was good, however some areas of the indicated path of travel exceeded allowable slopes per ADA code resulting in several of the buildings being inaccessible to persons with disabilities as defined by the current ADA code. Areas identified to have slopes in excess of those defined by ADA code are shown in **Photos 9** through **12** and **14** of the Appendix and identified in **Exhibit 1**.

*Areas identified in **Exhibit 1** to have slopes in excess of those identified by ADA code should be removed and replaced as funds become available.*

Site storm drain inlets shown in **Photo 9** and **13** and as identified in **Exhibits 1** and **2** located within pedestrian walkways were not equipped with ADA compliant inlets.

*Drain inlets as identified in **Exhibits 1** and **2** to have non ADA compliant grates should be removed and replaced as funds become available.*

Appendix



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7



Photo 8



Photo 9



Photo 10



Photo 11



Photo 12



Photo 13



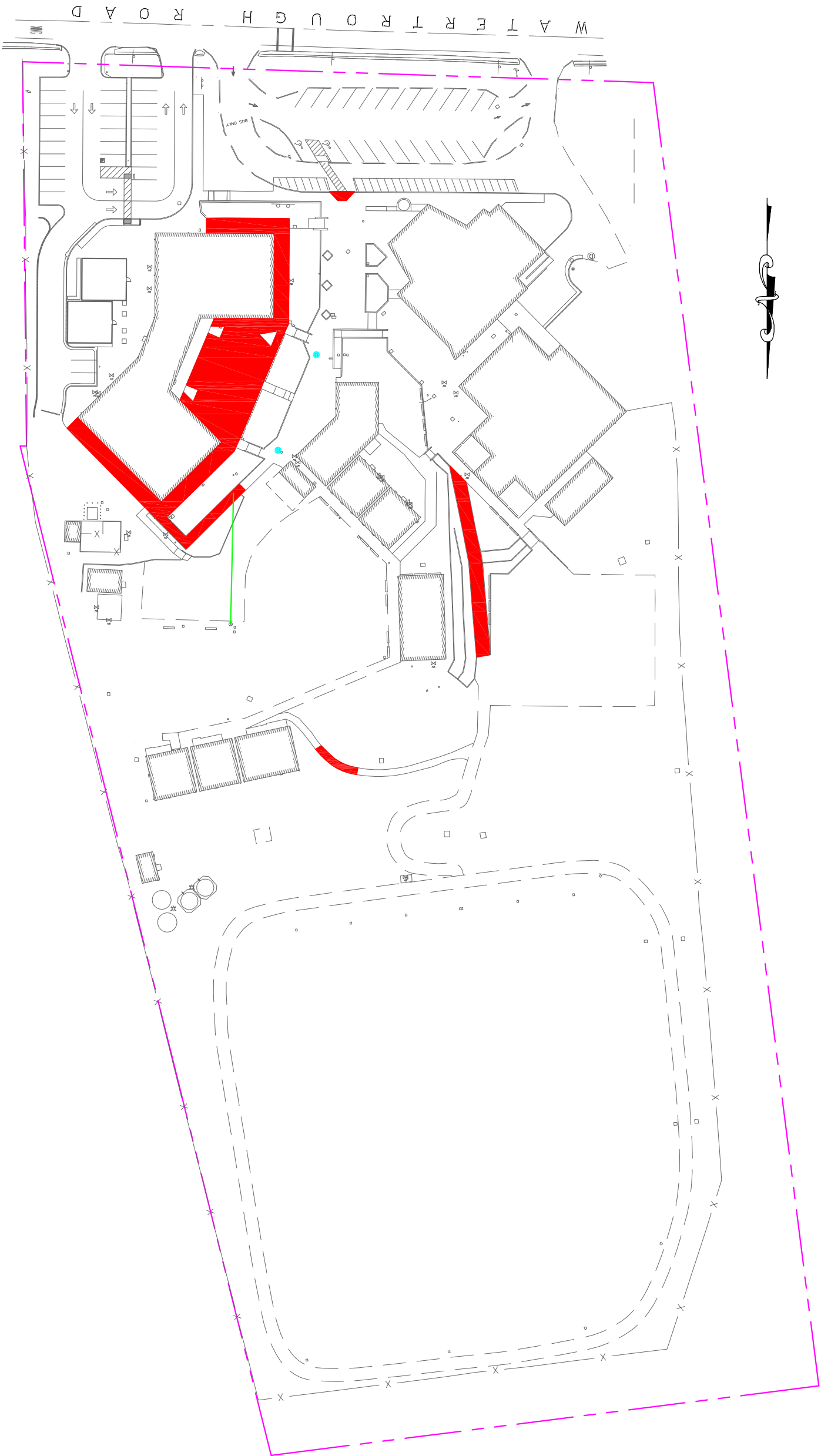
Photo 14






Photo 15

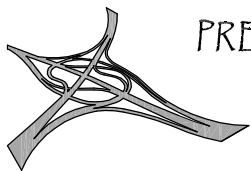


Photo 16



LEGEND.

-  AREAS FOUND WITH SLOPES EXCEEDING ADA CODE
 -  STORM DRAIN INLETS FOUND WITHIN PEDESTRIAN WALKWAYS WITH NON-ADA COMPLIANT GRATES
 -  EXISTING SANITARY SEWER WITH KNOWN ROOT INTRUSION ISSUES
- 0 80 160
- GRAPHIC SCALE



PRECISION ENGINEERING
AND
CONSTRUCTION

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**EXISTING SITE EXHIBIT
TWIN HILLS MIDDLE SCHOOL
1685 WATERTROUGH ROAD
SEBASTOPOL, CA 95472**

Date:
01/16/2012

Scale:
1" = 80'

