STANDARD OPERATING PROCEDURES (SOP) FOR THE GULF OF MEXICO PARTNERSHIP LIST

Collecting information for the Gulf of Mexico Partnership includes the following three steps:

Step 1: Using the Gulf of Mexico Partnership List

The Gulf of Mexico Partnership is meant to facilitate collaboration among Gulf stakeholders to protect, maintain, and restore the health and productivity of the Gulf of Mexico. Thousands of people have used the Marine Debris Tracker (MDT) app to create data points for litter and debris all over the world. This data helps to track the progress of prevention efforts, add value to cleanups, and provide important baseline knowledge which can be used to inform solutions. The Gulf of Mexico Partnership is using the Marine Debris Tracker to provide an electronic platform for stakeholders to consistently collect data on marine debris and litter removed from the environment in the Gulf of Mexico and its watershed.

The Gulf of Mexico Partnership list in the MDT consists of an item list, site characterization information, and an end survey that allows user groups to compile data for trash clean-up efforts. Refer to the Gulf of Mexico Partnership – MDT Quick Guide (Appendix 1) for information on getting started in the MDT application. In addition, Appendices 2-5 include companion materials for the MDT in the form of printable data forms and reference cards.

Step 2: Completing the Clean-up

2A. Cataloguing Methods

There are three effective methods to clean up and categorize trash at your site(s): (1) collect trash and catalogue at a central location in the field, (2) collect trash and catalogue the items at a later time, or (3) catalogue trash as it is collected in the field. All approaches are built upon a divide-and-conquer approach and the ability to focus on accurate categorization. The first method is more useful when there is a large group, while the second may be more appropriate for smaller groups. The third approach is useful for disparate groups where you have individuals that go out at leisure to collect items; however, the level of quality control attainable for this approach should be taken into consideration depending on the project objectives.

It is critical that all trash be collected in your site area, even the fragments of litter. This provides the ability to compare the density of trash in each site to other sites or over time.

Suggested items to bring to cleanup site:

It is recommended that site leaders provide a combination of the items listed below to aid in trash sorting and clean up. Some items may not be necessary depending on level of effort, the weather and site conditions.

- Grabbers
- Gardening gloves (with varied size options)
- Clipboards
- Pencils
- Data cards
- Large trash bags
- 5-gallon buckets
- Tarp
- Fold-up table
- Canopy (with sides for windy conditions)
- Luggage scale
- First aid kit
- 1 cup measuring cup

Safety Considerations

Safety precautions are critical to any cleanup. Organizations facilitating a cleanup should follow a safety plan for volunteers and train its team leaders in safety protocols. Some common-sense safety rules include the following:

1. Have a well-equipped first aid kit handy
2. Wear protective gloves and sturdy footwear
3. Stay hydrated
4. Listen to weather reports and cancel or leave if a storm threatens your safety
5. Park in a safe location and secure your valuables
6. Never enter private property without permission
7. Never wade into swift water or walk on unstable stream banks
8. Know how to identify poisonous vegetation and venomous reptiles/insects
9. Don't pick up dangerous items (e.g. broken glass, needles) – notify the team leader
10. Leave the site if you feel concerned about your personal safety

<u>Method 1– Cataloguing trash at a central location in the field</u>

This method is best for a larger group, where 12 or more volunteers can be grouped into at least three volunteer pairs on both teams. With the addition of an "afternoon relief" team, this would call for 18 volunteers in total. Larger groups can handle larger site areas, or you can divide your area into segments. If the

area is smaller or there is a limited number of volunteers, it may be easier to execute Method 2 (see below). Method 1 is also preferential in pleasant weather conditions because the sorting will occur outside.

Dedicate a central location at your site to be "home base," where trash will be piled and sorted. Next, divide your group into three teams.

Team One

The first team will fan out and pick up all the trash within your site's established boundaries. If an exceptionally heavy or submerged item cannot be picked up, make a note of it and its location relative to the area. Items that are dangerous or too heavy to move should be left in place – safety first! Volunteers may catalogue data about any items to be left in place if you wish these to be included in the final site analysis.

Note that some material, like a concrete structure that is attached to the ground, is not considered trash in this methodology and can be left. However, loose concrete or rubble should be removed and categorized if possible.

Once your bag or bucket is full or your subsection is clean, bring the trash back to the meeting point. Again, the goal is to collect ALL of the trash in the site or segment, even fragments.

Hint: Buckets and grabbers work well. You can dump the buckets on the sorting table. If you have enough buckets, volunteers can leave their full bucket and go out with a fresh bucket to collect more trash.

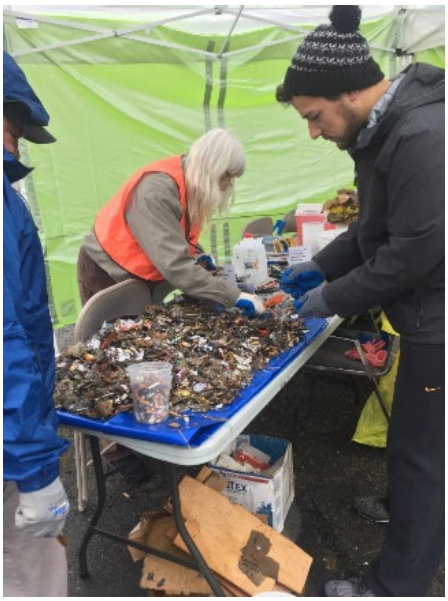


Figure 1 (left). Osprey Initiative, Inc. staff perform ETAP after cleaning out a Litter Gitter in Three Mile Creek, Mobile, AL (Photo courtesy of Osprey Initiative, Inc.).

Figure 2 (right). Volunteers at a sorting station comb through a pile of smaller items and categorize them according to material type (Photo courtesy of Zero Waste Washington).

Team Two

The second team will set up the base station where they will categorize and count the trash that is picked up. It is recommended to have a tarp, table, and/or pop-up canopy for optimal categorizing conditions.

Volunteers will work in pairs opening each bag (or bucket) of trash as it arrives from the cleanup team and begin to sort, catalogue and count the items (see Section 1C below for information on how to categorize items). Counts may be recorded in the **Data Card** (Appendix 2).

If you have divided your overall site into segments, be sure the counters (Team 2) are only accepting trash from the group picking up trash (Team 1) in their assigned segment or subsection.

> *Hint: Even a breeze can blow your items around as your volunteers are counting the trash. It is suggested to use small pails or containers to collect each category of trash and/or put up a screen to prevent the wind from disrupting counting and cataloguing.*

With this method, the clean-up team will likely complete its work before all items can be catalogued and sorted by the volunteers at home base. To avoid fatigue and maintain high data quality, clean up volunteers (Team 1) should take a break after all trash has been cleaned up from the site. Catalogue volunteers (Team 2) should take breaks as needed. If there are enough volunteers for a third team, this team may arrive later in the day and take over the cataloguing work, leaving the earlier two teams free to depart or rest.

Figure 3. A volunteer picks up plastic from a local riverbank using a trash grabber tool.

Team 3

The third team is responsible for collecting the overarching site information and compiling all the catalogued data. Members of Team 3 should review the Gulf of Mexico Partnership – MDT Quick Guide (Appendix 1) and familiarize themselves with the MDT before the day of the event. Depending on the size of the site Team 3 may only be one to three people. They will walk the site and complete the Site Info and Waste Bins sections of the data entry in the app and take pertinent photos of the site. Team 3 will also work with the Team 2 to enter the final item counts into the MDT once collection and counting is completed. Team 3 individuals will need to take photos of sorted items and collect other photos from Team 2 volunteers if needed. Only one person from Team 3 needs to complete the end survey in the MDT. Team 3 members will review the app entry and add any photos before submitting the data in the MDT.

If paper documentation is preferred, the team may use the Site Summary form (Appendix 5) to collect site information and enter this information in the Gulf of Mexico Partnership List in the MDT later. Using paper will prevent geolocation of site boundaries and waste bin information in the MDT.

Method 2 – Cataloguing trash at a later time

This method uses a single team to both collect trash and later catalogue the trash for the site or each segment. It is an optimal method to consider when weather conditions are unpleasant because it allows your team to focus on removing the trash from an area and sort it later in conditions that are more suitable, like inside a building or warehouse. Smaller teams with more variable volunteer schedules may prefer this method.

The second method starts with designating a meeting point where the full contents of the site cleanup (all full trash bags or buckets) can be stored after trash is collected. It is recommended that this be an easily accessible point near your cleanup site. If access to an indoor trash storage and sorting area is not feasible, you may use a tarp, folding table, and/or canopy to create a temporary storage space at or near your site. Designate one individual who will be responsible for getting all of the data entered into the Gulf of Mexico Partnership List in the MDT. Instead of collecting trash at the site, this individual will focus on completing the Site Info and Waste Bins sections of the data entry in the app and taking pertinent photos of the site.

Once a “home base” has been determined, your entire group will fan out and collect all the trash in the area. When the site has been cleaned, volunteers should store all collected trash in the pre-determined location and take a break.

