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## APPENDIX C: The Physical Conditions in San Mateo County

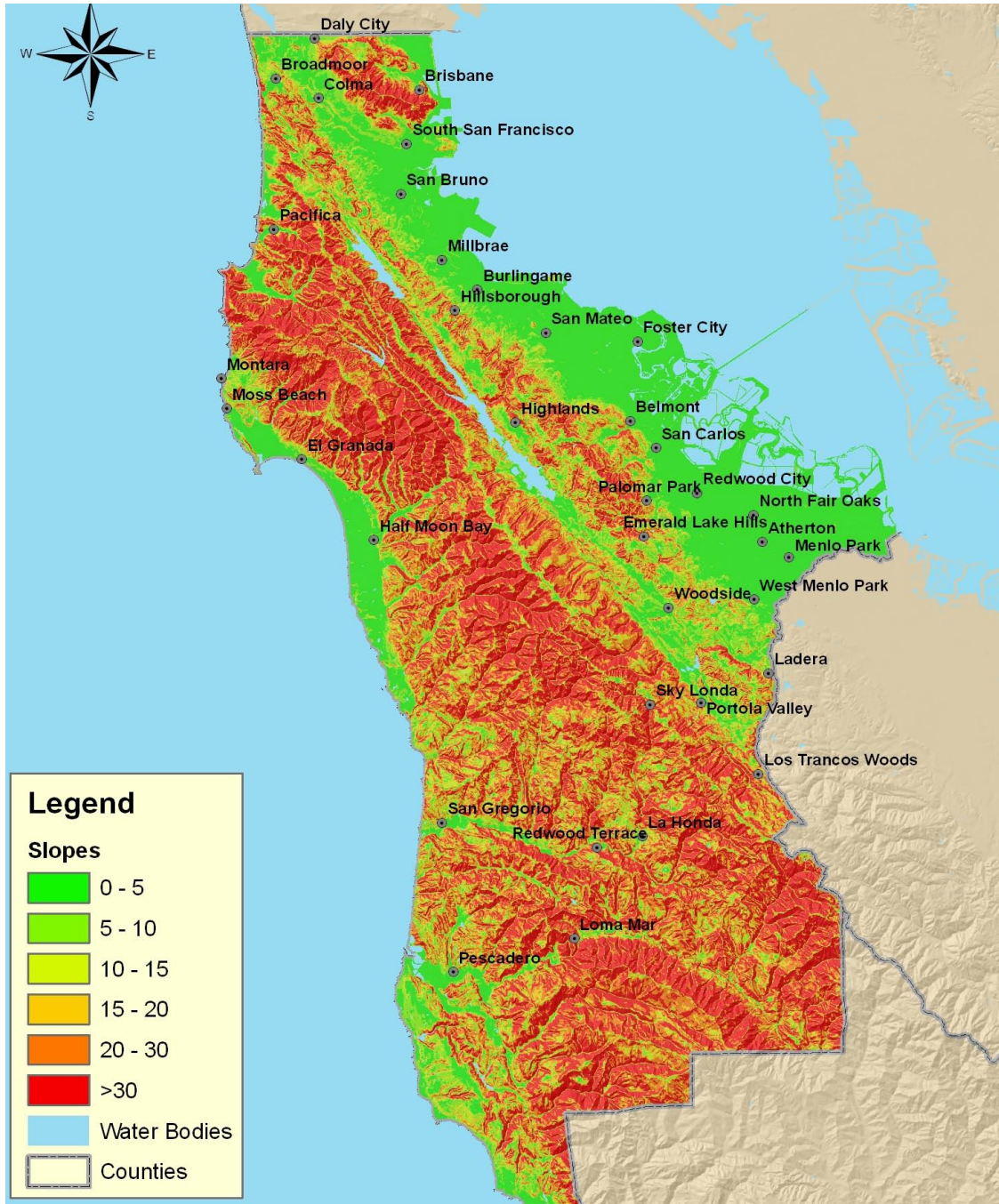
Land use, soil permeability, vegetation, and topography vary considerably across the County. All of these considerations must be taken into account to accurately evaluate the unique opportunities and challenges for stormwater management at any particular site. In order for the strategies described in this guidebook to be effective, they must be matched with the proper physical settings. The figure below shows the countywide distribution of development intensity according to the 2001 National Land Cover Dataset (NLCD).