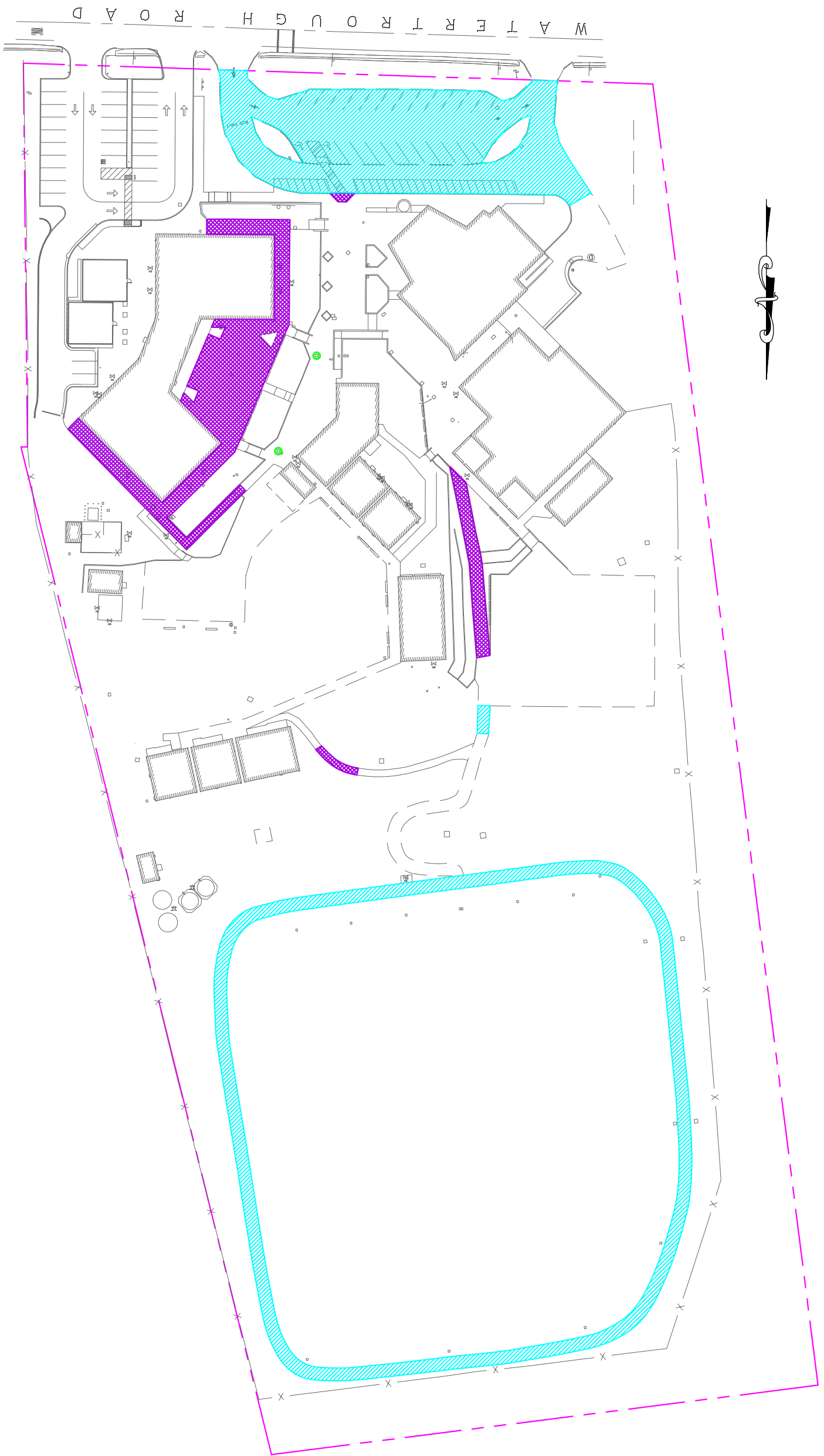
Design: **TRL** Check: **TRL**

PEC Job No.

PEC 11-041

Drawing Number:

**EXHIBIT
1**



LEGEND.



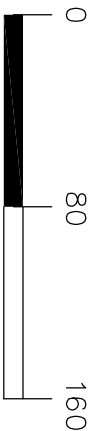
REMOVE AND REPLACE ASPHALT



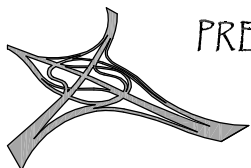
REMOVE AND REPLACE NON-ADA
COMPLIANT FLATWORK



REPLACE STORM DRAIN INLET GRATE
WITH ADA COMPLIANT GRATE



GRAPHIC SCALE



PRECISION ENGINEERING
AND
CONSTRUCTION

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**RECOMMENDED SITE
IMPROVEMENTS EXHIBIT
TWIN HILLS MIDDLE SCHOOL
1685 WATER TROUGH ROAD
SEBASTOPOL, CA 95472**

Date:
01/16/2012

Scale:
1" = 80'

Design: **TRL** Check: **TRL**

PEC Job No.

PEC 11-041

Drawing Number:

**EXHIBIT
2**

Appendix E

Landscaping Assessments

Overview

In late 2011 visual assessments of the three campuses was conducted by landscape designer to review existing conditions as they relate to the both hard-scapes and soft-scapes at each site. These assessments were based on a review of existing plantings and landscape elements. The following materials are suggestions for more thoughtful landscaped campuses.



Sentient Landscape, Inc.
12.05.11

Twin Hills School District
Landscape Narrative Introduction

How can ecological landscape strategies be incorporated into site planning and renovations for schools?

The surrounding environment of a school can have dramatic impacts on creativity and the drive to learn. Access to sunlight, fresh air, views, and ideally immersion in diverse terrains and plantings can significantly enhance well-being, curiosity, and ultimately performance for both children and adults. The potential for Twin Hills, Apple Blossom, and Orchard View schools is to synergize these design opportunities with an ecological landscape approach, enriching curriculum and interpretive site experience while creating an inspiring context for learning.

Nature is one of our first and most potent teachers. By using nature as a model ecological landscapes can demonstrate how to improve water quality and protect watersheds, build living bio-filtering soils with compost and mulch, establish site appropriate, functional, diverse plantings using natives as a base, use less water, reduce maintenance and fuel consumption, reduce or eliminate the use of synthetic pesticides with integrated pest management strategies, grow, harvest, process and even market food and other resources, etc. The list is limited only by our imagination.



