

Many of the new technologies suggested within the guidebook represent a break from traditional stormwater management practices. New technologies represent progress towards a more natural, integrated management strategy. However, with change comes doubt, and some stakeholders fear negative repercussions that may result from adopting these new technologies. Developers, contractors, designers, and regulatory agencies are all undergoing a learning process through which all parties are gaining familiarity with the critical elements of green street and parking lot projects.

In February 2008, the SMCWPPP invited member municipalities within the City/County Association of Governments (C/CAG) to participate in a survey to determine the potential barriers (constraints), real or perceived, in implementing green streets and parking lots within their respective jurisdictions. Participants of the survey were asked to rank several barriers to implementation in order of importance/significance. There were 27 different constraints identified in the survey, which were organized in four different sections, as follows:

- Policy and Communication Constraints
- Site Characteristic Constraints
- Design-Related Constraints
- Construction/Long-Term Maintenance Constraints

Each respondent was asked to rate the perceived barriers on a scale of 1 to 5. A constraint that ranked closer to the value of “1” is more significant than one ranking closer to “4”. The results were tallied and the perceived constraints ranked within each category as shown in the table on the opposite page.

The information gathered from the survey's respondents helped in gauging how to best address their concerns within the guidebook.

However, many of the concerns are policy related and need to be addressed outside of the scope of the guidebook. Addressing these “real-world constraints” is a critical component in providing a region-wide program. This guidebook provides potential solutions, or at least, a basis for discussion of how specific concerns can be mitigated.

### Survey Results

There were 17 responses from 13 different municipalities. The following page shows the actual survey that was sent to various public works staff as well as the tallied results and individual rankings of each potential constraint. Some of the results are fairly typical of most cities looking to implement green street efforts for the first time. Other responses are interesting to report and help reinforce need for this design guidebook.

Those that participated in the survey predominantly expressed concern over policy/programming-related issues as opposed to design-related constraints. Factors contributing to this result could include: 1). People are looking through a lens of creating a very large and widespread approach to implementing green street programs rather than a smaller-scale, start up program; 2). There is not enough design-related information available regarding green streets and parking lots to trigger design concerns; or 3). There was simply more of an emphasis on policy-related questions presented in the survey than design questions.

Regardless, it is important to note that design and policy go hand in hand. The goal of the guidebook is to provide support for building successful demonstration projects that will ultimately supplement future discussion of policy issues associated with the larger and wide-spread application of green streets and parking lots in San Mateo County.

# APPENDIX B: Potential Green Street and Parking Lot Constraints Survey

Participants Survey for the San Mateo County Sustainable Green Street and Parking Lot Project						
<p><b>Directions:</b> Please rate the following constraints in implementing green street and parking lot stormwater projects within San Mateo County. Please rate each of these constraints by circling or highlighting the appropriate numbered box. A rating of "1" means the constraint listed is a significant concern. A rating of "4" means the constraint is not a barrier to implementation. A rating of "5" means you don't have enough information to say whether the item is a constraint. Once completed, please fax or email this survey to Fred Jarvis at EOA. The results of your input will be used to better identify, evaluate, and recommend solutions within the San Mateo County Sustainable Green Street and Parking Lot Design Guidebook. Thank you for your help.</p>						
CONSTRAINTS TO IMPLEMENTING GREEN STREET AND PARKING LOT PROJECTS						
Rating	1	2	3	4	5	
Average Rating	Rating/Responses					Policy and Communication Constraints
1.3	12	1	0	1	1	Cost issues, especially with retrofit projects.
1.4	10	2	2	0	1	Municipalities do not have the staff resources for creating new policy, design, or maintenance.
1.8	6	4	3	0	2	Lack of incentive for retrofit applications. This would include small private parking lots or public streets.
2.1	4	4	3	1	3	Unrealistic standards and goals are placed upon municipalities by elected officials or policy makers.
2.3	4	4	5	2	0	Lack of municipal staff experience and understanding of landscape-based stormwater design.
2.5	3	4	1	4	3	Some existing municipal codes or policies prohibit use of roadside swales or alternative stormwater designs and don't allow narrowing streets due to emergency vehicle access concerns.
2.6	2	3	4	3	3	These types of projects are not a priority for our municipality.
3.0	0	5	2	5	3	Concern about trying new stormwater management techniques that we are unfamiliar with (risk aversion).
3.3	0	2	7	6	0	Presentation of current guidance/technical information is not user friendly .
3.3	2	3	6	4	0	Difficult to communicate or lack of consensus between affected municipal staff (public works, planning, fire, transportation, etc.).
Rating						
					Site Characteristics Constraints	
1.9	5	5	2	1	2	Not able to infiltrate water because of impermeable soils.
2.4	3	6	3	3	0	Steep slopes in some areas.
2.5	2	4	4	2	3	Conflict with existing utilities.
2.8	6	2	5	2	0	No extra space available for stormwater treatment structures.
Rating						
					Design Related Constraints	
2.1	2	7	4	0	2	Driveway locations along streets limit a continuous stretch of landscape area for potential stormwater facilities.
2.4	2	6	3	2	2	The need for parking trumps the need for landscape space.
2.5	2	3	2	1	7	Potential impact to pavement subgrade from migrating infiltrated water
2.5	4	5	3	1	2	Concerns about the use of pervious paving.
2.6	0	5	6	1	3	Limited variety of design options.
2.7	2	3	5	4	1	Lack of design firms knowledgeable about landscape stormwater design.
2.8	1	4	5	3	2	Lack of local stormwater demonstration projects.
4.0	1	0	3	4	7	Existing built stormwater projects are poorly designed/constructed or exhibit poor performance.
Rating						
					Construction & Long-Term Maintenance Related Constraints	
1.3	11	2	1	0	1	Municipalities cannot afford for landscape maintenance in the ROW.
2.0	6	2	4	1	2	Inadequate long-term maintenance plan.
2.2	5	3	3	2	2	Lack of contractor experience building stormwater management facilities.
2.4	2	6	4	2	1	Lack of guidance on construction procedures specific to urban BMPs and retrofit projects.
2.7	3	4	0	6	2	Lack of consensus of who is best suited to conduct maintenance activities.