Collected trash can be stored overnight if the selected meetup point is a secure location that will not allow trash to escape into the environment. If cataloguing will not take place on the same day as the clean-up, the person entering data into the MDT can go ahead and submit the Site Info, Waste Bins, Survey questions and pictures from this first phase of data collection.

When the team is ready to catalogue trash, it is helpful to work in pairs to open bags and sort, catalogue and count items (see Section 2C below for more detail on cataloguing). The person designated to

complete the MDT entry will enter the final item counts into the MDT once collection and counting is completed. This person will also need to take photos of sorted items and collect other photos from volunteers if needed. After completing the end survey, the individual can review the app entry and add any photos before submitting the data in the MDT (see Section 2D for tips on taking good photos). If the cataloguing is completed during a separate session in the MDT, only the survey fields that you were not able to complete the first day need to be completed.

Method 3 – Cataloguing trash as it is collected

This method can be used for teams who want to catalogue trash as it is collected using the MDT app. All participants should review the Gulf of Mexico Partnership – MDT Quick Guide in Appendix 1 and familiarize themselves with the MDT before the day of the event. The site leader should do an overview on how to use the application with volunteers to ensure they are comfortable with operating the application. It would be easier on volunteers if they work in pairs or groups with one person focusing on data entry while others are calling out items to be logged; however, working in groups is not a requirement. When cataloguing is complete, the individual/group will complete the required questions in the end survey, review the app entry and add any photos before submitting the data in the MDT.

The site leader or a designee should walk the entire site and log site boundaries, take photos, and collect other pertinent site information focusing on the Site Info and Waste Bins section of the item list. In addition, the site leader will complete the end survey based on their overall site assessment and the total volume/weight of items collected.

This method can be used for disparate groups who are not meeting and dispersing from a central location. If this is the case, each volunteer entering data will need to log their site boundaries and complete all pertinent fields in the end survey. The project lead should communicate with volunteers before clean-up activities begin to ensure they are comfortable with operating the application and that they know which survey questions are a priority for the project.

2B. Recording Data

All methods will use this categorizing reference when sorting trash.

- Pair up in teams of two to do the cataloguing and counting.
- Please see Appendix 2 for the **Data Card**, Appendix 3 for the **Data Card Reference Sheet**, Appendix 4 for **the Survey Reference Sheet**, Appendix 5 for the **Site Summary Form**, Appendix 6 for **Examples of Using the Data Card**, Appendix 7 for a **Volume-to-Weight Conversion Table** and Appendix 8 for **ETAP Table Cards.**

In the data card and in the MDT application, items are first identified by their *Item Group (*paper, glass, metal, or plastic or as a specialized category), then by the *Item Type*. Choose the item type that best describes your trash item. For example, for aluminum soda cans you would go to the item group "Metal" and the item type "Bottles, Cans & Containers." See **Appendix 3: Data Card Reference Sheet** for item descriptions.

Add a tally for each item under the appropriate *Item Condition* column describing the item's level of degradation (see **Appendix 4: Survey Reference Sheet** for photo examples of item condition). When

using the MDT, use the comment field to indicate item condition. This info could prove useful for determining if collected material is legacy litter or if it has recently escaped into the environment.

If there are any identifying features of the trash items, record these in the *Item Notes* column (e.g. brand/product name, language on packaging, unusual features) or using the comment field in the MDT.

For fragments/pieces of glass, plastic and foam that are less than 2.5cm in their longest dimension, use a measuring cup and record one tally for each cup of fragments found.

The data card has blank rows at the bottom for tracking a specific item that would otherwise be lumped into a broader category or an item of interest that is not otherwise included (e.g. microplastic pieces (<5mm in size), nurdles, specific brand names, etc.). In the MDT application, make sure to enter the item description in the comment field when recording a "write in" item.

Hint: Reference ***Appendix 6: Examples of Using the Data Card*** *for more insight on how to properly count and catalogue trash.* ***Appendix 8: ETAP Table Cards*** can be used during the sorting process to help distinguish between piles according to the categories on your **Data Card.**

Figure 4. Plastic beverage bottles sorted and catalogued (Photo courtesy of Emma Maschal).

Figure 5. A plethora of disposable plastic straws and stirrers are compiled in a bucket and measured.

Figure 6. Improperly disposed of cigarette butts collected and catalogued during a cleanup.

2C. Double Counting for Quality Assurance

Quality assurance for each project will vary based on the data quality objectives of the project. Minimum quality assurance recommendations for this protocol are to select four item types (piles) of trash at each site to be re-sorted (by item condition) and recounted. If multiple teams are cataloguing trash, then the four piles selected for QA should be sorted and counted the second time by a different team. Record the double-counted category tallies on a separate data card.

If your volunteers are tracking trash as they collect it using the MDT, complete QA on a subset of volunteer's data entry.

2D. Photographing and Measuring Trash

Once all items have been catalogued and sorted into piles according to the categories on your data card, take a photograph of each sorted pile to visually document the amount of trash picked up. You can record the photo ID for each pile in the notes section of the data card or on the back**.** Taking photos will assist in data quality assurance and control.

Note: When you take photos, use a standard naming convention to identify your photos. For example, using the site name or event and date: EventName_Date_Photo# or JuniperCreek_Sept 10 2018_01.

Figure 7. Plastic and Styrofoam items collected from an in-stream cleanup (Photo courtesy of Mobile Baykeeper).

Having a label of what you are taking photos of in the photo itself can be helpful in sifting through photos after the event. Record the date, project name, item counts, and other descriptive information on a piece of paper and place the paper in the photo. This will help the person who is reviewing photos later.

Measure the volume and/or weight of materials collected. Consider whether you want to measure the volume or weight of your collected items – we recommend noting both if possible.

Note: While measuring weight is often seen as a more user-friendly approach, it can produce misrepresentative results. Waterlogged objects recovered from riverine and coastal environments can often skew measurements when combined with or compared to dry items. Lightweight composite materials such as Styrofoam and fragmented pieces of plastic can also give an inaccurate representation of the amount of material collected.

- **Volume can be measured by estimating the amount of space the trash takes up in a 5-gallon bucket or a 55-gallon trash bag.** The easiest way to do this is to account for the percent fullness of the container/bag (without compacting whatever is inside). The volume of smaller items such as bottle caps or balloon fragments can be measured using smaller containers. Large, bulky objects like building materials, furniture, and appliances can be measured in cubic feet.
- **Weight can be measured by using a portable luggage scale.**

*Hint: See Appendix 7: **Volume-to-Weight Conversion Table** for insight on estimating measurements of trash collected.*

First, separate all sorted piles**.** You can choose the approach for measuring that works best with your volunteers:

a) Measure individual piles based on how you catalogued them and record each volume and/or weight on the data card. If using clean-up method 1 or 2, the person/s completing the entry in the MDT can enter this information in the comment field when they are recording the final item counts if desired.
b) Gather the piles into categories based on dominant material (plastic, metal, etc.), measure those piles and record each volume and/or weight on the data card. If using clean-up method 1 or 2, the person/s completing the entry in the MDT can enter this information in the comment field when they are recording the percent bulk measurements if desired.
c) Record the total weight and/or volume of material collected that will be disposed of as garbage, recycled, and composted at the bottom of your data card and/or using the end survey in the MDT.
    - Garbage – Waste to be sent to the landfill. Trash that is too fouled/degraded to be sent to recycling markets.
    - Recycle – This includes salvageable cardboard, paper, metal, glass, and some plastics (based on your local recycling guidelines).
    - Compost – Items that will be composted such as paper or other natural products and compostable plastics.

Hint: Be sure to indicate units (cubic feet, cubic yards, pounds, ounces, grams, etc.) with each measurement. Luggage scales work well but are not sensitive to very lightweight items/piles and so some of your weights will be recorded as "zero." This is expected.

Figure 8. A volunteer weighs a bag of trash collected from the Anacostia River in Washington, D.C. (Photo courtesy of Emma Maschal).

2E. Disposing of Materials Properly

Recycle, compost and dispose of the trash according to local regulations.

Step 3: Data Entry and Analysis using ETAP -MDT Gulf Partnership Spreadsheet

3A. Spreadsheet Summary

Once the cleanup activity is completed, your data may be entered into the ETAP-MDT-Gulf Partnership spreadsheet. The spreadsheet is organized in seven sheets:

1. Instructions: Includes this section of the reference manual along with other details that may be helpful in using the spreadsheet.
2. Data Card: Where all the item information should be entered.
3. Summary Plots: Summary tables and charts of data collected.
4. Printable Site Summary: A printable version of the Site Summary form (Appendix 5).
5. Printable Data Card: A printable version of the data card (Appendix 2).
6. Data Card Reference Sheet: A printable version of the data card reference sheet (Appendix 3).
7. Survey Reference Sheet: A printable version of the survey reference sheet (Appendix 4).

