LID-SPECIFIC DESIGN REQUIREMENTS

ONCE A LID PROJECT HAS BEEN IDENTIFIED, THERE ARE GENERAL SITE-SPECIFIC CONSIDERATIONS THAT NEED TO BE INVESTIGATED. AS LID PROJECTS ARE REQUIRED TO USE THE PERMITS REQUIREMENTS IDENTIFICATION PERMITS AND THE EXCAVATION PERMITS SOIL DISTURBANCE PERMIT REQUEST (EPC-CP) PROCESSES TO IDENTIFY PROJECT ISSUES AND REQUIREMENTS.

FUNCTION IN LANL STORM WATER SYSTEM

UNDERSTANDING THE FUNCTION OF THE GREEN INFRASTRUCTURE (GI) FEATURE IS BASIC TO GI DESIGN. THE SYSTEMS NAME AND FUNCTION RELATIVE TO THE GENERAL STORM WATER SYSTEM HELPS CLARIFY THE CRITICAL CONSIDERATIONS THAT NEED TO BE ADDRESSED IN THE SPECIFIC DESIGN.

- HOW LARGE IS THE CAPTURE AREA THAT CONTRIBUTES STORM WATER TO THIS GI feature?
- ARE SURFACE SLOPE AND GRADIENT CONTROLS NEEDED?
- IS IT POSSIBLE TO SPREAD AND REDUCE THE POLLUTANT CONCENTRATION OF STORM WATER?
- HOW WILL THE VEGETATED COMPONENT OF GI WORK WITHIN THIS PROJECT?
- HOW LARGE IS THE CAPTURE AREA THAT CONTRIBUTES STORM WATER TO THIS GI feature?
- HOW WILL THE VEGETATED COMPONENT OF GI WORK IN THIS PROJECT?

GENERAL DESIGN REQUIREMENTS:

LANL PROJECTS SHOULD INCORPORATE THESE GENERAL DESIGN REQUIREMENTS FOR LID AND GI COMPONENTS.

R O U N D O F

- IDENTIFY DRAINAGE AREAS FOR EACH CONTROL MEASURE TO BE DESIGNED.
- CALCULATE CHANNEL FLOW VELOCITY AND SHEAR STRESS FOR LID CONTROL DESIGN AND SITE CONDITIONS.
- CALCULATE FLOW-RATES, VOLUMES, AND VELOCITIES TO SUPPORT SIZING OF LID COMPONENTS OF THE DESIGN TO HELP PREVENT SOIL MIGRATION AND EROSION.
- PERFORM SOILS PERCOLATION FIELD TESTS PER ASTM D 3385 OR OTHER TEST METHOD APPROVED BY EPC-CP.
- OPTIMAL INFILTRATION RATE IS <0.5 INCHES/HOUR.
- CHECK FOR ENDURABILITY TO EVALUATE NEEDS FOR FLOW ENERGY DISSIPATION AND SEGMENTATION POTENTIAL AND OR EROSION.
- EVALUATE THE NEED FOR SOIL ABNOMEN TO SUPPORT VEGETATION GROWTH.
- SOIL COMPACTION:
  - TO PREVENT OVER COMPACTION, MINIMIZE USE OF HEAVY EQUIPMENT ON SOILS TO BE USED FOR INFILTRATION.
  - FOR AREAS INTENDED TO INFILTRATE STORM WATER FLOWS, NATIVE SOILS SHALL NOT BE COMPACTED ANY GREATER THAN 85% MAXIMUM DRY DENSITY.
  - SOILS BENEATH STRUCTURAL COMPONENTS (E.G., FOOTINGS, CONCRETE WALLS, ETC.) SHALL BE COMPACTED TO 85% OR GREATER DRY DENSITY.
- VEGETATION:
  - INCLUDING AND ESTABLISHING VEGETATION IS AN IMPORTANT FUNCTIONAL COMPONENT OF LID G;.
  - DISTURBED AREAS SHALL BE STABILIZED WITH PERENNIAL VEGETATION.
  - VEGETATION SHOULD BE DROUGHT TOLERANT AND ABLE TO WITHSTAND PERIODIC INUNDATION.
- UTILITIES:
  - IN MORE DEVELOPED AREAS OF LANL, LOCATIONS FOR GI ARE OFTEN UTILITY CORRIDORS. INVESTIGATING UTILITIES FOR ALIGNMENT AND BURY DEPTHS IS AN IMPORTANT PART OF BASIC SITE ANALYSIS.
  - OBTAIN MAPPING OF EXISTING AND ABANDONED UTILITIES WITHIN THE PROJECT AREA AS EARLY AS POSSIBLE DURING THE PROJECT PLANNING AND DESIGN PHASE.
  - OBTAIN INFORMATION FROM LANL INFRASTRUCTURE AND UTILITIES GROUPS REGARDING ALIGNMENTS, BURY DEPTHS AND LIMITATIONS FOR ACTIVITIES SUCH AS GRADE MODIFICATIONS AND RUNOFF INFILTRATION CONSIDERATIONS.
  - POTHOLING WILL BE NECESSARY TO CONFIRM LOCATION AND DEPTH OF BURIED UTILITIES.
- ACCESS:
  - LID AND GI IMPROVEMENTS NEED TO INCLUDE SECURITY AND ACCESS REQUIREMENTS.
  - IDENTIFY SECURITY AND SAFETY ACCESS REQUIREMENTS AT THE EARLIEST STAGES OF PROJECT PLANNING.
  - PROVIDE ACCESS FOR MAINTENANCE.