Apple Blossom School

Site Landscape Existing Conditions, Recommendation and Design Ideas

Apple Blossom School Site Areas

1. Grassy Areas
2. Mature Border Plantings
3. Play Areas
4. Garden
5. Creek
6. Watertrough Frontage and Entry Driveway
7. Other Areas

Grassy Areas

The Apple Blossom campus incorporates a central grass courtyard ideal for multi-use activities and well connected to classrooms, gardens, and picnic table gathering area. Other landscape areas between classrooms include significant areas of grass. Selectively reducing or eliminating grassy areas, prioritizing by use will result in improved, water-efficiency and reduced maintenance benefits. Grass areas less than 10 feet in width are good candidates for lawn replacement since they are not as useful for class activities. Alternatives to grass areas include rain flow through gardens that filter and meter stormwater. (Directing down spouts will also reduce building maintenance.) Other lawn replacement strategies could include pervious mulch or gravel patios, covered outdoor work and gathering areas directly adjacent to classrooms, and installation of drought tolerant or otherwise functional theme gardens like culinary and tea herbs or butterfly habitat. In the main grass lawn, mid stature deciduous shade trees could be added to the south side to create shade for this multi-use area.



Selectively Convert Lawn

Mature Border Plantings

We recommend supplementing and renovating existing mature plantings and undeveloped areas with a native based drought tolerant plant palette that includes habitat value, edibles, fragrance, or otherwise functional plants while meeting low maintenance, kid safe, high visibility campus parameters. Educational signage that identifies plants and related functions can facilitate and enhance an interactive landscape experience.

Existing landscape areas along the central east west connecting pathway include mature border plantings along the north sides of classrooms including a mix of drought tolerant, shade adapted natives and exotics. Approximately half of the landscape areas are grass. Planting areas on the east side of the school are primarily undeveloped or established in grass.

There are wine barrel planters and wooden planter boxes at the parking drop off area and in front of administrative buildings. If future planning involves the renovation of sidewalk / entry replacing wooden planters with larger plumbed and drained in-ground or raised planters that can accommodate shrubs or even shade trees is recommended. Additional vegetation would soften the school entrance. Raised planters walls could double as bench seating.

Grading in Planting Areas:



Remove soil around buildings

In many cases soil and/or mulch is mounded up against buildings. All soil and mulch should be graded to allow for a minimum 6" gap between all wooden construction elements even when covered in stucco.

Play Areas

Grass sports fields, asphalt sport courts, and a play structure are the emphasis of the site programming on the eastern side of the campus. Landscape infrastructure include a covered picnic area, uncovered bench seating adjacent to the asphalt sport court, and a partially shaded grassy slope above the play structure. Some existing benches will need to be replaced within the 10 year development program.

Design concepts have been proposed for some of the planting areas adjacent to the asphalt play yard. Existing shrubs would be removed and the area would be converted to low maintenance, drought tolerant, native based habitat border plantings. The colorful effect will cheer the area. In the spirit of reducing lawn areas and adding landscape interest, segments of the western end of the grassy slope could also be converted to border plantings and continue the theme and improvements along the eastern side of the school grounds.

Additionally, a series of arcing seat walls could be installed to create an informal outdoor stage and seating area above the play structure.

Garden Area

A fenced garden area with raised wooden planter boxes is tucked into the south end of the campus including some perennials and fruit trees. The garden has direct access to a shady area dedicated to compost building and materials stockpile area to the south.

The wire fencing offers an opportunity to create an edible, fragrant, green wall that builds habitat, with functional vine plantings and climbing annual crops. Foundation plantings both inside and outside the fence can be supplemented with beneficial insectory species, demonstrating IPM (integrated pest management) strategies and adding to the perennial beauty and educational value of the garden. There are numerous edible perennials (artichokes, perennial kale, kitchen and tea herbs etc, that could be added to the plant palette of the garden and utilized by the children. The shaded space to the south of the garden could be further developed into a soil building and food processing outdoor work area.

Creek

A creek at the south end of the campus is a wonderful resource and could be developed with an interpretive creek side trail and outlooks, highlighting topics like seasonal water quality, riparian habitat and species, creek restoration, and trail construction. There may be public funding specifically available for watershed restoration improvements..

Frontage and Driveway



A partially landscaped slope, including Liquidambars and Roses, greets visitors at the driveway entrance on the Watertrough Road frontage. This landscape area is primarily featured from the north bound approach and extends up the southern side of the driveway. A second conifer shaded landscape area on the south side of the driveway continues to the parking area. Some of this planter is overcome with English Ivy and other than the conifers it is largely undeveloped. A design concept has been proposed for these areas with the objectives of providing year round foundation and interest , utilizing natives as a foundation while including other drought tolerant habitat species, using drip irrigation, eliminating the use of synthetic pesticides, and using local and recycled materials.

Other Areas

A conifer covered slope at the west side of the campus separates the upper and lower school terraces. The toe of the slope is retained by pressure treated retaining wall that runs its full length, and is beginning to fail in some areas due to age and root intrusion. The slope is traversed by cement ramps and steps that provide access between the two school terraces. Some of the cement work is buckling due to root intrusion. Areas of the slope appear to be sprinkler irrigated. For the most part groundcovers are absent..

Sections, if not all, of the wood retaining wall at the toe of the slope will have to be re-engineered and replaced within the 10 year development program. Boulders can be an appropriate alternative to the cement ramp curb that would accommodate some root intrusion that is currently affecting the retainment curb.

If the sprinklers are still functional they could temporarily be activated to help establish a variety of fire resistant, native woodland wildflowers and other perennials with seeds and bulbs for a pleasant ground cover.

Irrigation

We recommend that the irrigation system be assessed looking for opportunities to maximize water efficiency. Upgrading to weather sensitive controllers, upgrading sprinklers to rotators, metering use with a dedicated irrigation sub-meter, and using drip for all perennial landscapes and gardens are recommended strategies for improving irrigation efficiency.



Sentient Landscape, Inc.