3B. Data Entry

Use the 'Data Card' sheet tab in the spreadsheet to enter information. In order to use the summary plots properly you will need to ensure that all green cells in the 'Data Card' sheet are filled in. Information required includes:

- Total number of tallies for each item under the appropriate *Item Condition* column.
- The size of the area where trash was collected in square feet.
- The total weight (lbs) and/or volume (ft^3) of items disposed of as garbage.
- The total weight (lbs) and/or volume (ft^3) of items recycled.
- The total weight (lbs) and/or volume (ft^3) of items composted.
- For items that were 'write in,' add the item type, material type, industry, and packaging/product descriptor. Descriptors can be found below and in the spreadsheet below the data card in their respective tables.

Material Type	Industry	Packaging/ Product
Plastic	Food & Beverage	Packaging
Foam	Retail, Food & Beverage	Service ware
Paper	Retail	Product
Glass	Automotive	Unknown
Metal	Smoking	
Tires	Home & Office	
Large	Fishing	
Chemicals	Illegal dumping	
Medical	Recreation	
Other/Mixed	Other/ Unknown	

Weight, *Volume*, and *Item Notes* may be entered in the blue cells for each item group or item type. This information will not be used to summarize data automatically. The project/site leader should set expectations with their team on the level of detail required in the blue cells.

After you have entered all information collected into the green cells, formulas will be calculated in the yellow cells. The *Totals* column provides the total number of items collected for each item type by adding the *Intact/ Un-fouled* column and the *Degraded/ Heavily Fouled* column. The *Totals* row provides: the total number of items collected that were intact, the total number of items collected that were degraded, and the overall total number of items collected at the site. The item density at the site is calculated below the data card table using the total number of items collected at the site divided by the site size in square feet.

3C. Analysis

In addition to the totals that were generated within the 'Data Card' sheet, entering all of the information in the green cells of the 'Data Card' sheet will generate some basic calculations and data charts in the 'Summary Plots' sheet that may be helpful in visualizing your data.

Disposal Method	Total Weight (lbs)	Total Volume (ft^3)
Garbage	110	18
Recycled	10	4
Compost	1	1
Total	121	23

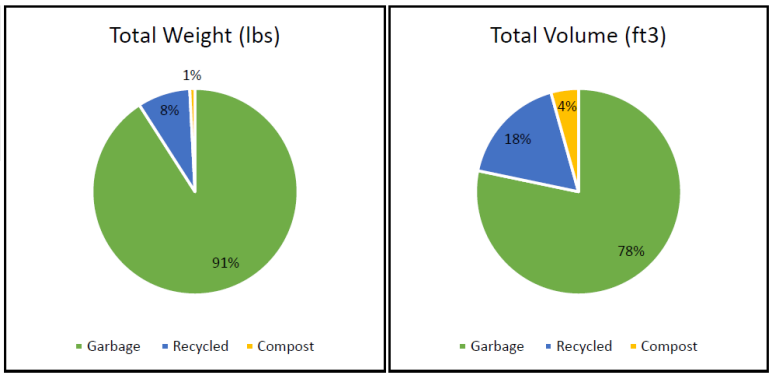


Figure 3C.1. Table showing the weight and volume of items collected based on the final disposal method used by the team. Pie charts are generated that show the portion of the total weight and volume of items collected that were disposed of as garbage, recycled, and composted.

Material Type	Item Count
Plastic	172
Foam	32
Paper	21
Glass	6
Metal	31
Tires	1
Large	0
Chemicals	1
Medical	3
Other/Mixed	44
Total Items Found	311

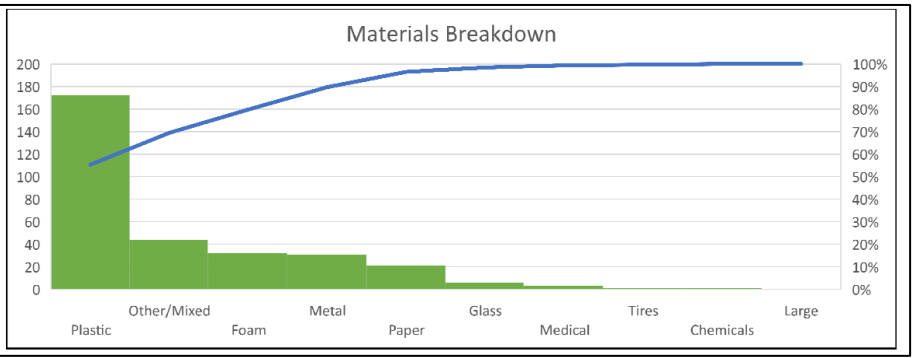


Figure 3C.2. Table that calculates the number of items collected by material type. The Pareto chart plots the number of items collected for each material type in descending order with a cumulative line as a percentage of the total.

Industry	Industry Sum
Food & Beverage	201
Retail, Food & Beverage	29
Retail	0
Automotive	1
Smoking	9
Home & Office	7
Fishing	25
Illegal dumping	0
Recreation	7
Other/ Unknown	32
Total Items Found	311

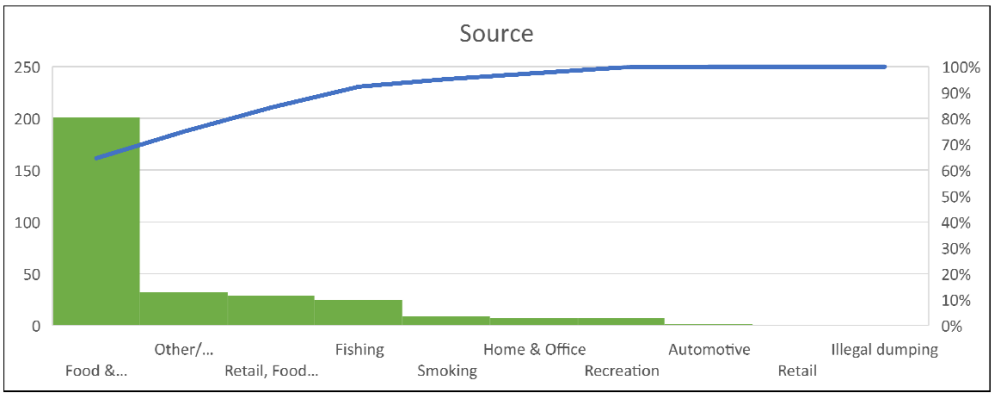


Figure 3C.3. Table that calculates the number of items collected by the industry source. The Pareto chart plots the number of items collected from each industry in descending order with a cumulative line as a percentage of the total.

Packaging or Products	Packaging or Product Sum
Packaging	110
Serviceware	120
Product	41
Unknown	40
Total Items Found	311

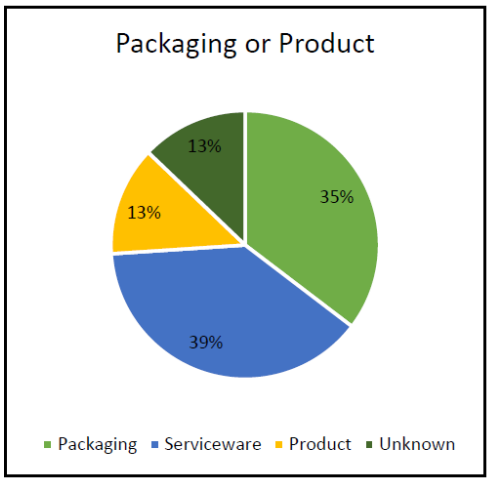


Figure 3C.4. Table calculates the number of items collected that are packaging, service ware, products, or unknown. The pie chart shows the portion of the total weight and volume of items collected that were packaging, service ware, products, or unknown.

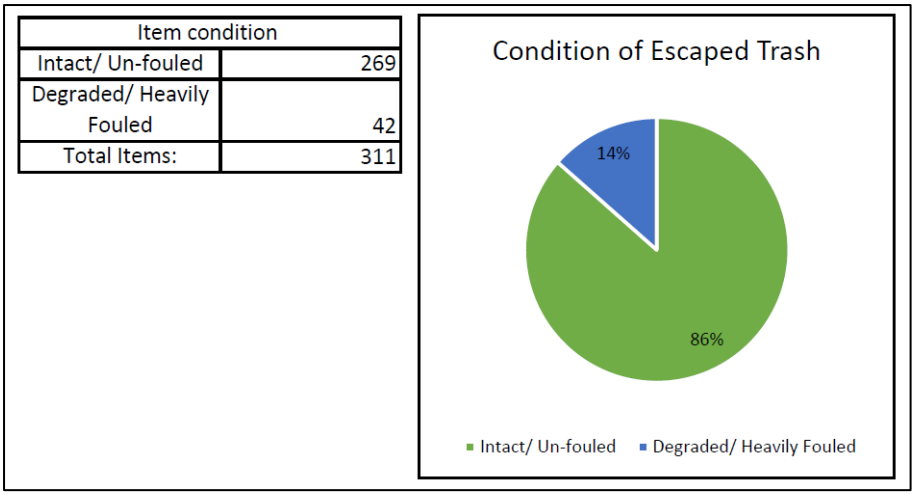


Figure 3C.5. Table calculates the number of items collected that were intact/unfouled and degraded/ heavily fouled. Pie charts are generated that show the portion of the total number of items collected that were intact and degraded.

