Southbridge Wilmington Wetland Park: Resilient Urban Wetland Restoration

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The City of Wilmington's Southbridge Wilmington Wetland Park Project illustrates the challenges associated with urban wetland restoration that will only become more frequent as sea levels rise. The project is located in a degraded brownfield wetland with elevations well below the mean high water elevation of the nearby Christina River and is surrounded by light industrial and residential development which sets the upper limit of allowable tidal flooding well below mid-tide. Inundation studies demonstrated that automated tidal control would be required to develop vegetated tidal wetlands following restoration. Automated tidal controls have the added benefit of resilience to initial sea level rise. Restoration includes an emergent fresh water tidal wetland system with minor shrub and forest components bordered by upland shrub, forest and meadow areas. Site grading was influenced by the need to provide adequate stormwater storage capacity and to reduce costs associated with contaminated soil disposal. Stormwater forebays, passive park amenities and powerline access are significant components of the final design. Despite limitations and challenges this project provides ecological uplift, stormwater storage, recreation, and educational opportunities in a highly developed urban environment. Lessons learned include early regulatory collaboration, hydrology establishment before planting and adaptive management as critical factors in the success of constrained urban wetland projects. The Southbridge Wilmington Wetland Park demonstrates that resilient, data-driven design can convert underused urban land into climate-adaptive green infrastructure that safeguards both people and ecosystems.