DOCK SPACE GUIDELINES

INTRODUCTION

Lack of dock space in which to stage and process materials is a common problem when developing a hospital recycling program. Docks are often cluttered with material entering and exiting the facility. The cluttered, disorganized appearance of a hospital dock contrasts with the orderly, clean images associated with hospital front lobbies.

Figure 1: Dock space at a Los Angeles Hospital

The amount of dock space needed for a plastic recycling program will depend on several factors:

- Program Scope
- Recycler Logistics
- Infrastructure – Internal and External
- Materials Logistics

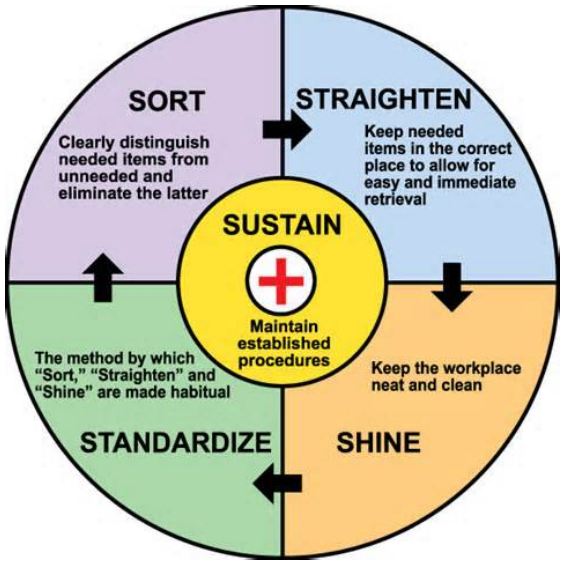
In this guidance, we provide you with tools and suggestions to help you develop the optimum dock space layout for your program.

Tools:

- Summary graphic of key dock space parameters
- Waste flow mapping and example of dock space layouts
- Overview of 5S program

PROGRAM SCOPE

Defining the Scope of your program is the first step to discuss with your team. How broad do I desire my recycling program to be? What quantities of materials are expected to be recycled? The answers to these questions will help you start thinking about dock space requirements.



Before starting the program, consider if it will be valuable to implement it in conjunction with a **5S program**. 5S is the name of a workplace organization method that uses 5 primary phases: Sort, Straighten, Shine, Standardize and Sustain. These phases describe how to organize a work space for efficiency and effectiveness by

identifying and storing the items used, maintaining the area and items, and sustaining the new order. The decision-making process is based on a dialogue about standardization, which builds understanding among employees of how they should do the work. This methodology has been proven to be effective in the manufacturing environment and now it's used at many other work settings, including offices, warehouses, department stores, hospitals, etc. A case study on the benefits of 5S is included at the end of this document. If you are not familiar with 5S, a brief overview of this program is provided as a supplement attachment (please find link above in the Introduction Section of this document).

RECYCLER LOGISTICS

Communication with the waste management company servicing the hospital is key - What type of recycling program do they have; what type of plastics do they recycle, etc.

Discuss with the recycler the following points:

1. How the recycling services will be priced (e.g. is it by number of pickups or by quantities recycled?).
2. Does the recycler require segregation of the materials? Some materials should be segregated to increase value and decrease cost (some materials are more valuable if they are segregated).
3. With which types of equipment and containers can the recycler work? (e.g. do they need the material to be compacted, do they provide a compactor). Verify the number of dumpsters, bins, totes that will be necessary for the recycling program to run smoothly.

Figure 2: The recycler might have a process to segregate at its location or will recommend desired segregation at the hospital

Identify recycling organizations that can engage. If your waste management company cannot collect all the recycling material you generate, talk to other service providers that could also engage in the program (e.g recycler that will take care of your pallets).

Please refer to Finding a Recycling Partner section of HospiCycle.

INFRASTRUCTURE ASSESSMENT

Identify the dock that is most suitable for your recycling program based on:

1. Proximity to recycling activities
2. Proximity to existing recycling equipment such as balers, dumpsters, compactors, totes, etc.
3. Availability of space within the dock and the adjacent areas
4. Ease of access for internal transfer of recyclables.

