

Sustainable Remediation of Solid Waste: How to Nip It in the BUD

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Background/Objectives. Beneficial use determinations (BUDs) are an underutilized but proven method of adding significant sustainability metrics to remediation and construction projects. Using consistent planning tools, BUDs are found to be cost-efficient and able to achieve green and sustainable (GSR) remediation goals. This presentation uses an example of a large-scale resiliency effort to demonstrate how proper characterization and management of solid waste generated from the dredging of a tidal wetland, upstream lake and surrounding historic fill areas were found to be compatible for reuse within another site containing a similar wetland habitat. This approach is particularly effective for sites where the cost for off-site landfill disposal of solid waste is immense and reduction of the carbon footprint is a key objective. This can be accomplished on all types of sites looking to dispose of or acquire fill material.

Approach/Activities. This presentation explains the BUD process and how the methods learned from this one project can be replicated on many other projects. The main site used in this case study focuses on the importance of the timely coordination of obtaining approvals, gathering proper characterization data and providing thoughtful materials management methods, all while meeting specific contractor- and client-related project goals. This presentation will outline the process gained from multiple experiences and how planning during design will lead to successful implementation of beneficial reuse concepts on a variety of infrastructure improvement and restoration projects. This was especially adaptable to a neighborhood that previously suffered from chronic flooding conditions and poor water quality and was due for resiliency improvements.

Results/Lessons Learned. Results discussed from this case study include the volume of material averted from landfills, cost savings from avoiding off-site disposal and reducing imported fill volumes, and reductions in transportation mileage, fuel consumption, and carbon production. The volume of material approved to be beneficially reused was over 40,000 cubic yards, providing an overall project cost savings of approximately \$4 million and preventing the emission of over 1.9 million pounds of CO₂. The lessons learned from this project will portray the importance of understanding the means of obtaining approval under applicable regulations, thoughtfully managing material excavation, transportation and end use, and aligning the schedules of multiple client projects for a seamless transition and successful reuse of solid waste. Most importantly, this presentation aims to show how this process can be successfully and repeatedly used by project teams on a variety of site locations.