**San Mateo County Distribution of Impervious Area**

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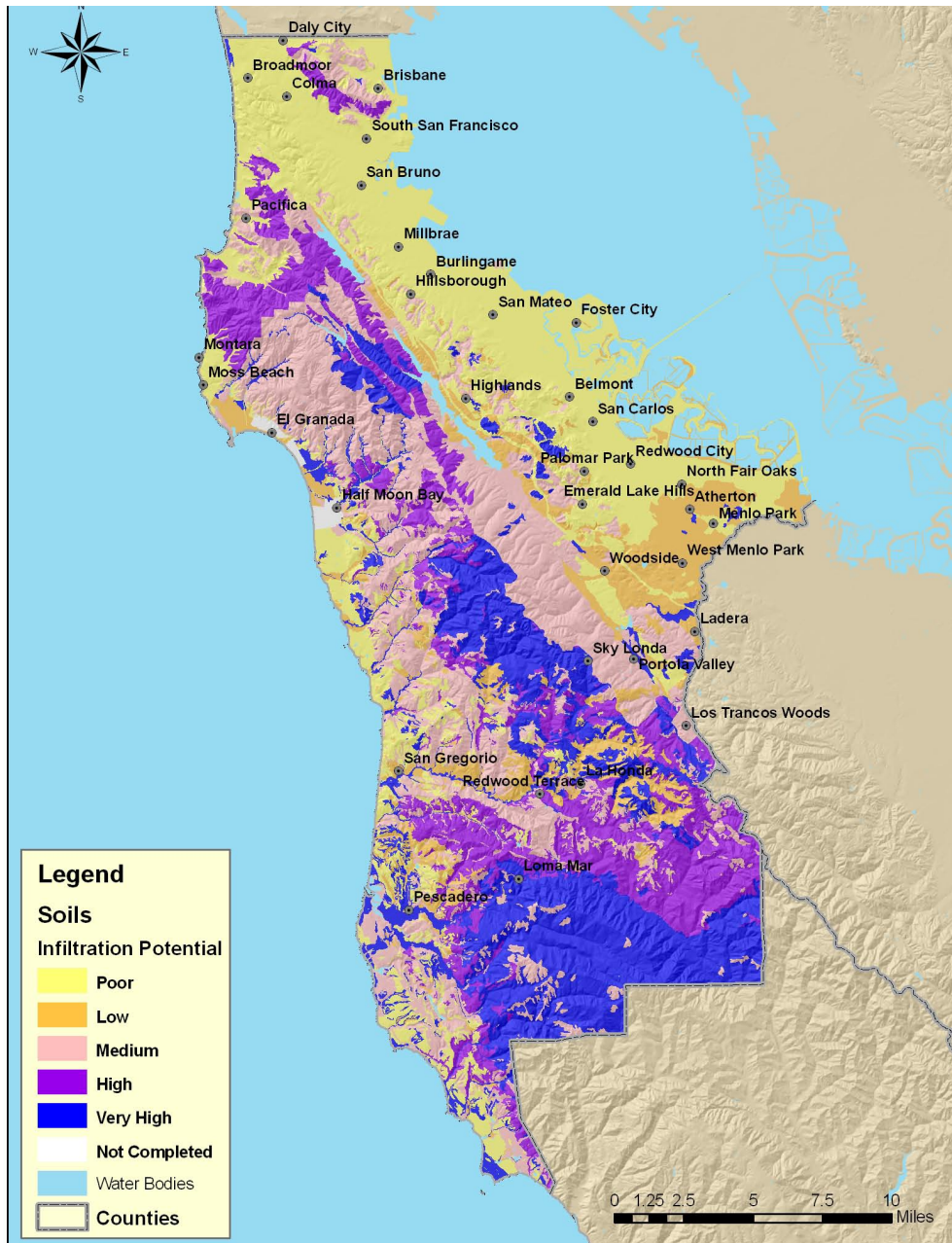
The vast majority of development in the county has occurred in the eastern section bordering the Bay. The figure below shows the distribution of flat (green), moderate (yellow), and steep (red) slopes. As San Mateo County residents know, there are broad swaths of flat land along the Bay and to a lesser extent the coastline, both of which transition sharply moving into the interior to the Santa Cruz Mountains of the Coastal Range. Not surprisingly, the developed areas mainly coincide with flat lands. This is generally positive in terms of integrating stormwater management strategies into new development and retrofitting existing development because stormwater management facilities are easier to install on flat to mild terrain.



**San Mateo County Slope Distribution**

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The figure below shows how hydraulic conductivity (K), which correlates to infiltration capacity, varies across the county. Raw data were obtained from the National Resource Conservation Service (NRCS) Soil Survey Geographic (SSURGO) Database, and the most hydraulically restrictive layer within the top 30 inches was identified and taken to represent an expected range of K values. There is a fairly strong correlation between flat lands and low K values, which means that facilities in the flat lands will likely require an underdrain in order to maintain adequate hydraulic capacity. This map should not be used to determine percolation rates at individual sites. More detailed information can be obtained from the NRCS Web Soil Survey (<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>), but site-specific percolation tests must be performed to determine the percolation rate at any given property.



**San Mateo County Soil Hydraulic Conductivity Range**