Apple Blossom School Parking Entry Slope



Flower Carpet Rose "Amber"



Cistus sp. - Rock Rose



Baccharis p. 'Twin Peaks' - Coyote Brush



Lavandula sp. - English Lavender



Arctostaphylos Howard Mc.Minn - Manzanita



Ceanothus 'Emily Brown' - Wild Lilac

Calmagrostis 'Karl Foerster' -
Feather Reed Grass



Apple Blossom School Parking Entry Slope



Mimulus aurantiacus- Monkey Flower



Pennisetum spathiolatum



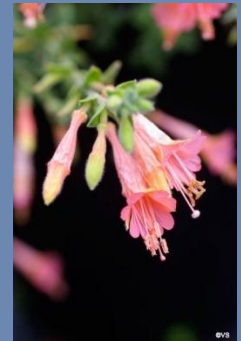
Salvia sonomanensis



Lavandula Stoechys- Spanish Lavender



Penstemon heterophyllus-
Native Penstemon



Zauchneria sp.-
California Fuchsia



Achillea 'Terra Cotta'- Yarrow



'Hopley's' Ornamental Oregano



Phlomis lanata-Jerusalem Sage



Thyme



Erigeron karvinskianus-
Santa Barbara Daisy



Apple Blossom Before



Apple Blossom After



Twin Hills School

Site Landscape Existing Conditions, Recommendations, Design Ideas

Twin Hills landscape areas can be broken into five main categories:

1. Recently installed
2. Planned landscape areas
3. Established landscape areas
4. Grass, including the sports fields and the flat grassy courtyard area adjacent to the lower classrooms
5. Open undeveloped areas

Recently Installed Landscape

Recently installed landscape includes the entry parking slope above the lower parking area. This landscape emphasizes the use of native plants as a base palette and supplementing with climate appropriate, drought tolerant exotics that attract birds, butterflies, and other beneficial organisms. Further consideration was given to low maintenance and long lived plant selection that offers year round interest.

Planned Landscape Areas

Planned landscape areas include the Watertrough frontage planter, the administration rainwater feature, courtyard tree planters, the grassy slopes below the upper classrooms and undeveloped planting areas around classrooms above the auditorium. Planned landscapes are designed for low, synthetic pesticide free maintenance and focus on utilizing recycled and local materials. Plant palette will continue the theme of recently installed planting emphasizing habitat and functionality but will also include other plants with educational value/use including fragrance, edibles, medicinals, dyes, cordage and basketry, etc.

Educational signage labeling plants and describing function and/or listing beneficial fauna attracted is a simple way to enlist educational interaction with the landscape. Graphic as well as written descriptions offer easy-access learning and meet multiple learning styles.

The conceptual design for the existing rainwater basin in front of the administration building would capture cascading storm water incorporating, boulders, filtering aquatic plants. The inclusion of a relevant, whimsical or otherwise inspiring sculptural element (Patrick Amiot) would add to the charm and school welcome experience. The rain garden would be topped up with water year-round to ensure an attractive entry display.



There are landscape areas throughout the school campus which are not currently planted and have no planning in place. They include foundation planting areas around buildings and several wooden terraces on the north side of the gymnasium. Ultimately it would be a campus improvement to plant these areas building on the theme of low maintenance, drought tolerant, long lived and functional plant palette.

Terrace planters needing planting

Established Landscapes

Existing landscaping includes some well-established and mature perennial plantings adjacent to the lower parking lot pathway, the administration building/ auditorium, and the gymnasium. The existing perennial plantings include a mix of a few natives and other drought tolerant exotics. Several plants are regularly hedged. In general landscape areas look well maintained, with minimal weeds, though all planting and picnic areas require another 2-3" of mulch cover in open areas. The landscape areas adjacent to the administration and gymnasium have good plant structure that could be enhanced / filled in with additional plantings and some removal of overly hedged and/or woody plants. These areas are primarily watered with drip irrigation.

The sloped planter on the north side of the lower parking lot (under newly installed P.V. array) is densely planted with several woody and heavily hedged species. Rosemary along the lower retaining wall and New Zealand Flax (Phormium) at the western stairway have required aggressive hedging to keep the path clear.



Most species prefer full sun but are now shaded by the PV array at this location. This planter is irrigated with water intensive sprinklers though likely requires little watering because of drought tolerance and maturity. We recommend renovating this planter to carry the same native based, low maintenance, functional plant palette that is planned for the surrounding frontage and parking landscape areas and that the irrigation emission be upgraded to drip for long term water efficiency.

Suggested landscape renovation

Grassy Areas

The ample green-space and sports fields in the rear portion of the Twin Hills campus are prime for landscape development. Future infrastructural expansion plans for this general area may include (life skills) classrooms and a library. We recommend creating a rain proof outdoor classroom with seating, work tables, and a sink to compliment a multitude of subject matters and projects that is adjacent to classrooms and the existing, well-positioned, lawn in this area so larger projects/events could spill out onto the grass.

Open Undeveloped Areas

Large and sunny undeveloped areas on the campus above the sports field are prime for educational landscape possibilities including terraced food gardens and orchards. Perennial based *food forests* provide year round landscape foundation and interest but also create the potential for life skills/ experience programs like farmers markets (perhaps for student families,) CSAs (Community Supported Agriculture,) and supplementing the school cafeteria menu with vegetables and fruits. The garden area could provide a inspiring outdoor learning context with opportunities to experiment with rainwater harvesting (tanks, ponds, aquaculture etc.) building with earth (i.e. cobb benches, sculptures) food processing, medicine making, fiber crafts including baskets and cordage, pigments etc.. The incorporation of a shaded outdoor classroom, work benches, open work space, and tool area facilitates classes on compost, worm boxes, and other soil building techniques, propagation, harvesting, preserving, and adding value to crops. The addition of a green-house would provide the possibility of year- round propagation. Depending on the scale of the green house structure it could accommodate rainy day classes. A central location (rather than a remote or out of sight position) for a school garden seems to inspire garden and curriculum vitality and a sense of well-being.

The sloped area between current campus infrastructure and sports fields is well suited for capturing site drainage and downspouts and infiltrating and filtering storm-water in rain gardens and bio-swales. Rain harvesting topography can be an elegant design feature and can tie in functionally to terraced gardens reducing the watering requirements. We can envision an overall design for the area which includes rainwater harvesting, garden terraces and a transition to terraced seat walls that serve as bleacher seating for the sports fields.

Slope for rainwater harvesting and terraced gardens



Proposed acquisition of neighboring property / apple orchard, affords the opportunity to expand curriculum with nature walks and other farm related studies. There is a seasonal creek/drainage on the north side of the sports field beyond the fence. It is heavily overgrown with invasives (bramble, etc.) though if restored, and available for access by students, would provide a riparian habitat as part of the nature walk. There may be funds available for this improvement. Current student "trails" in undeveloped areas of the Twin Hills campus can inform the future planning of upgraded pathways and connectivity between activity areas.

