CMR 216:08
Attachment A

City of Palo Alto
Construction and Demolition Diversion Program
Year Three Review
March 31, 2008

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Program Overview:

November 1, 2007 marked the third full year for the City of Palo Alto’s Construction & Demolition Debris Diversion Program (C&D). The main goal of the C&D program is to help reduce the amount of construction and demolition debris that is being disposed of in our landfills through reuse and recycling. It is estimated that nearly 22% of all waste generated in Palo Alto is construction and demolition debris.

Year three of the C&D program covered every demolition permit and all building permits with a value of $75,000 and greater that were issued a permit from November 1, 2006 through November 1, 2007. During that time there were 531 projects that were obligated to comply with the requirements of the C&D Program. These projects were estimated to generate 60,000 tons of debris. This marked an increase of 66% from the previous year total of 40,000 tons. This number was established by adding up the totals from the debris management plans that were completed by every applicant prior to the permit being issued. The third year of the C&D Debris Diversion Program saw significant increases in the overall participation as compared to the second year. The total number of tons diverted from the landfill increased from 21,710 to 62,638 tons \(^1\). The number of projects completing salvage increased from 11\% to 16\%. The number of finished jobs that complied with the requirements of the program increased from 33\% to 46\%.

Program Results (November 1, 2006 – November 1, 2007):

Total # of C&D Projects

The second year of the C&D program reviewed and approved 531 total projects for participation in the program. It was estimated that these projects would account for roughly 60,000 tons of construction and demolition debris. The 531 projects that were approved for the C&D program can be categorized into seven different project types that totaled 62,638 tons of debris being diverted from the landfill. Listed below are the 7 types of projects that are covered as part of the C&D program.

\(^1\) It should be noted that the total tons included 31,694 tons from single demolition permit – 901 San Antonio Road. The total C&D tons collected without the 901 San Antonio project is 30,944 tons (still an increase of approximately 9,000 tons from the previous year).
- Residential Demolitions
- Commercial Demolitions
- Residential New Structures
- Commercial New Structures
- Residential Addition/Remodel
- Commercial Addition/Remodel
- Commercial Remodel/Repair

Below is graph identifying the total # of projects by project type.

As seen by the chart, 387 or 73% of all projects were residential. The remaining 144 or 27% of the projects were commercial related projects. Of the 531 projects that qualified for the C&D program 241 or 45% of the projects were finaled. Finaled projects are those projects that completed the job during the third year of the program and submitted all of the necessary documentation (recycling receipts, weight tags, etc...) to confirm compliance with the C&D program. The remaining 290 or 55% of C&D projects were issued a permit but did not complete the project or failed to submit the necessary documentation by the end of the third year (10/31/07). 41 of the 290 projects were sent compliance notices and are currently being handled by Code Enforcement. The chart below illustrates the breakdown of finaled projects:
**C&D Diversion by Project Type**

161 residential projects made up 67% of all finaled C&D projects. 80 commercial projects accounted for the remaining 33% of all finaled C&D projects. However, commercial demolition projects were responsible for generating the majority of material accounting for 79% of all C&D debris diverted from the landfill. Residential projects, including demolitions and remodels/additions accounted for 18% of all tons diverted and the remaining 4% of C&D debris came from new residential and commercial structures as well as commercial remodels/improvements. The chart below illustrates the amount of tons diverted by each type of project. Demolition projects were by far the largest generators of debris combining for 94% of all debris (the exact same percentage from year two).
C&D Diversion by Material Type

The initial amount of debris to be diverted from the landfill during the third year of the program was estimated at 60,000 tons. This number was calculated using the Debris Management Forms from each of the 531 projects that qualified for the C&D program. As mentioned earlier, 241 projects completed the job and submitted all of the necessary paperwork (weight tags, recycling receipts, etc...) to confirm compliance with the program. Based on the weight tags that were submitted by the 241 finalized projects, 62,638 tons of construction and demolition debris was diverted from the landfill. This number increased from 21,710 tons after the second year of the C&D Program. The diverted c&d debris can be categorized into 9 different material types. The chart on the next page illustrates this breakdown.

* 28,794 tons of concrete were reused on site by the project at 901 San Antonio

Concrete represented the largest type of c&d debris being diverted from the landfill, accounting for 38,674 tons or 62% of all materials diverted. Mixed c&d debris (drywall, wood, metal and small amounts of inert) which generated the largest amount of c&d debris during year one of the program generated nearly 9,000 tons or 14% of all materials diverted.

