

KEY IMPLEMENTATION STRATEGY: Reducing Project Costs

Since the major opportunity in San Mateo County is to retrofit the existing built environment, the overall goal should be to reduce costs as much as possible and deliver additional non-stormwater-related benefits when applying design solutions. In general, retrofitting green street and parking projects is more costly than implementing new development projects simply because the former have site constraints that must be addressed. For example, there are often extra costs associated with removing existing concrete or asphalt in order to make way for new green space. In some cases, using a “green” approach might cost more, but the ancillary benefits (such as traffic calming, improved neighborhood aesthetics, and a safer pedestrian environment) should also be considered.

The following describes four ways to reduce costs when implementing green street and parking lot projects:

Minimize Existing Impacts

One way to reduce construction costs is to minimize the impact to the existing storm drain infrastructure as much as possible and maintain existing storm drain inlet locations. Altering drain inlet locations and installing new storm drains at intersections can be very cost prohibitive in some projects. In many cases, stormwater facilities constructed up-gradient of existing storm drain inlets may require little, if any, alteration to infrastructure. Many green streets projects in Portland, Oregon were built inexpensively because they minimized impacts to the existing piped infrastructure. For example, the NE Siskiyou Green Street project installed two stormwater curb extensions just upstream of the existing stormwater drain inlets and never touched the existing storm infrastructure. By avoiding any such impact, the project’s overall costs were reduced significantly. Further details of Portland’s green street projects can be found in Appendix A “Further Resources.”



SOURCE: KEVIN ROBERT PERRY - CITY OF PORTLAND

Figure 6-3: NE Siskiyou Green Street in Portland, Oregon avoided alterations to the existing storm pipe infrastructure and was therefore built cost-effectively.



SOURCE: KEVIN ROBERT PERRY - CITY OF PORTLAND

Figure 6-4: SW 12th Avenue Green Street in Portland, Oregon is another downtown green street project that was built inexpensively because it did not impact the existing piped infrastructure.



SOURCE: NEVUE NGAN ASSOCIATES

Figure 6-5: This stormwater curb extension project constructed in Portland, Oregon reduced project costs by leaving the existing street curb in place.

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SOURCE: TIM KURTZ - CITY OF PORTLAND

Figure 6-6: Simple green streets, such as this residential example in Portland, Oregon, convert under-utilized landscape area next to streets into stormwater facilities. Since the improvements consist largely of regrading and planting, the projects can be very cost effective to build.



SOURCE: NEVUE NGAN ASSOCIATES

Figure 6-7: A prime retrofit candidate in San Mateo County. This landscape strip along El Camino Real could be retrofitted with new landscaping and curb cuts to create an inexpensive green street example.



SOURCE: NEVUE NGAN ASSOCIATES

Figure 6-8: This green street curb extension project was funded in conjunction with a pedestrian safety and traffic calming project.

Look for High-Opportunity Projects

When searching for cost effective green street projects, look for candidate sites that have minimal site constraints and maximum space for stormwater facilities. In some cases, there is available landscape space that can be easily regraded and planted to provide stormwater management. In other cases, there are streets and parking lots that have excess asphalt area that can be converted into a stormwater facility at minimal cost. High-opportunity projects also include street and parking lot projects that have willing stakeholders, agencies, owners, or neighbors that can help provide advocacy or funding for a particular project.

Combine Green Streets with Other Street Improvements

Continual capital improvements are needed to maintain street longevity. Asphalt paving often needs to be replaced; curbs, sidewalks, and utility lines need to be repaired; and overall traffic/pedestrian improvements are constantly being planned. The most opportune time to incorporate a green street element is when a street is already planned and budgeted for improvement. Coordinating the efforts between regular street improvements and green street improvements can help reduce the cost of green street implementation by achieving positive economies of scale. In many situations, green street projects can be integrated and budgeted as part of solutions for local traffic problems. For example, stormwater curb extensions can help narrow street widths, provide traffic calming benefits, and potentially be paid for by a non-green street-related budget.

Keep Design Solutions Simple

During the design phase of green street and parking lot projects, it is important to keep the design as simple as possible. Highly engineered design solutions can often increase project costs. Remember, green streets rely on a natural, landscape-approach to stormwater management.

One often over-designed component in green street and parking lot construction is the means by which water gets in and out of landscape stormwater facilities. Over-designed inlet structures not only increase project costs, but they often detract from the aesthetics of a project. Keeping the design simple and allowing water to surface flow in and out of stormwater facilities will help keep costs more manageable. Likewise, using only surface overflow to an existing downstream storm drain inlet, when possible, can simplify a project's design and greatly reduce costs.

Another effective cost saving strategy is to limit the amount of imported hardscape materials. For example, it may be tempting to use deeper concrete walls to facilitate greater ponding depth, but the marginal benefit compared to shallower stormwater facilities, which use less resources, may not justify the additional expense.

With larger construction projects, the designer should balance the total cut and fill on a project. It can be expensive to excavate, haul, and dispose of excess soil.



SOURCE: NEVUE NGAN ASSOCIATES

Figure 6-9: This high-cost, engineered green street example uses a lot of concrete infrastructure, as well as uses an inlet structure that makes stormwater appear to be a waste rather than a resource.



SOURCE: KEVIN ROBERT PERRY - CITY OF PORTLAND

Figure 6-10: In contrast to the example above, a simple cost-effective curb cut allows water to move freely into a stormwater facility without detracting from the aesthetics of the project.



SOURCE: KEVIN ROBERT PERRY - CITY OF PORTLAND

Figure 6-11: This mid-block stormwater curb extension project keeps the existing street curb in place and allows stormwater runoff to overflow back into the street without using any piped overflow structures. The combination of these strategies helped reduce construction costs.