The total number of items found should be consistent across all tables if the green cells were correctly filled out in the 'Data Card' sheet.

There are a number of uses for ETAP, depending on a group's particular focus and interests. For example, you may wish to conduct site assessments before and after implementing a trash-prevention policy or voluntary action, to test its impacts; other groups may be interested in conducting site assessments to identify key sources of localized trash pollution. Perhaps your group is conducting site assessments in order to collect data on the potential threats posed by trash pollution to local waterways or storm drain systems, or to assess the impact of land use changes on the level of trash pollution in each area. No matter what your goals are, once ETAP has been completed your group can choose to use your data how you see fit.

A tool to aid in data analysis using downloads from the MDT is forthcoming. See the debristracker.org for tips on viewing your data. If you have any questions concerning the Gulf of Mexico Partnership version of ETAP or about using the tools described herein email mills.calista@epa.gov.

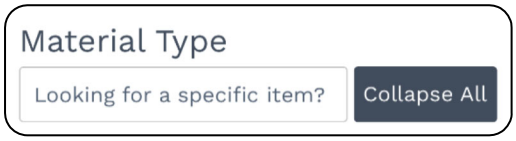
Appendix 1:
Gulf of Mexico Partnership –
MDT Quick Guide

Gulf of Mexico Partnership – MDT Quick Guide

The Gulf of Mexico Partnership is meant to facilitate collaboration among Gulf stakeholders to protect, maintain, and restore the health and productivity of the Gulf of Mexico. Thousands of people have used the Marine Debris Tracker (MDT) app to create data points for litter and debris all over the world. This data helps to track the progress of prevention efforts, add value to cleanups, and provide important baseline knowledge which can be used to inform solutions. The Gulf of Mexico Partnership is using the Marine Debris Tracker to provide an electronic platform for stakeholders to consistently collect data on marine debris and litter removed from the environment in the Gulf of Mexico and its watershed.

Getting started in the MDT app:

1. Download the Marine Debris Tracker app from the Apple or Google Play store onto your device.
2. Open the app and click Start Tracking to begin.
3. Select the Gulf of Mexico Partnership icon and then “use this list” to start tracking.
4. Logging in or creating an account enables you to keep track of your own data and also view and download the data online. Here you can also link your account to SciStarter or Facebook.
5. Click on the Collapse All button to collapse all the sections of the list. Scroll to the section of the list where you want to add an item and expand that section by clicking the arrow. Scroll down the list until you find what you want to track.



6. Find the item you want to add, then use the +/- signs to change the amount, or type directly over the number. Click on the item to expand a text field to add descriptive information about the item (i.e. degraded or intact item condition, brand, signs of wildlife interaction, tags, etc.). Click Add to save the item and GPS coordinates.

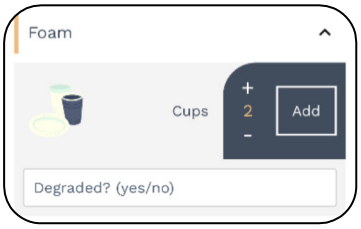


Photo Examples of Item Condition

Intact / Un-fouled	Degraded / Heavily Fouled
	
There is no evidence of object degradation or organisms growing on it so this would be classified as intact and unfouled. Some indicators of the object being intact/ unfouled are preservation of the original color, no signs of abrasion or rusting, shiny, and texture intact.	*There is clear evidence of weathering, degradation, and/or accumulation of organisms on the object. Some indicators of the object being degraded/ heavily fouled are extreme rust, abrasion, color bleached or undetectable, pitted, rounded and worn edges, and a brittle or cracked surface.*

The total number of items you have tracked will increase when you click Add as indicated by the count on the Manage Items (#) button. Note: While logging debris, there's no need to be on a wi-fi network.

For team efforts it may be helpful to designate individuals who will complete data entry in the app, in particular the Site Info section and the Waste Bin section. Tips for completing these sections are below.

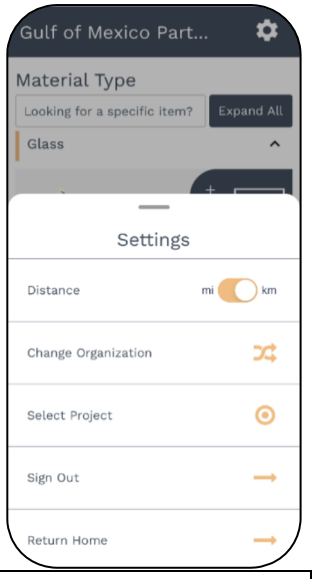
Site Info Section:

Site boundary point	Site boundary location. Select Add in the app while standing at the site boundary.
storm drain	Storm drain within the site boundary. Select Add in the app while standing at a storm drain.
critical habitat	Critical habitat within the site boundary. Select Add in the app while standing in/near critical habitat.
waterway	Waterway within the site boundary. Select Add in the app while standing at the edge of waterway.
trash capture device	Trash capture device within the site boundary. Select Add in the app while standing near a trash capture device (i.e. Water Goat, Litter Gitter, Seabin, etc.)
Litter prevention signage	Litter prevention signage within the site boundary. Select Add in the app while standing near signage.

Waste Bin Section:

trash receptacle (comment if no lid or overflowing)	Trash receptacle within the site boundary. Select Add in the app while standing near a receptacle.
recycle receptacle (comment if no lid or overflowing)	Recycle receptacle within the site boundary. Select Add in the app while standing near a receptacle.
cigarette receptacle (comment if no lid or overflowing)	Cigarette receptacle within the site boundary. Select Add in the app while standing near a receptacle.
Fishing line receptacle (comment if no lid or overflowing)	Fishing line receptacle within the site boundary. Select Add in the app while standing near a receptacle.
Other	Receptacle not described otherwise within the site boundary. Select Add in the app while standing near a receptacle. Note if the receptacle has no lid or if it is overflowing.
Dumpster (comment if overflowing)	Dumpster within the site boundary. Select Add in the app while standing near a Dumpster.

7. The gear at the top right will expand the Settings menu. From there you can select the preferred units for measuring distance, change the organization/list you are using, select a project to associate your datacard with, sign out, or return to the home screen.



8. When finished logging, select the Continue button at the bottom right. You will be prompted to complete an end survey. Only one person for the clean-up event needs to complete the end survey in its entirety. For team efforts it may be helpful to designate one or a few individuals to complete the end survey. Tips for completing the end survey are below.

Organization Name	Enter the organization you are affiliated with.
Location (State)	Multiple Choice: Select the state where work is occuring
Other General Observations	Additional information such as a recent big event in the area, excessive trash near buildings, nearby roads and highways, transit hubs or bus stops, and other features that could contribute to trash condition.
Funding Source	Multiple choice: Select how organization is funding clean-up activities.
What was the predominant condition of the overall site?	Select predominant site condition based on the table in the field reference guide (not littered, slightly littered, littered, very littered).
What was the condition of most items collected?	Select the predominant item condition observed (intact or degraded). Use the photo guide included in the field reference guide.
Number of storm drains less than 100 ft from site boundary:	Enter the number of storm drains or channelized outlets that are within 100 ft beyond the site boundary.
Describe critical habitat within or near the site.	Describe critical habitat within the site or nearby (within 100 ft beyond the site boundary). These are specific geographic areas that contain physical or biological features essential to the conservation of an endangered or threatened species and that may require special management and protection. Critical habitat may also include areas that are not currently occupied by the species but will be needed for its recovery.
Waterways less than 100 ft from site boundary:	Enter the number of waterways or waterway outlets that are within 100 ft beyond the site boundary.
Substrate or Bottom Type	Select the substrate or bottom type where debris was collected
Trap type	Multiple Choice: Select trap types that were found.
Evidence of wildlife interaction - bite mark shape	Select the types of bite marks observed on debris collected.
Evidence of wildlife interaction - entanglement	Describe evidence of wildlife entanglement in marine debris collected.
Describe tags on traps (color, number, etc.)	Describe tags on traps (color, number, etc.)
Water Depth (ft)	Enter the water depth where debris was collected.

Condition of the site:

Not Littered	*Effectively no trash is observed in the assessment area.*
	Approximately less than one piece per two car lengths on average
	Some small pieces in the area, but they are not obvious at first glance
	One person can easily clean up all trash observed in a very short timeframe.
Slightly Littered	*Predominantly free of trash except for a few littered areas.*
	On average, one piece per two car lengths
	Trash could be collected by one or two individuals in a short period of time.
Littered	*Predominantly littered except for a few clean areas.*
	Trash is widely/evenly distributed and/or small accumulations are visible on the street, sidewalks, or inlets.
	At least two or three pieces per car length on average
	It would take a more organized effort to remove all trash from the area.
Very Littered	*Trash is continuously seen throughout the assessment area,*
	Large piles and a strong impression of lack of concern for litter in the area.
	There is often significant litter along gutters.
	Requires a large number of people and organized effort to remove all trash.