Stevens Creek Quarry accepted the largest amount of c&d debris of any of the approved recycling facilities, accepting 9,723 tons or 16% of all the c&d materials diverted from the landfill. Listed below is a breakdown of the c&d recycling facilities that received the largest amounts of c&d debris. The most notable category is the amount of material that was reused on site. 46% of all debris can completely be attributed to the 901 San Antonio demolition that reused nearly 30,000 tons of concrete on site.

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2 It should be noted that the total tons included 31,694 tons from single demolition permit – 901 San Antonio Road. For reporting purposes the total tons will continue to be shown as 62,638 tons

3 28,794 tons of concrete were reused on site by the project at 901 San Antonio
Salvage

Salvage continues to play an important role in the overall development of the C&D program. One of the requirements of the C&D program is to require that demolition jobs make an attempt to salvage valuable items for reuse. At the end of a building’s life, demolition generates large amounts of materials that can be reused or recycled, principally wood, concrete and drywall. Rather than demolish a building the City’s C&D program is trying to encourage “deconstructing” all or part of the structure. Deconstruction is the orderly dismantling of building materials for reuse or recycling. In contrast to demolition, where buildings are knocked down and materials are either landfilled or recycled, deconstruction involves carefully taking apart portions of buildings or removing their contents with the primary goal being reuse. It can be as simple as stripping out cabinetry, fixtures, and windows, or as involved as manually taking apart the building frame. To date, the number of projects that salvage items for reuse continues to increase but the overall participation rate is still below average. The good news is the participation rate has nearly tripled from 5.5% after the first year of the program to 16% currently. The two most used facilities for reuse were Whole House Building Supply and the Reuse People. The Reusable Lumber Company and personal reuse were other popular options used by applicants. Common items that were salvaged for reuse included: lumber (Douglas fir and redwood siding), bricks, cabinetry and plumbing fixtures.

The main concern with the salvage component of the C&D program continues to be participation. The main reasons that have been attributed to lack of participation include: time, cost effectiveness and lack of outlets for the materials. As the City continues to shift towards more sustainable policies including green building ordinances the practice of deconstruction for salvage will undoubtedly increase in popularity.

Compliance

The main goal for the compliance portion of the C&D program after the second year of the program was to require that all C&D covered projects must be finaled by the Building Department prior to receiving their final inspection. This goal was implemented in year three of the program and has helped increase compliance. At the end of the third year there were 41 projects that received notification of non-compliance. Once a project receives a notification of non-compliance it gets sent to Code Enforcement where it is placed into a citation log and managed by Code Enforcement.
**Recommendations**

As mentioned at the beginning of the report the third year of the C&D Debris Diversion Program saw significant increases in the overall participation as compared to the first year. The total number of tons diverted from the landfill increased from 21,710 tons to 62,638 tons\(^4\). The number of projects completing salvage increased from 11% to 16%. The number of finished jobs that complied with the requirements of the program increased from 33% to 46%. The improvements in the program can be attributed to few main factors:

- The applicants (contractors and home owners) are increasingly becoming familiar with the program requirements.
- Requiring that all C&D covered projects must be finaled prior to getting the final inspection from the Building Department. In the second year of the program only demolition permits were required to comply with this requirement.
- Providing outreach tools as part of the Green Building Kiosk that has helped increase the awareness of salvage for reuse, recycling and other forms of diversion.
- Working with various department committees (ie; Green Team, Environmental Steering and Stewardship Committee) to help develop ideas for ways in which the C&D program can continue to grow as the City moves closer to integrating green building policies into the Municipal Code.

All of these key improvements can be directly related to the increase in the programs success. There is still plenty of room for improvement. Some of the areas that will be focused on for year four of the C&D program includes:

1. Increasing the overall participation in salvage as a viable option for diversion. Some of the ideas for helping with this include:
   a. Bringing in outside personnel to conduct site audits to help the applicant identify what items are salvageable prior to the demolition phase of the project (this idea was discussed after the second year of the program and is still being explored as a possible option).
   b. Look at ways in which incentives can be offered to help increase salvage efforts.

2. Developing a web page devoted strictly to salvage and deconstruction efforts. Currently the C&D program does not provide enough information to assist the general public with options for this type of diversion.

3. Explore of the possibility of implementing a “Resource Recovery Center” for residents to take their used building materials to. Creating another outlet for salvaged building materials will help increase the salvage component of the C&D program.

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\(^4\) Total tons included 31,694 tons from single demolition permit – 901 San Antonio Road