Infrastructure:

Many of the retaining walls are constructed with pressure treated wood which is not recommended for skin contact. All in-ground wood retaining walls have a practical/ functional lifespan of approximately 15 years (some retainment is well into this lifespan.) Some walls, walkways, and the net sport court are being heaved by Redwoods or other large trees. Site trees are healthy and well maintained. Many of the in-ground wood retaining walls will likely require replacement within the 10 year development plan. In-ground or ground contact wooden hardscape elements should be avoided whenever feasible. Root systems of large trees will need to be accommodated when retaining walls and flatwork are improved. In some cases the use of dry-stacked boulders are an appropriate solution to retaining in areas where root encroachment is anticipated. In other cases, replacement of wooden retaining walls with concrete seat walls is a good opportunity. Incorporating an occasional seating boulder adds interest. Concrete seat walls and even flatwork may offer the opportunity to include student designed and/or crafted ceramics, tiles, stamp patterns, etc

Some of the concrete and asphalt flatwork throughout is cracking or otherwise weathering, especially in areas that convey drainage. At least one cement area accumulates 2" or more of water in the wet season. Some drainage and flatwork improvements should be included in 5 and 10 year planning.

Incorporating an amphitheater with terraced or bleacher seating and stage for school gatherings and performances would be a wonderful addition to the range of possible school activities. Comfortable experience sitting for this feature would be central location, sizing and consideration to solar orientation to reduce glare. . If the grassy slope to the west of the upper classrooms were to be used as an amphitheater as suggested by school staff, shading the audience and protecting from western glare would be an important design feature. Shading could be addressed with a shade canopy, additional PV panels or with shade trees (planting areas would need to be created for large trees.)

Irrigation:

The school irrigation emission system combines drip irrigation and sprinklers. Both appear to be well maintained, however sprinkler heads could be updated or converted to drip or rotators for improved water efficiency. Some areas are controlled by functioning but antiquated controllers, some areas are watered by hand control of valves, and some areas are watered by battery controllers. Weather sensitive controllers, now required in California for newly constructed or renovated commercial landscapes greater than 2500 sqft, would yield significant improvements in water efficiency while reducing the current hand watering regime. At least one 12' asphalt cut is required to replace all the battery controllers with weather sensitive controllers. Many planter areas are not supplied with irrigation pipe or sleeves, thus requiring tunneling under walkways and walls.

We recommend assessing and upgrading all irrigation components for maximum water efficiency.



Sentient Landscape, Inc.

Twin Hills Middle School Frontage and Parking Lot Planters



Rhamnus californica 'Mound St. Bruno'



Ribes speciosum - Flowering Gooseberry



Correa pulchella-Australian Fuschia



Polystichum munitum- Western Sword Fern



Miscanthus transmorrisinensis



Abelia g. 'Edward Goucher- Glossy Abelia



Loropetalum chinense

Twin Hills Middle School Frontage and Parking Lot Planters



Ribes sanguineum-Flowering Currant



Heuchera
'Palace Purple'



Calamagrostis 'Karl Foester'



Carpenteria californica-
Bush Anemone



Festuca mareii



Mimulus aurantiacus-
Sticky Monkey Flower



Baccharis 'Pigeon Point'



Ceanothus Anchor Bay

Twin Hills Middle School Frontage and Parking Lot Planters



Arctostaphylos 'Emerald Carpet'



Thymus sp.-Thyme



Phlomis lanata- Jerusalem Sage



Arbutus Marina- Strawberry Tree



Twin Hills Before



Twin Hills After



Orchard View School

Site Landscape Existing Conditions, Design and Improvement Ideas

The following is a general outline of Orchard View School existing site areas:

1. Classroom and administration courtyard
2. Play areas
3. Other areas
4. Garden at lower campus

Classroom and Administration Courtyard

The Orchard View School upper campus simple site layout orients classrooms, offices, and the school front entry around a central grassy courtyard with perimeter pathway. The grass is level and well positioned for classroom and mixed use activities. A beneficial insectory planter currently showing off its winter flower display separates this core area from the entry parking along with a recently installed PV array canopy. Also adjacent to the grassy courtyard are two outdoor work and gathering spaces with picnic tables and gravel mulch, one of which is completely covered and the other partially shaded by a recently installed PV array. Wooden design elements are predominant in the courtyard landscape including raised wooden planter boxes some of which are tied into bench seating, trellising, and classroom entries.

A shaded grassy area could be created by adding a cluster of small scale shade trees to the south end of the grassy courtyard without impeding the solar access of existing PV panels. Adding trellising or PV canopies at the south end of the sports field might be beneficial.

Passive climate control with shade trees and foundation shrubs would reduce the heat gain of currently exposed west and south facing glazing and walls. Of note are the structure in the northeast corner of the upper campus and the large expanse of south facing walls on the north side of the sports field. Shade trees would provide comfortable spectator seating.



Passive Climate Control for West Facing Glazing



Entry Insectory Planter

The entry insectory planter is a focal point and a buffer planting. Though beautiful in its present form, it will require ongoing pruning and or some fastening to the fence in order to keep the path clear. Alternatively the pathway at the north end of the courtyard could be widened to better accommodate the mature form of the existing planting or some of the larger species could be transplanted to another campus location.

The wooden landscape elements including the wood fence are currently in good condition, not showing signs of deterioration. The raised box plantings are primarily drought tolerant exotics watered with drip irrigation. Many planters require planting and could be filled in or upgraded to include more natives, bird and butterfly plants, etc. Many of the boxes could be filled with more compost and soil to better support trees and perennials. Raised planter boxes will require a minimum annual soil feeding regime. Wood with soil contact and moisture has an approximate 15 year lifespan. Ultimately in-ground planters require less maintenance, improve the health of trees, large perennials, and vines and should be considered whenever appropriate. Climate control for an exposed section of the west facing courtyard classrooms/ offices with glazing would greatly benefit from deciduous shade via trees or trellising.

There are available planting areas around the building perimeter that are currently undeveloped and if planted with drought tolerant, low maintenance foundation plantings, would significantly soften the infrastructure and make the overall environment more inviting. One notable undeveloped area at the east end of the entry parking could be landscaped to enhance the driveway entry experience picking up the lower driveway native based woodland planting concept. (see proposed landscape sketch.)

