

Opportunities and Constraints Analysis

The suitability or infeasibility of a design strategy (or combination of design strategies) at a project site depends on the unique opportunities and constraints of the site. The objective of this assessment is to identify and preserve areas of the project site that favor PCR compliance (opportunities), while prioritizing development to those portions of the project site that do not (constraints). Ideally, the assessment of opportunities and constraints occurs prior to developing project concepts and site design, and identifies site-specific stormwater “opportunities” and “constraints” that can be utilized as a basis for creating a well-balanced project.

The County requires submittal of an opportunities and constraints checklist and demonstration map (per the PCRs) for projects that trigger PR#3 and above, and to demonstrate the criteria are met for a technical infeasibility finding. Applicants must complete the following pages and submit the analysis as an attachment to the SWCP if requesting a technical infeasibility finding. A separate opportunities and constraints site map reflecting the data in this appendix is also required.

Applicants are encouraged to thoroughly review the criteria associated with technical infeasibility in Resolution R3-2013-00032 when determining the applicability to their project.

1. Opportunities & Constraints Checklist

a. Existing Vegetation

Preserve or minimize disturbance to existing natural vegetated features. Designs that integrate natural features of the project site are better at mimicking pre-development runoff characteristics. Effective management of both existing and proposed site vegetation can reduce a development’s impact on stormwater runoff quality and quantity.

<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<i>Existing, high-quality vegetation has been identified and noted on the Opportunity and Constraints Map. Access to these areas will be restricted during construction.</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<i>Existing trees have been identified and noted on the Opportunity and Constraints Map. The location of tree protection fencing is identified to restrict site disturbance and protect these locations during construction.</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<i>Notes have been included on the corresponding site plans in areas where highly visible temporary fencing shall be placed around vegetation and tree areas that are to be preserved during construction.</i>

b. Survey and Site Topography

Identify opportunities and constraints within site topography and natural drainage patterns that can be incorporated into the design. Integrating existing drainage patterns into the site plan can maintain a site’s predevelopment hydrologic function and will result in lower construction costs over sites that modify site topography and develop new drainage patterns.

<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<i>The site has been surveyed and a topographic base file has been created to identify topography and natural drainage patterns.</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<i>Existing low-spots and sumps within the topography have been identified on the Opportunity and Constraints Map. These areas will be preserved and utilized as BMP locations where technically feasible.</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<i>Existing high-spots within the topography have been identified on the Opportunity and Constraints Map. These areas be preserved for placement of structures or hardscapes where feasible, allowing runoff to drain to low lying areas for treatment.</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<i>Areas within 50 feet from the top of slopes that are greater than 20% and over 10 feet of vertical relief have been identified on the Opportunity and Constraints Map. Notes on the map indicate that SCMs are not authorized within these areas.</i>

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c. Soil Analysis

Native undisturbed soils have a complex matrix created by the growth and decay of plant roots, earthworms, and insect activity. Topsoil stripping and stockpiling destroys soil structure and diminishes natural biological activity. Avoid and limit unnecessary site disturbances during construction. Plan LID and SCM placement where soils support infiltration (Soil Groups A and B). To the extent feasible, plan buildings and structures and hardscapes placement where soils discourage infiltration (Soil Group C and D).

<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<i>Locations where soils encourage infiltration (Soil Group A and B) have been identified on the Opportunity and Constraints Map. Where feasible, these areas have been preserved or dedicated to SCM locations.</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<i>Locations where soils discourage infiltration (Soil Group C and D) have been identified on the Opportunity and Constraints Map. Where feasible, these locations have been dedicated to the proposed project improvements such as structures and hardscapes, or contractor staging and equipment storage areas, etc.</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<i>Locations where existing structures and hardscapes will be removed during construction (exposing highly compacted soils) have been identified on the Opportunity and Constraints Map. Placement of SCMs has been avoided in these areas.</i>

d. Geotechnical Analysis

Data from the preliminary geotechnical analysis or soil borings should be evaluated to support identification of opportunities and constraints. These areas should be specifically identified with limits noted on the Opportunities and Constraints Map.

<input type="checkbox"/> Yes <input type="checkbox"/> No	<i>The site contains areas designated as an erosion hazard, or landslide hazard.</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No	<i>The site contains groundwater that drains into an erosion hazard, or landslide hazard area.</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No	<i>The geotechnical report identified contaminated soils:</i> <input type="checkbox"/> <i>These soils will be removed during construction.</i> <input type="checkbox"/> <i>These soils will remain in place during construction.</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<i>The groundwater table elevation (including seasonally high and historically high) has been determined.</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No	<i>The seasonally high groundwater table elevation is at least 10-feet below the proposed invert elevations of the proposed SCMs.</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<i>Fractured bedrock identified through geotechnical testing is at least 10-feet below the proposed invert elevations of the proposed SCMs.</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No	<i>Infiltration testing has been performed onsite at the proposed SCM locations and the geotechnical report has identified that the site is suitable for infiltration.</i>

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e. Setbacks

Establish setbacks and buffer zones surrounding restricted and/or sensitive areas. Identify all areas where SCMs cannot be constructed due to setback requirements. Examples include existing and proposed building foundations, municipal water wells, private water wells, septic systems, easements, etc.

<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<i>Private potable water wells in the vicinity have been identified (onsite and offsite) and a minimum offset radius has been established indicating where infiltration SCMs are not authorized.</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<i>Municipal potable water wells in the vicinity have been identified (onsite and offsite) and a minimum offset radius has been established indicating where infiltration based SCMs are not authorized.</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<i>Within the Coastal Zone, a setback of 100-feet has been established from the upland extent of riparian vegetation. The limits of these setbacks are indicated on the Opportunity and Constraints map.</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<i>Within the Urban Reserve Lines, a setback of 50-feet has been established from the upland extent of riparian vegetation. The limits of these setbacks are indicated on the Opportunity and Constraints map.</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<i>A setback of 10-ft has been established from all property lines to SCMs and the limits of these setbacks have been indicated on the Opportunity and Constraints Map.</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<i>A setback of 10-ft has been established from all existing and proposed building foundations with notes indicating infiltration SCMs are not authorized within these limits.</i>

f. Hydrology Features

Identify onsite and offsite downstream waterways, including creeks, wetlands, watercourse, seeps, riparian zones areas of 100-year flood inundation, potential stormwater run-on locations and depths to groundwater. All areas of hydrologic importance should be delineated at the earliest stage in the development planning process.

<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<i>Hydrological features such as creeks, wetlands, riparian zones, etc. have been identified and incorporated into the Opportunity and Constraints Map.</i> <input type="checkbox"/> <i>Notes have been added to the Opportunity and Constraint Map indicating that these areas will be protected by exclusionary fencing during construction to prevent resource damage.</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<i>The pre-developed site drainage pathways have been identified and the limits of these features have been placed onto the Opportunities and Constraints Map.</i>

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<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<i>Existing storm drain infrastructure, including potential points of connection have been identified and placed onto the Opportunities and Constraints Map.</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<i>Stormwater run-on locations have been identified and placed onto the Opportunities and Constraints Map.</i>

g. Hazardous Areas & Pollutants of Concern (POCs)

Identify locations where existing or future pollutants may occur onsite and identify features that may prevent these pollutants from being exposed to stormwater runoff. Examples include chemical storage locations, fueling stations, and industrial operation areas.

<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<i>Existing hazardous storage areas and POC sources have been identified and placed onto the Opportunities and Constraints Map.</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<i>Proposed hazardous storage areas and POC sources have been identified and placed onto the Opportunities and Constraints Map.</i>