SOILS

SOILS INFORMATION IS IMPORTANT IN DETERMINING INFILTRATION AND STRUCTURAL DESIGN OPTIONS FOR LID G; TESTING WILL BE DETERMINED ON A CASE BY CASE BASIS BY EPC-CP.

- SOILS INFORMATION IS IMPORTANT IN DETERMINING INFILTRATION AND STRUCTURAL DESIGN OPTIONS FOR LID G; TESTING WILL BE DETERMINED ON A CASE BY CASE BASIS BY EPC-CP.
- FOR AREAS INTENDED TO INFILTRATE STORM WATER FLOWS, NATIVE SOILS SHALL NOT BE COMPACTED ANY GREATER THAN 85% MAXIMUM DRY DENSITY.
- VEGETATION:
  - INCLUDING AND ESTABLISHING VEGETATION IS AN IMPORTANT FUNCTIONAL COMPONENT OF LID GI.
  - DISTURBED AREAS SHALL BE STABILIZED WITH PERENNIAL VEGETATION.
  - VEGETATION SHOULD BE DROUGHT TOLERANT AND ABLE TO WITHSTAND PERIODIC INUNDATION.
- UTILITIES:
  - IN MORE DEVELOPED AREAS OF LANL, LOCATIONS FOR GI ARE OFTEN UTILITY CORRIDORS. INVESTIGATING UTILITIES FOR ALIGNMENT AND BURY DEPTHS IS AN IMPORTANT PART OF BASIC SITE ANALYSIS.
  - OBTAIN MAPPING OF EXISTING AND ABANDONED UTILITIES WITHIN THE PROJECT AREA AS EARLY AS POSSIBLE DURING THE PROJECT PLANNING AND DESIGN PHASE.
  - OBTAIN INFORMATION FROM LANL INFRASTRUCTURE AND UTILITIES GROUPS REGARDING ALIGNMENTS, BURY DEPTHS AND LIMITATIONS FOR ACTIVITIES SUCH AS GRADE MODIFICATIONS AND RUNOFF INFILTRATION CONSIDERATIONS.
  - POTHOLING WILL BE NECESSARY TO CONFIRM LOCATION AND DEPTH OF BURIED UTILITIES.
- ACCESS:
  - LID AND GI IMPROVEMENTS NEED TO INCLUDE SECURITY AND ACCESS REQUIREMENTS.
  - IDENTIFY SECURITY AND SAFETY ACCESS REQUIREMENTS AT THE EARLIEST STAGES OF PROJECT PLANNING.
  - PROVIDE ACCESS FOR MAINTENANCE.