Gravel mulch, at the PV array installations and the connection between the grass courtyard and the sports fields needs to be amended by 2-3" or more, especially in areas of poor drainage. Some downspouts could be re-directed to improve drainage.



Areas needing amended mulch

The development of proposed classroom courtyard space adjacent to the central grassy area could feature a flow through rainwater garden that accumulated water from classroom roofs and let it flow over a sculpture, celebrating this under-recognized and precious resource.

Play Areas

Orchard View shares the Apple Blossom sports fields, asphalt sport courts, and new play structure to the south of the classroom courtyard. Additional parking make up the remainder of the southern half of the upper school terrace. The flow from the Orchard View grassy courtyard and classrooms to the sports field seems somewhat constricted. This condition could be alleviated by installing a large gate in the wood fence that currently separates these two areas.

The classroom walls at the north side of the sports fields are completely exposed to southern exposure. A planting border including some shade trees and a ball repellent mix of habitat shrubs and perennials would benefit climate and sound control in these classrooms and supplement the sports fields with functional landscape interest. This border planting would reduce energy expenses and provide a comfortable spectator seating area if benches were incorporated.



Possible location for Obstacle/ Ropes Course

Large conifers shade the west slope of the campus above the upper driveway. This area potentially provides an ideal setting for an obstacle/ ropes course including slack lines and other personal and team challenges and is well located with its adjacency to the sports fields.

In the current layout, OVS includes a garden area on the western side of the core structures. This garden area incorporates a small orchard planting, raised beds and other planting areas. It has excellent exposure and potential as a productive and dynamic permaculture garden. Given its proximity to the OVS classroom, it is well located and if this location is not available with future infrastructural expansion plans, another similar site location would be a benefit.

Other Areas

Orchard View School also includes the fenced garden and outdoor classroom on the lower campus. Despite its somewhat prominent position at the entry of the Apple Blossom campus, the garden is fairly discreet. The area includes a wooden fence with border planting, raised wooden garden beds, storage building, low tech green house, picnic tables and a shaded straw bale gathering area. This garden seems to both reflect and accommodate the involvement of children and in a relatively small space affords a wide range of use areas and microclimates. Plantings in the lower garden can be supplemented with a perennial based mix of drought tolerant edibles, medicinals and teas, fiber, habitat, and otherwise functional plants. Pathways and perennial planters could be sheet mulched to reduce weed maintenance and mowing. Structure may need to be replaced.

Irrigation

We recommend assessing all the irrigation components for the campus and upgrading to maximize water efficiency including weather sensitive controllers, upgrading sprinklers to rotators whenever feasible, and drip irrigation for all landscape and garden plantings. We also recommend replacing all above ground anti-syphon valves with in ground minimum 1" globe valves.



Orchard View Before



Orchard View After



Sentient Landscape, Inc.
12.05.11

Twin Hills School Budget Items for Planning

Phase 1 (5 year plan)

Planting/ soil supplement and renovation, drip lines
Rainwater sculpture garden
Retaining walls/ seat walls
 Pressure treated walls older than 10 years
 Failing walls or wooden landscape borders due to rot or root intrusion
Failing flatwork and steps
Rainwater gardens / bioswales
Production gardens and orchard
Outdoor classroom
Irrigation upgrade

Phase 2 (10 year plan)

Planting/ soil supplement maintenance
Retaining walls/ seat walls
 Pressure treated walls currently older than 5 years
Flatwork maintenance
Terraced seat wall bleacher seating for sports fields

Apple Blossom School Budget Items for Planning

Phase 1 (5 year plan)

Planting/ soil supplement and renovation, drip lines
Retaining walls
 Pressure treated walls older than 10 years
 Failing walls or wooden landscape borders due to rot or root intrusion
Rainwater gardens / bio-swales
Irrigation upgrade
Sport court bench
Failing cement slope ramps and curbs

Phase 2 (10 year plan)

Planting/ soil supplement maintenance
Raised or in-ground entry planters
Outdoor classroom
Flatwork maintenance
Creek-side interpretive trail
Arcing seat wall for outdoor performance space

Orchard View School Budget Items for Planning

Phase 1 (5 year plan)

Planting/ soil supplement and renovation, drip lines
Courtyard rainwater garden and sculpture
Drainage upgrade
Irrigation upgrade

Phase 2 (10 year plan)

Planting/ soil supplement maintenance
Raised or in-ground entry planters
Outdoor classroom
Flatwork maintenance

Appendix F

Community Meeting Input Materials Teacher & Staff Surveys

Overview

In fall of 2011 a survey was handed out to both teachers and staff at Twin Hills Charter Middle School and Apple Blossom Elementary. The collected responses have been collated into one survey per school with responses. It is expected that these comments will be incorporated during the modernization projects and will take part in the programming and preliminary design phase of these projects. These general questionnaires were distributed throughout the District with results as follows.

5875 Ross Branch Rd.
Sebastopol, CA 95472
Phone: 707.887-0700
Fax: 707.887-0778

persingerarchitects.com

Apple Blossom Facilities Questionnaire

Persinger Architects is working with the District to prepare a Facilities Master Plan. This plan will encompass the ultimate vision for the school and act as our roadmap for getting there.

This questionnaire is a chance for us to hear from you about your school. What problems it has and what features you appreciate most and what features you would like to see in the future.