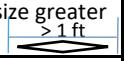
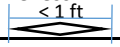
9. After you save the survey responses, you will be prompted to review your data and Pathlog. At this time you can also select images to upload with your list. Check what you've logged and click Submit to upload to the open data publicly accessible database or Save Session to upload once you're in a place with access to internet or data. Your location is kept private because usernames are not visible in the online map.

Appendix 2:
Printable Data Card

EPA ETAP Data Card **Date _____ Name _____ Site/Segment #_____**

Instructions: Green indicates required information. Mark 1 tally for each item type found under the appropriate item condition column. Blue cells indicate optional information that may be helpful but not required. More detailed definitions for each item category can be found in the Reference Sheet. Thank you for your efforts!

		Item condition		Weight (lbs)	Volume (ft^3)	Item Notes
	Item Type	Intact/ Un-fouled	Degraded/ Heavily Fouled			Identifying features: Product, Language, Event, etc.
Plastic	Bottles & Containers					
	Straws & Stirrers					
	Bottle Caps & Tabs					
	Beverage rings					
	Food Wrappers & Snack Bags					
	Food & Drink Pouches					
	Cups					
	Lids					
	Utensils					
	Plates & Bowls					
	Clamshells					
	Grocery & Retail Bags					
	Small Fragments (1 tally = 1 cup)					
	Other Plastic					
Foam	Cups					
	Plates & Bowls					
	Clamshells					
	Other Foam (1 tally = 1 cup small pieces)					
Paper	Cardboard					
	Bags					
	Newspaper, Junk Mail, Receipts & Office Paper					
	Cups					
	Beverage & Food Cartons					
	Other Paper					
Glass	Bottles, Jars & Containers					
	Other Glass (1 tally = 1 cup small pieces)					
Metal	Bottles, Cans & Containers					
	Bottle Caps & Tabs					
	Other Metal					

	Item Type	Item condition		Weight (lbs)	Volume (ft^3)	Item Notes
		Intact/ Un-fouled	Degraded/ Heavily Fouled			Identifying features: Product, Language, Event, etc.
Fishing	Hooks & Lures					
	Buoys & Floats					
	Trap					
	Trap Parts					
	Nets with mesh size greater than 1 foot 					
	Nets with mesh size less than 1 foot 					
	Rope (1 tally = 1 foot)					
	Fishing Line (1 tally = 1 foot)					
	Tangled Fishing Line Bundle over 1 square foot (1 tally per square foot)					
	Tangled Fishing Line Bundles under 1 square foot					
	Aquaculture Gear					
	Other					
Auto	Tires					
	Other					
Smoking	Cigarettes & Cannabis					
	E-Cigarettes & Vaping					
	Lighters					
Other	Chemical, Paint & Other Hazardous					
	Batteries & Electronics					
	Building Materials					
	Furniture & Carpet					
	Appliances					
	Medical Waste, Sharps, & Biohazardous					
	Textiles, Clothing & Shoes					
	Toiletries/ Personal Hygiene					
	Balloons					
	Toys, Sports, & Rec Equipment					
	Whole Bags of Mixed Trash					

	Item Type	Item condition: Intact/ Un-fouled	Item condition: Degraded/ Heavily Fouled	Weight (lbs)	Volume (ft^3)	Item Notes: Identifying features: Product, Language, Event, etc.
	Write in					
	Write in					
	Write in					
	Write in					
	Write in					
	Total					

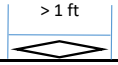
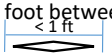
Disposal Method	Total Weight (lbs):	Total Volume (ft^3):
Garbage		
Recycled		
Compost		

Site Size (ft^2)

Appendix 3:
Printable Data Card Reference Sheet

Group	Item Type	Descriptions	Using the comment field (click on the item and it will pop up below)
Plastic	Bottles & Containers	Plastic bottles and jugs of any size or resin. Examples include plastic bottles and jugs for soda, water, sports drinks, juice, tea, milk, wine coolers, and liquor bottles. Includes bottles labelled “compostable” or “bio-based.”	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Plastic	Straws & Stirrers	Plastic drinking straws and stirrers. Includes “compostable” or “bio-based.”	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Plastic	Bottle Caps & Tabs	Loose plastic bottle caps, plastic pull tabs, lids, and seals made of plastic, used in the packaging/sealing of beverage containers. Does not include bottle caps that are still on a beverage bottle.	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Plastic	Beverage rings	Beverage packaging rings to hold soft drinks or beer cans. Examples: 4-pack, 6-pack, 8-pack, & 12-pack beverage rings commonly used for canned or bottled beverages.	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Plastic	Food Wrappers & Snack Bags	Wrappings or bags used to package food, such as wrappers for candy and gum, snack bags, chip bags, zipper-closeable bags, condiment packets, and produce bags. Includes wrappers labelled “compostable” or “bio-based.” Does not include pouches (see PLASTIC: Food & Drink Pouches).	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Plastic	Food & Drink Pouches	Plastic pouches made of thicker, multi-layer flexible material. May have a flat bottom so that package would stand up on its own, but not always. Material is thicker than potato chip bags. Examples include plastic coffee packages; juice pouches; baby food pouches with or without plastic screw top; soup pouches; salad dressing pouches; wine pouches; and backpacking meals in pouches.	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Plastic	Cups	Includes plastic cups of all sizes other than foam.	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Plastic	Lids	Plastic lids from plastic tubs and containers, such as cottage cheese, yogurt, butter, etc.	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Plastic	Utensils	Plastic forks, knives, and spoons.	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Plastic	Plates & Bowls	Plastic plates and bowls of all sizes other than foam.	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Plastic	Clamshells	Hinged plastic (not foam) take-out containers of any size that open like the shell of a clam.	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Plastic	Grocery & Retail Bags	Plastic shopping bags used to contain merchandise, given out by the store or restaurant with the purchase (including dry cleaning bags). This type does not include full bags of trash (see "OTHER: Whole Bags of Mixed Trash"). Includes bags labelled “compostable” or “bio-based.”	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Plastic	Small Fragments (1 tally = 1 cup)	Film or hard plastic pieces of unknown origin less than 2.5 cm in their longest dimension. If less than 1 cup of fragments are found record one tally *If you want to collect and count microplastic pieces (<5mm in size) using this protocol, we suggest that you use a write-in space.	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.

Group	Item Type	Descriptions	Using the comment field (click on the item and it will pop up below)
Plastic	Other Plastic	Plastic that cannot be put in any other category. Includes film/flexible plastic other than grocery and retail bags (see PLASTIC: Grocery & Retail Bags) and balloons (see “OTHER: Balloons”). Includes durable plastic products other than toys and games (see "OTHER: Recreation"), and furniture (see "OTHER: Furniture & Carpet"). Examples include salad dressing bottles, condiment bottles, butter, yogurt, and cottage cheese tubs, buckets, laundry baskets, totes, garbage cans, flower pots, and plastic pipes; and film products such as agricultural film (films used in various farming and growing applications, such as silage greenhouse films, mulch films, and wrap for hay bales), plastic sheeting used as drop cloths, plastic mailing pouches, shrink-wrap, and bubble wrap. Includes items labelled “compostable” or “bio-based.” Does not include any personal care products or bottles (see "OTHER: Toiletries/personal hygiene").	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Foam	Cups	Foam (also known as expanded polystyrene or styrofoam) cups of all sizes.	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Foam	Plates & Bowls	Foam Plates and Bowls of all sizes.	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Foam	Clamshells	Hinged foam take-out containers of any size that open like the shell of a clam.	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Foam	Other Foam (1 tally = 1 cup small pieces)	All other foam items, including foam ice chests, foam packing peanuts and other product packing foam, and foam used for home food packaging such as foam meat trays and egg cartons. Record one tally per cup of small pieces (<2.5 cm). If less than 1 cup of small pieces are found record one tally.	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Paper	Cardboard	Cardboard has a center wavy layer sandwiched between two outer layers. Examples include entire cardboard containers, such as shipping and moving boxes, computer packaging cartons, and sheets and pieces of boxes and cartons. This category does not include chipboard boxes such as cereal boxes or tissue boxes (see "PAPER: Other Paper").	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Paper	Bags	Paper Bags made from kraft paper. Paper may be brown (unbleached) or white (bleached). Examples include paper grocery bags, fast food bags, and department store bags.	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Paper	Newspaper, Junk Mail, Receipts & Office Paper	Paper used for newspapers, receipts, white ledger and other office paper, magazines and catalogs, glossy inserts, stapled college class schedules, manila envelopes, junk mail, carbonless forms, catalogs, and brochures. Does not include hardback or paperback books or telephone directories (see “PAPER: Other Paper”).	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Paper	Cups	Paper cups, often lined with either plastic or wax, such as to-go coffee cups.	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Paper	Beverage & Food Cartons	Gable-top containers such as milk cartons and orange juice cartons, and aseptic containers used for products like soy milk, coconut water, or soup. These are often paper containers lined with plastic.	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.