5. Ease of access for the recyclers

Lay out the amount of space that is available for your recycling program. Consider internal space for segregation, processing, storage and transfer. Also consider adjacent exterior areas and the flow of materials between each area. Please use the sample layouts provided as a supplement to this document (please find the link above in the Introduction Section). Review the footprint for any additional equipment (compactor, baler, dumpster, etc.) that is needed. Identify what equipment is needed and measure the area to scale to ensure all the equipment will fit and be sure to consider space for maneuver and storage. Work closely with your recycler partner and internal key stakeholders to ensure the dock layout works for everyone.

You can use the 5S principles in alignment with the infrastructure assessment. Please refer to the 5S presentation at the end for more details.

MATERIALS LOGISTICS

As with any new program, consider the logistics early in the planning process. It is recommended to perform a waste characterization prior to start (please refer to the Typical Waste Characterization section of HospiCycle). After the waste characterization has been completed, identify the amount of material that you expect to collect (lbs. - plastics, glass, cardboard, aluminum, etc.). Ensure you have an understanding of the amount generated and the frequency of waste pickups. Spend some time mapping the logistics of the waste streams that are expected to be recycled. Consider the following:

1. Is all recycling material going to be collected at one point or are certain materials collected at other areas or docks?
2. How will material be moved to another location?
3. Is any sorting or segregation of materials going to be performed and where?
4. Will certain recycling equipment (baler, compactor, etc.) be required for certain recyclables?
5. How much space do you need?
6. Where will your recycler pick up materials?
7. How often will your recycler pick up materials?
8. How much material will accumulate before your recycler picks up the materials?

Figure 3: Cart with material to be transferred

Once this exercise is completed, start visualizing the areas where the material will be collected. Draw a flow chart indicating how the flow of the materials should look. Use the layout provided to put all the ideas in a diagram. Based on the quantities and the

information collected from your waste characterization identify which dock layout best fits your program or the space provided for the recycling program (please refer to Infrastructure Assessment). Consider the most economically feasible combination of equipment and pickup scheduling. For example, if your facility is charged by the bin and for each pickup trip, a larger bin with a compactor may be more economical to accommodate larger quantities of recyclables.

ADDITIONAL CONSIDERATIONS

Consider other operations occurring on and around your dock. These activities may affect the flow and storage location of your recyclables.

Work closely with your recycling partner and internal key stakeholders to ensure the dock layout works for everyone. Consider internal resources, such as materials management and logistics, to help with the development of the optimum dock layout.

It is crucial to meet particular regulatory compliance requirements or building codes from an architectural or design point of view. Fire departments or other regulatory entities might impose requirements that must be considered. In addition, consider issues like stockpiling and segregation of materials to minimize any fire-related hazards.

CASE STUDY:

REGIONAL SERVICE CENTER DOCK

Figure 4: Before 5S

Situation:
The dock was filled with clutter. Old and obsolete equipment was placed outside. Unused materials were routinely stored in the area. Delivery vehicles had difficulty unloading materials.

Action:

1. 5S training was conducted with the department and facilities staff;
2. 2-3 days were spent clearing the area, red tagging items, and laying out the visual markers

Figure 5 During 5S

Figure 6: After 5S

Results:

1. Materials have designated zones;
2. Delivery vehicles are able to off-load materials closer to operation, reducing delivery time and material handling;
3. Visual markers provide better material management in the area;
4. The clean-up uncovered several areas that needed additional facilities maintenance.

Figure 8: 5S is about Sort, Straighten, Shine, Standardize and Sustain.

TOOLS:

- **EPA Lean Thinking and Methods:** http://www.epa.gov/lean/environment/methods/fives.htm
- **Spaghetti Diagram:** http://www.six-sigma-material.com/Spaghetti-Diagram.html
- **How to Start a 5S Lean Program in your Healthcare Organization:** http://medicalsupplies.about.com/od/Budgeting/a/How-To-Start-A-5s-Lean-Program-In-Your-Healthcare-Organization.htm