- A. **The Vision: Tell us a little about what you would like to see the Master Plan accomplish. "Big Picture" things like "improved technology" or "warm and welcoming feeling", "meeting spaces", "media-library", etc.**
- School wide clock system/bells for dismissal, etc.
 - We need a private comfortable place to meet with other teachers, school personnel, and parents. A place with computer access, white boards, tables, chairs etc.
 - The Library needs a makeover; more books, more inviting, and more exciting for the students to visit.
 - Improved Technology
 - Maintain School's neat and welcoming feeling; preserve open/garden spaces as part of a "healing" environment.
 - Preserve large play areas for kids.
 - Expanded Library and Media Center
 - We need more books added to the Library and also computer based research space.
 - No Media Library. We need more technology in the classroom. T.V, projector, laptops, or ipads.
 - Document cameras for every classroom. These are great tools for reading. Transparencies are bulky.
 - Update Rooms#25-#29
 - Media library and sound technology lab
 - Meeting spaces would be nice to have
 - Teachers need a private space/lounge
- B. **What are some of the nicest qualities of the school now, qualities that we want to maintain.**
- Garden
 - The front of the school with the bell tower and planter boxes.
 - Creative and artistic displays
 - Clean campus
 - Friendly and responsive staff
 - Garden area near library
 - Nice open quad area, and view towards garden
 - Quality of playground structures especially upper playground. The redwood trees lining the ramps are nice.
 - The sidewalk area in drive -thru is a nice safety improvement.
 - Green open spaces and trees
 - I enjoy the Small town friendly feel, adequate play areas, and eating space for the kids.
 - Art Facilities
 - Small country school atmosphere

- I appreciate the aids in the classrooms.
- garden, library, and P.E. are all great
- The MUR is good and some of the classrooms are lovely and have good light.

C. Site Work; what work needs to be done on site:

- 1) Parking/ Pick up and drop off:
 - It is very high maintenance involving many staff members and waiting excessively.
 - Too many cars in a small space! Not sure we can do anything about that except encourage patience.
 - Drop off seems to go well, but pick up can be a nightmare, especially in rainy weather.
 - Sometimes I wonder if part of the lower playground could be parking and current parking turned into playground.
 - The pickup system is really tough, please fix.
 - A better flow
 - Remove stop painted on pickup lane because parents "stop" and block drive through/pick up.
- 2) Playgrounds/ fields:
 - Need Upper playground- overhang to eat under for upper grades with tables and benches
 - New paint on blacktop for 4 square, hopscotch, class lines, and new games.
 - We need separate play area for kindergarteners
 - Lower sand box area needs help. Replace boards, fill box, and trim trees.
- 3) Drainage:
 - There are sewage issues near the kindergarten classrooms.
 - One time I remember in the parking lot I waded through 4" of water, but usually it is not a problem.
- 4) Other:
 - A school wide clock and bell system!
 - Relocate the pre-school
 - It would be nice to have a central supply area for paper
 - Some of the sidewalks could be improved at #25 and #15.
 - We need conference space or meeting rooms
 - Adequate phone system. All phones should be able to call all classrooms
 - Some ceiling tiles need to be replaced
 - Work on rain issues; mold in staff room smells, replace cabinet doors, and paint,
 - Storage?

C. Technology: what works, what doesn't:

- 1) Phones:
 - Some Static in phone lines. Intercom must work in all rooms.
 - School has two lines, so when they are busy we cannot use the phone.
 - Phones do not work when power is out
 - It would be nice to have blinking light when you have a message
 - I can't call out consistently
 - Phones do not indicate if there are messages
 - Cordless set ups
- 2) Computers/ internet:
 - I would like a copier to be on the network so I can print to it from class.

- Wireless in all campus areas
- I would like to have 3-4 computers in my room to use Lexia and other programs to help struggling readers and do research with students.
- We have outdated software on computers
- We need network or tablet centers in the classroom
- Classroom computers are temperamental.
- Computer lab instruction is challenging for younger students.
- New macs for all classrooms
- Classrooms should all have mini computer labs.

3) TV/ video:

- There should be access to TV stations for student use. Especially for upper grade kids during election times etc.
- Good

4) Other Media:

- Provide "listening centers" for primary rooms.
- ELMO Document camera in all classrooms
- Overheads are too bulky
- Apple TV, ipads (class set) lap top (class set)

5) Other:

- Continue to provide funds for updates for computers, TV's, vcr's, etc. as needed
- Some chairs are safety hazards for the students. Four legged chairs would be better.
- All of this technology should be discussed and put into a long-term plan so we can keep up as current technology develops. Soon I think our students will be using ipads.

D. Finishes: Finishes that need replacement and ideas for the new finishes:

1) Floors:

- I like carpeting for primary teachers
- Old carpets are smelly and should be replaced
- I like carpet in the rooms it keeps things quieter
- New hinges on cabinets

2) Walls:

- Ok. Paint walls as needed
- Loose partitions in the 4th/5th hallway- dangerous but useful. Should stay, but be fixed.
- Replace some walls that have "patched" sheet rock under b. board paper.
- Some walls you can't hang stuff on.
- Fix walls that are patchwork

3) Ceilings:

- Old light shields- cracking and falling, safety hazards

E. Infrastructure: Problems with main electrical service, plumbing etc...

1) Electrical Power:

- Clock and phones need to be all on the same system
- More electrical to POD classrooms

2) Plumbing:

- There are sewage drainage problems in the kindergarten area
- Toilet in office could flush with more power
- Hot water located somewhere for use in classrooms maybe sinks in classrooms?

- Not a lot of staff bathrooms for a staff our size especially when access is to parents and other schools.
- Sinks don't drain well.

3) Other:

- Need doors that lock from the inside for code red drills in all classrooms.
- Cement our Walkway guardrails
- Heat in the restrooms
- Stairs in front of room 15-not to code. 2 staff members have been injured there!
- Need storage in classrooms by playground

F. Other: Misc. changes not covered above:

- The fire alarms are unbelievably loud
- Clocks need to be on the same system
- Over hangs installed over all doors exposed to weather.

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Twin Hills Facilities Questionnaire

Persinger Architects is working with the District to prepare a Facilities Master Plan. This plan will encompass the ultimate vision for the school and act as our roadmap for getting there.

This questionnaire is a chance for us to hear from you about your school. What problems it has and what features you appreciate most and what features you would like to see in the future.

A. The Vision: Tell us a little about what you would like to see the Master Plan accomplish. "Big Picture" things like "improved technology" or "warm and welcoming feeling", "meeting spaces", "media-library", etc.