Group	Item Type	Descriptions	Using the comment field (click on the item and it will pop up below)
Paper	Other Paper	Items made mostly of paper that do not fit into any of the above types. Examples include tissue boxes, paperboard boxes for software, self-adhesive notes, hard cover and paperback books, telephone directories, sepia, carbon paper, photographs, sheets of paper, stick-on labels, and paper mailing envelopes lined with bubble wrap or plastic, plates, bowls, paper straws, paper and waxed paper wrappings, wooden stirrers, cup and beverage holders, napkins or paper towels, and pizza boxes, cereal boxes, cardboard egg cartons, ice cream cartons and other frozen food boxes, and boxes used to hold 6 or more individual beverages.	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Glass	Bottles, Jars & Containers	Glass bottles, jars, or containers of any size or color designed to contain beverages such as beer, wine, wine coolers, liquor, soda, water, tea, juice, sports & health drinks or contains food such as, pickles, olives, mayonnaise, jam, and sauces.	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Glass	Other Glass (1 tally = 1 cup small pieces)	Glass products that do not fit into another category, or that are not distinguishable by type of product. Record one tally per cup of small pieces (<2.5 cm). If less than 1 cup of small pieces are found record one tally.	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Metal	Bottles, Cans & Containers	Metal bottles, cans or containers of any size designed to contain beverages such as beer, juice or soda; also includes canned food and pet food.	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Metal	Bottle Caps & Tabs	Pull tabs, bottle caps, lids, and seals made of metal and used in the packaging/sealing of metal beverage containers.	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Metal	Other Metal	Products made entirely from metal or predominantly metal products that do not fit into any other category. Includes items such as metal clothes hangers, metal pipes, aluminum tin foil, and small appliances comprised mainly of metal such as toasters and hair dryers. Does not include electronics such as microwaves (see “OTHER: Batteries & Electronics”), or major appliances such as refrigerators (see “OTHER: Appliances”).	Describe item condition (degraded or intact), brand information, evidence of wildlife interaction.
Fishing	Hooks & Lures	Includes fishing hooks & lures.	Describe item condition (degraded or intact), brand information, material type, evidence of wildlife interaction, etc.
Fishing	Buoys & Floats	Buoys & floats used for fishing.	Describe item condition (degraded or intact), brand information, material type, evidence of wildlife interaction, etc.
Fishing	Trap	Traps used to catch crabs, lobster, fish, or other organisms.	Describe item condition (degraded or intact), brand information, material type, evidence of wildlife interaction, etc.
Fishing	Trap Parts	Pieces and parts of traps that are no longer attached to the trap.	Describe item condition (degraded or intact), brand information, material type, evidence of wildlife interaction, etc.
Fishing	Nets with mesh size greater than 1 foot	Nets with greater than 1 foot between opposite knots of stretched mesh 	Describe item condition (degraded or intact), brand information, material type, evidence of wildlife interaction, etc.
Fishing	Nets with mesh size less than 1 foot	Nets with less than 1 foot between opposite knots of stretched mesh 	Describe item condition (degraded or intact), brand information, material type, evidence of wildlife interaction, etc.
Fishing	Rope (1 tally = 1 foot)	1 tally = 1 continuous foot. Example: 5 continuous feet of rope equals 5 tallies.	Describe item condition (degraded or intact), brand information, material type, evidence of wildlife interaction, etc.
Fishing	Fishing Line (1 tally = 1 foot)	1 tally = 1 continuous foot of fishing line	Describe item condition (degraded or intact), brand information, material type, evidence of wildlife interaction, etc.

Group	Item Type	Descriptions	Using the comment field (click on the item and it will pop up below)
Fishing	Tangled Fishing Line Bundle over 1 square foot (1 tally per square foot)	Tangled bundle of fishing line larger than 1 square foot in size	Describe item condition (degraded or intact), brand information, material type, evidence of wildlife interaction, etc.
Fishing	Tangled Fishing Line Bundles under 1 square foot	Tangled bundle of fishing line less than 1 square foot in size	Describe item condition (degraded or intact), brand information, material type, evidence of wildlife interaction, etc.
Fishing	Aquaculture Gear	Gear used for breeding, raising, and harvesting fish, shellfish, and aquatic plants	Describe item condition (degraded or intact), brand information, material type, evidence of wildlife interaction, etc.
Fishing	Other	Fishing related items that do not fit into other fishing categories	Describe item condition (degraded or intact), brand information, material type, evidence of wildlife interaction, etc.
Automotive	Tires	Includes tires from all types of automotive vehicles and all sizes.	Describe item condition (degraded or intact), type/size of tire, brand information, material type, evidence of wildlife interaction, etc.
Automotive	Other	All motorized vehicle related items other than tires, including hubcaps, tailpipes, batteries used for motorized vehicles, motor oil and other vehicle fluids, rearview mirrors, lights, or window glass known to be from an automobile or other motorized vehicle, and whole auto-bodies, trucks, trailers, and truck cabs.	Describe item condition (degraded or intact), item type, brand information, material type, evidence of wildlife interaction, etc.
Smoking	Cigarettes & Cannabis	Discarded ends, pieces or filters of cigarettes, cigars and cannabis products, unsmoked items, chewing tobacco, pipe tobacco, matches, matchbooks and packaging for tobacco and cannabis products such as paper boxes, plastic or foil wrappings, or other materials used to package cigarettes, cigars, cannabis, chewing or pipe tobacco, including individual cigarette packages and unused cigarette papers. Spent smokeless tobacco is included.	Describe item condition (degraded or intact), item type, brand information, material type, evidence of wildlife interaction, etc.
Smoking	E-Cigarettes & Vaping	Includes all e-cigarette and vaping items.	Describe item condition (degraded or intact), item type, brand information, material type, evidence of wildlife interaction, etc.
Smoking	Lighters	Includes lighters of all types and sizes.	Describe item condition (degraded or intact), brand information, material type, evidence of wildlife interaction, etc.
Other	Chemical, Paint & Other Hazardous	Examples include latex paint, oil-based paint, spray paint, stains and varnishes, pesticides, caustic cleaners, fluorescent and LED bulbs/lamps, and mercury-containing items such as thermostats and thermometers. This category includes empty containers of these materials. This category does not include motor oil and other vehicle fluids (see "Automotive: Others").	Describe item condition (degraded or intact), item type, brand information, material type, evidence of wildlife interaction, etc.
Other	Batteries & Electronics	Electronics and e-related materials such as cell phones, portable electronic book readers, tablets, laptop computers, computer games and other electronic toys, CD players, camcorders, digital cameras, cell phone and other device chargers, microwaves, stereos, VCRs, DVD players, radios, audio/visual equipment, keyboards, printers, televisions, computers and computer monitors, tapes, CDs, DVDs and batteries of all types, including lithium batteries.	Describe item condition (degraded or intact), item type, brand information, material type, evidence of wildlife interaction, etc.