- More Technology in the Classrooms (Student Computers, Internet access)
- All teaching spaces need to be quiet, fully equipped, and useable.
- Library needs some work
- **Do not** need media or library center
- I pads for all!
- Need building with art, workshops....etc.
- Science lab will need to be remodeled in the future
- I would like a building for art, sewing, and woodworking. Hands on electives.
- Need meeting rooms
- HVAC needs to work properly
- Pod classrooms need improved plumbing, sound proofing, more storage, new carpets, and water sinks.
- Get rid of the Water trough
- New gutter installation
- Improved Technology
- New computers

B. What are some of the nicest qualities of the school now, qualities that we want to maintain.

- Maintain our document projectors and DLP Projectors
- Wide open Spaces used for activities and to congregate
- The quad
- The picnic tables and umbrellas
- The fields and the trees
- Landscape, multi user room, and the kids!
- Love the newly paved parking lot
- Love the solar!
- Camaraderie between students, teachers, & Twin Hills Staff & administrators
- Blue metal roofing
- Organic natural feel, spread out campus, community feel

C. Site Work; what work needs to be done on site:

- 1) Parking/ Pick up and drop off:

- Can any more be done?
 - Pave the road and parking areas on the east side of campus
 - Parking and Pick up should be streamlined for easier access and a plan to prevent after school traffic jams.
 - Fix road in back of upper quad for the staff to park, it's all mud!!!
 - More staff parking that is not under trees
- 2) Playgrounds/ fields:
- Ball Walls, Swings/Bars (Taken from here to Apple Blossom). Another Basketball/Volleyball court. Full size track w/ Bleachers to watch games. Equipment for kids to play on/with
 - I think they can be improved. The tree roots are pushing up the rubber mats in the volley ball court
 - Add a 3rd Basketball court, Re-surface and line existing courts. Line and resurface track. Level surface on volleyball court and all dips and holes on lower field, maintain throughout year
- 3) Drainage:
- Better drainage or protection from rain at outside portables
 - In front of the copy room there is a huge puddle during rains
 - Put Plants in tank in front of School
 - Where are all the gutters?
 - When you install new overhead/roof, you need to install gutters, when it rains it spatters all over our clothes.
 - Need drainage off solar panels
 - Need Drainage in front of office
- 4) Other:
- Real Walls in the 2 main Pods, so voices do not carry to adjacent rooms.
 - More Storage for teachers
 - Get rid of moldy portables.
 - Skylights for dark classrooms
 - Fix the all-call systems, too loud and disruptive
 - Install drop down basketball goals and volleyball courts. Net system in MUR
 - Replace Gravel Path to rooms; 24, 25, 26 with concrete to make it more accessible for wheel chairs.

C. Technology: what works, what doesn't:

- 1) Phones:
- Lights on the phones do not blink consistently to show there is a message
 - Messages disappear
 - Lines need to be placed near teachers desk
 - Need better messaging system
- 2) Computers/ internet:
- Computers are old in the library.
 - Need more wireless access points
 - Newer equipment
 - They are fine
 - Need updated software!
 - Not enough in individual classrooms
 - Replacement of teacher equipment as it ages

- Computers are too old to get the new version of firefox

3) TV/ video:

- They are fine
- Old tv's in some classrooms
- Needs to be connected to projectors

4) Other Media:

- It is good
- What about ipad or ipod touch technology for every student? Maybe we can integrate it with the curriculum?
- New doc cameras were replaced and are working as warranty promised
- Need Speakers

5) Other:

- Sound- too much spill over from other classrooms
- Need good computer speakers
- School Wide Clock /bell & intercom system- We need one! We need alarms reconnected

D. Finishes: Finishes that need replacement and ideas for the new finishes:

1) Floors:

- In elective rooms we need more appropriate flooring for electives
- New carpet in all rooms.
- Boys bathrooms need new tile
- Gym bathrooms need new flooring
- Science floor needs to be redone
- New carpet or vinyl for all floors
- New carpet in Library

2) Walls:

- New freshly painted walls
- Sound Proofing!!
- Painting needs to be done in the staff lounge, library, and computer labs.

3) Ceilings:

- Terrible ceilings in the portables!!!
- Gym bathrooms have horrible ceilings
- Skylights for dark classrooms
- There are more than a few classrooms with no natural light!
- Replace all stained ceilings
- New panels

E. Infrastructure: Problems with main electrical service, plumbing etc...

1) Electrical Power:

- Need more outlets in classrooms
- There is no power or water when power goes out. We need backup generators

2) Plumbing:

- Science lab faucets are leaking and breaking regularly.
- Need sinks in every room
- Upper pod needs more water access

3) Other:

- Need doors that lock from the inside for code red drills in all classrooms.
- Cement our Walkway guardrails
- Heat in the restrooms

- Stairs in front of room 15-not to code. 2 staff members have been injured there!

F. Other: Misc. changes not covered above:

- More windows that open so we can get better ventilation and air circulation
- See list generated by teachers last year
- Update this school for the age appropriate students. This school was built for elementary school children and it shows. Cabinets are too low.
- Uniform Storage
- STOP installing/Building things without input of people working at the school site!! We have moved and removed lockers unnecessarily and torn out brand new construction in the upper parking lot. How would the community feel about this waste of money?
- Everyone learns better in a healthy, "Green" light filled and clean space.
- Skylights, clean windows, working blinds, windows that open, and Fly and bee catchers
- Need doors that lock from the inside for code red drills in all classrooms.

Appendix G

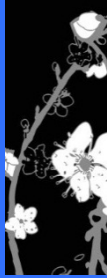
Proposed Exhibit by Site of Construction Projects

Overview

The following exhibits demonstrate in simple fashion what buildings would be demolished and replaced and what buildings would fall into modernization. Site modifications have not been shown on these exhibits.

Apple Blossom Elementary

Site Development

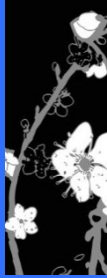


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Apple Blossom Elementary

Site Development



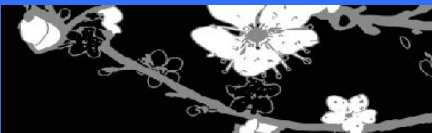
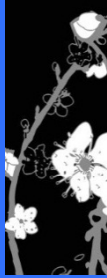
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Twin Hills Middle School

Site Development

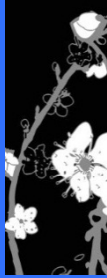


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Twin Hills Middle School

Site Development

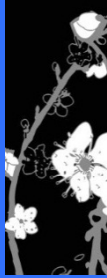


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Orchard View

Site Development

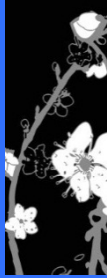


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Orchard View

Site Development



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