Group	Item Type	Descriptions	Using the comment field (click on the item and it will pop up below)
Other	Building Materials	Includes brick, concrete, gypsum board, fiberglass insulation, roofing waste, asphalt, lumber, plywood, pallets, nails, screws, toilets, sinks, carpet, and other building and infrastructure related materials. Other ceramic can be included here as well, such as ceramic dishware and garden pottery. (For light bulbs/lamps, see “OTHER: Chemical, Paint & Other Hazardous.”)	Describe item condition (degraded or intact), item type, brand information, material type, evidence of wildlife interaction, etc.
Other	Furniture & Carpet	All large and hard-to-handle items not defined elsewhere, including furniture, mattresses, carpet, lawn furniture, and box springs.	Describe item condition (degraded or intact), item type, brand information, material type, evidence of wildlife interaction, etc.
Other	Appliances	Includes large appliances such as refrigerators, dishwashers, stoves, and dryers. This category does not include electronics such as stereos or microwaves (see OTHER: Batteries & Electronics").	Describe item condition (degraded or intact), item type, brand information, evidence of wildlife interaction, etc.
Other	Medical Waste, Sharps, & Biohazardous	Medical waste includes needles, syringes, I.V. tubing, medications, ointments, creams, nutritional supplements such as vitamins, etc. used to heal or supplement the nutrition of people or animals. Also includes medicine and medical equipment packaging.	Describe item condition (degraded or intact), item type, brand information, material type, evidence of wildlife interaction, etc.
Other	Textiles, Clothing & Shoes	Items made of thread, yarn, fabric, cloth, or rubber. Examples include clothes, fabric trimmings, draperies, leather belts, flip flops, and bathroom rugs. This type does not include furniture, carpet, or mattresses (see "OTHER: Furniture & Carpet").	Describe item condition (degraded or intact), item type, brand information, material type, evidence of wildlife interaction, etc.
Other	Toiletries/ Personal Hygiene	Bottles and containers of health care products such as cosmetics, shampoo, hair care styling products, lotion, personal hygiene products such as toothbrushes and toothpaste, pads and tampons, diapers, make-up sponges, gloves, and condoms.	Describe item condition (degraded or intact), item type, brand information, material type, evidence of wildlife interaction, etc.
Other	Balloons	Balloons made of all types of materials.	Describe item condition (degraded or intact), brand information, material type, evidence of wildlife interaction, etc.
Other	Toys, Sports, & Rec Equipment	Includes balls of all types, frisbees, sporting equipment of all types, other toys of all shapes and sizes, non-automotive bicycles, scooters, and tricycles.	Describe item condition (degraded or intact), item type, brand information, material type, evidence of wildlife interaction, etc.
Other	Whole Bags of Mixed Trash	Whole, closed bags of trash of any size. We do not ask you to open and sort the waste.	Describe item condition (degraded or intact), size/volume of bag, brand information, material type, evidence of wildlife interaction, etc.
Write in	Write in	Use this category to track any other specific item included in a broader category above or otherwise not included here, if you desire.	Describe item condition (degraded or intact), item type, brand information, material type, evidence of wildlife interaction, etc.
Site Info	Site boundary point	Site boundary location. Select Add in the app while standing at the site boundary.	Describe the boundary (road name, landmark, SW corner, stream edge, bankfull, etc.)
Site Info	storm drain	Storm drain or channelized outlet within the site boundary. Select Add in the app while standing at a storm drain.	Describe the storm drain or outlet
Site Info	critical habitat	Critical habitat within the site boundary. Select Add in the app while standing in/near critical habitat.	Describe critical habitat.
Site Info	waterway	Waterway or waterway outlet within the site boundary. Select Add in the app while standing near the waterway.	Describe the waterway.
Site Info	trash capture device	Trash capture device within the site boundary. Select Add in the app while standing near a trash capture device (i.e. Water Goat, Litter Gitter, Seabin, etc.).	Describe the capture device.
Site Info	Litter prevention signage	Litter prevention signage within the site boundary. Select Add in the app while standing near signage.	Describe signage.

Group	Item Type	Descriptions	Using the comment field (click on the item and it will pop up below)
Waste Bins	trash receptacle (comment if no lid or overflowing)	Trash receptacle within the site boundary. Select Add in the app while standing near a receptacle.	Note if the receptacle has no lid or if it is overflowing or other descriptive information.
Waste Bins	recycle receptacle (comment if no lid or overflowing)	Recycle receptacle within the site boundary. Select Add in the app while standing near a receptacle.	Note if the receptacle has no lid or if it is overflowing or other descriptive information.
Waste Bins	cigarette receptacle (comment if no lid or overflowing)	Cigarette receptacle within the site boundary. Select Add in the app while standing near a receptacle.	Note if the receptacle has no lid or if it is overflowing or other descriptive information.
Waste Bins	Fishing line receptacle (comment if no lid or overflowing)	Fishing line receptacle within the site boundary. Select Add in the app while standing near a receptacle.	Note if the receptacle has no lid or if it is overflowing or other descriptive information.
Waste Bins	Other	Receptacle not described otherwise within the site boundary. Select Add in the app while standing near a receptacle.	Note the receptacle if the receptacle has no lid or if it is overflowing or other descriptive information.
Waste Bins	Dumpster (comment if overflowing)	Dumpster within the site boundary. Select Add in the app while standing near a Dumpster.	Note if the Dumpster is overflowing or other descriptive information.
Bulk	Percentage bulk plastic	Percent of the total items/weight/volume collected that were plastic.	Note if this is a percentage of total item count, weight, or volume.
Bulk	Percentage bulk foam	Percent of the total items/weight/volume collected that were foam.	Note if this is a percentage of total item count, weight, or volume.
Bulk	Percentage bulk metal	Percent of the total items/weight/volume collected that were metal.	Note if this is a percentage of total item count, weight, or volume.
Bulk	Percentage bulk paper	Percent of the total items/weight/volume collected that were paper.	Note if this is a percentage of total item count, weight, or volume.
Bulk	Percentage bulk fishing	Percent of the total items/weight/volume collected that were fishing related items.	Note if this is a percentage of total item count, weight, or volume.
Bulk	Percentage bulk other	Percent of the total items/weight/volume collected that do not fit in another category.	Note if this is a percentage of total item count, weight, or volume.

Appendix 4:
Printable Survey Reference Sheet

End Survey Tips

Survey Question	Instructions
Organization Name	Enter the organization you are affiliated with.
Location (State)	Multiple Choice: Select the state where work is occuring
Other General Observations	Additional information such as a recent big event in the area, excessive trash near buildings, nearby roads and highways, transit hubs or bus stops, and other features that could contribute to trash condition.
Funding Source	Multiple choice: Select how organization is funding clean-up activities.
If other funding source, please specify:	Specify funding source
If you followed a specific protocol, please list it here:	Name protocol followed
Number of people participating in the clean-up event:	Number of people participating
Duration of time (in hours) spent cleaning the site:	How long did it take to collect debris or litter
Site Area (ft^2)	Estimate site square footage.
Weight of Debris or Litter Collected (lbs)	Number
Weight of Compost Collected (lbs)	Number
Weight of Materials Recycled (lbs)	Number
Volume of Trash Debris or Litter Collected (ft^3)	Number
Volume of Compost Collected (ft^3)	Number
Volume of Materials Recycled (ft^3)	Number
What was the predominant condition of the overall site?	Select predominant site condition based on the table below.

Not Littered	*Effectively no trash is observed in the assessment area.*
	Approximately less than one piece per two car lengths on average
	Some small pieces in the area, but they are not obvious at first glance
	One person can easily clean up all trash observed in a very short timeframe.
Slightly Littered	*Predominantly free of trash except for a few littered areas.*
	On average, one piece per two car lengths
	Trash could be collected by one or two individuals in a short period of time.
Littered	*Predominantly littered except for a few clean areas.*
	Trash is widely/evenly distributed and/or small accumulations are visible on the street, sidewalks, or inlets.
	At least two or three pieces per car length on average
	It would take a more organized effort to remove all trash from the area.
Very Littered	*Trash is continuously seen throughout the assessment area,*
	Large piles and a strong impression of lack of concern for litter in the area.
	There is often significant litter along gutters.
	Requires a large number of people and organized effort to remove all trash.

Survey Question	Instructions
What was the condition of most items collected?	Select the predominant item condition observed. Use the photo guide below.

Photo Examples of Item Condition

Intact / Un-fouled

There is no evidence of object degradation or organisms growing on it so this would be classified as intact and unfouled. Some indicators of the object being intact/ unfouled are preservation of the original color, no signs of abrasion or rusting, shiny, and texture intact.

Degraded / Heavily Fouled

There is clear evidence of weathering, degradation, and/or accumulation of organisms on the object. Some indicators of the object being degraded/ heavily fouled are extreme rust, abrasion, color bleached or undetectable, pitted, rounded and worn edges, and a brittle or cracked surface.

What is the land use within the boundaries of your site?	Select all land use types that occur within the site boundary.

Land Use Type
High density residential (5+ dwellings per acre)
Low density residential (2-4 dwellings per acre)
Rural residential (1-5 acre lots)
Retail & wholesale (i.e. stores, restaurants, post offices, hotels)
Commercial & services (i.e. local govt, education, research centers, offices, churches, hospitals, & military)
Light and other industrial (i.e. light & unspecified industrial, warehousing, food processing)
Heavy Industrial (i.e. heavy fabrication & assembly raw materials processing)
Recreational (i.e. parks, golf courses, bike trails, etc.)
K-12 schools
Shoreline
Cemetery
State/ national park or wilderness

Survey Question	Instructions
Approximate number of days since the last rainfall event	
Number of storm drains less than 100 ft from site boundary	Enter the number of storm drains or channelized outlets that are within the first 100 ft outside of the site boundary.
Describe critical habitat within or near the site.	Describe critical habitat within or near the site (within 100 ft of the site boundary). Critical habitat is specific geographic areas that contain physical or biological features essential to the conservation of an endangered or threatened species and that may require special management and protection. Critical habitat may also include areas that are not currently occupied by the species but will be needed for its recovery.
Waterways less than 100 ft from site boundary:	Enter the number of waterways or waterway outlets that are within the first 100 ft outside of the site boundary.
Trap type	List trap types that were found (lobster, stone crab, blue crab, etc)
Describe bycatch in the trap	Describe species, live vs. dead, quantity, size/age class, etc.
Evidence of wildlife interaction - bite mark shape	List types of bite marks observed on debris collected (diamond, triangle, round, serrated)
Evidence of wildlife interaction - entanglement	Describe evidence of wildlife entanglement in marine debris collected. *report marine mammal, sea turtle, or shark entanglement and any live animal entanglement
Describe tags on traps (color, number, etc.)	Describe tags on traps (color, number, etc.)
Water Depth (ft)	Enter the water depth where debris was collected.
Substrate or Bottom Type	Select the substrate or bottom type where debris was collected

Appendix 5:
Printable Site Summary Form

ETAP Field Site Summary

Date:

Recent Weather:

Approximate number of days since the last rainfall event:

Organization Name:

Funding Source (circle one): EPA Gulf NRDA-RW NRDA-State
RESTORE NOAA N/A Other (specify)

Team leader:

Number of people participating in the clean-up event:

Number of hours spent cleaning the site:

Site Name and Location (state):

Site Description *(Road, beach, creek, city, etc.) :*

Overall site boundaries *(Identify the coordinates of the boundary points of the site. Coordinates should be recorded to the 5th decimal place for accuracy. For in-stream assessments, measuring bankfull width and/or wetted width at transects along the stream reach and the total reach length assessed may be preferred. Attach map if possible)* **:**

Boundary	Latitude	Longitude	Notes (landmarks, roads, etc.)

Total square footage of site:

Proximity to water, storm drain, or critical habitat. *Include photos.*

Features	Number of features within site boundary	Number of features less than 100 ft from site boundary
Waterways		
Storm drains		
Critical Habitat		

Weight/Volume of collected material.

	Weight (lbs)	Volume(ft^3)
Garbage		
Recyclables		
Compost		

Bulk percentage of total.

Category	**%**
Plastic	
Foam	
Metal	
Paper	
Fishing	
Other	
Total	**100**

Trash condition of the site *(circle the most predominant condition for your overall site)*

A	Not Littered	*Effectively no trash is observed in the assessment area.*
		Approximately less than one piece per two car lengths on average
		Some small pieces in the area, but they are not obvious at first glance
		One person can easily clean up all trash observed in a very short timeframe.
B	Slightly Littered	*Predominantly free of trash except for a few littered areas.*
		On average, one piece per two car lengths
		Trash could be collected by one or two individuals in a short period of time.
C	Littered	*Predominantly littered except for a few clean areas.*
		Trash is widely/evenly distributed and/or small accumulations are visible on the street, sidewalks, or inlets.
		At least two or three pieces per car length on average
		It would take a more organized effort to remove all trash from the area.
D	Very Littered	*Trash is continuously seen throughout the assessment area,*
		Large piles and a strong impression of lack of concern for litter in the area.
		There is often significant litter along gutters.
		Requires a large number of people and organized effort to remove all trash.

Preventative measures *(Indicate number within or near the site of: 1. receptacles as described below, 2: overflowing receptacles, and/or 3: receptacles without a lid (e.g. a trash receptacle within the site that is overflowing should be counted both in the within site column and the overflowing column))*

Receptacles	Within site	Near site	Overflowing	Without lid
trash receptacle				
recycle receptacle				
cigarette receptacle				
Fishing line receptacle				
Dumpster				
Other				
trash capture device				
Litter prevention signage				

Land use(s) within the boundaries of your site (check all that apply)

	Land Use Type
	High density residential (5+ dwellings per acre)
	Low density residential (2-4 dwellings per acre)
	Rural residential (1-5 acre lots)
	Retail & wholesale (i.e. stores, restaurants, post offices, hotels)
	Commercial & services (i.e. local govt, education, research centers, offices, churches, hospitals, & military)
	Light and other industrial (i.e. light & unspecified industrial, warehousing, food processing)
	Heavy Industrial (i.e. heavy fabrication & assembly raw materials processing)
	Recreational (i.e. parks, golf courses, bike trails, etc.)
	K-12 schools
	Shoreline
	Cemetery
	State/ national park or wilderness

Bottom Type (circle applicable):

silt/clay/mud sand pebble/gravel cobble boulders/bedrock modified earthen concrete seagrass

artificial reef natural coral reef shell other hardbottom manmade structure unknown other

Water Depth (ft): _____

Trap Type (circle all that apply): Stone Crab Blue Crab Lobster Other

Describe tags on traps (color, number, etc.)

Evidence of wildlife interaction:

Bite mark shape (circle all that apply): triangular diamond round

Describe entanglement observations:

General observations (including but not limited to recent big event in the area, excessive trash near buildings, nearby roads and highways, transit hubs or bus stops, and other features that could contribute to trash condition):

Subsections

Please identify boundaries for sections of your overall site that are assessed by each team.
The subsection ID numbers should match the data sheet ID numbers. Please note both weight and volume measurements if possible. Include notes, as appropriate.

Subsection 1 boundaries:

Subsection 1 square footage: *(lbs and/or ft^3)* Garbage: Recycled: Compost:

Subsection 2 boundaries:

Subsection 2 square footage: *(lbs and/or ft^3)* Garbage: Recycled: Compost:

Subsection 3 boundaries:

Subsection 3 square footage: *(lbs and/or ft^3)* Garbage: Recycled: Compost:

Subsection 4 boundaries:

Subsection 4 square footage: *(lbs and/or ft^3)* Garbage: Recycled: Compost:

Subsection 5 boundaries:

Subsection 5 square footage: *(lbs and/or ft^3)* Garbage: Recycled: Compost:

Subsection 6 boundaries:

Subsection 6 square footage: *(lbs and/or ft^3)* Garbage: Recycled: Compost:

Subsection 7 boundaries:

Subsection 7 square footage: *(lbs and/or ft^3)* Garbage: Recycled: Compost:

Subsection 8 boundaries:

Subsection 8 square footage: *(lbs and/or ft^3)* Garbage: Recycled: Compost:

Subsection 9 boundaries:

Subsection 9 square footage: *(lbs and/or ft^3)* Garbage: Recycled: Compost:

Subsection 10 boundaries:

Subsection 10 square footage: *(lbs and/or ft^3)* Garbage: Recycled: Compost:

Appendix 6:
Examples of Using the Data Card

Example A: *Disposable coffee cup lid*

If you were to categorize a Starbucks coffee cup lid using ETAP, the lid would be categorized under the Plastic materials group and as "Lids." You would place this in the Plastic AND "Lids" pile. When counting, it would be a plastic item.

Next, you will categorize the condition of the lid. If there are no signs of degradation, the lid will be counted under the "Intact/Un-fouled" Item condition column. See further description and examples of Item Condition in the Field Reference Sheet.

Under the Notes column, you might add the brand (for example, Starbucks). If you have multiple Starbucks lids, put the number of these lids next to the brand in the note section (i.e. Starbucks– 12).

Example B: *Disinfectant wipe*

A disinfectant wipe would be categorized in the Other materials group as "Toiletries/Personal Hygiene" and placed in this pile for counting. You will also assess the condition (intact versus degraded) and tally the item under the appropriate column.

Under the Notes column, you might add the type of toiletry/personal hygiene product and the total number if you have multiple (i.e. Wipes – 8).

Example C: *Plastic fragment*

To categorize a small piece of plastic, you would place it under the Plastic materials group. If it can't be easily identified as an item (beverage bottle, bottle cap, etc.) the plastic piece would go into the "Fragments" category and pile for counting.

The Item Condition would be categorized as "Un-fouled" if the plastic piece was not fragmented due to degradation, but by the item having been run over by a car, for example.

All of the plastic fragments collected during a site assessment can be measured together using a measuring cup and recording the total number of cups of fragments.

Appendix 7:
Volume-to-Weight Conversion Table

Below is the U.S. EPA Office of Resource Conservation and Recovery 2016 Volume-to-Weight Conversion Factors document for reference when measuring collected trash.

Standard Volume-to-Weight Conversion Factors

Category	Recyclable Materials	Volume	Estimated Weight (lbs)	Source
Appliances	Major Appliances			
	Dishwasher	1 unit	125	1
	Clothes Dryer	1 unit	125	1
	Stove	1 unit	150	1
	Refrigerator	1 unit	250	1
	Clothes Washer	1 unit	150	1
Automotive	Lead-Acid Battery			
	Auto	one	36	3
	Truck	one	47	3
	Scrap Tire			
	Light Duty Tires (passenger, light truck)	one	22.5	5
	Commercial Tires	one	120	5
	Fluids			
	Used Motor Oil	gallon	7.4	2
	Antifreeze	gallon	8.42	2
	Other Automotive			
	Oil Filters not crushed	drum	175	1
	Oil Filters crushed	drum	700	1
	Oil Filters	gallon	5	1
Carpeting	Carpet			
	Carpet	cubic yard	147	6
	Carpet Padding	cubic yard	62	6
Commingled Recyclable Material	Containers (Plastic bottles, Aluminum cans, Steel cans, Glass bottles) and Paper			
	Commingled Recyclables	cubic yard	262	4
	Containers (Plastic bottles, Aluminum cans, Steel cans, Glass bottles), Corrugated Containers and Paper			
	Campus Recyclables	cubic yard	92	7
	Commingled Recyclables	cubic yard	111	4
	Containers (Plastic bottles, Aluminum cans, Steel cans, Glass bottles) – No paper			
	Campus Recyclables	cubic yard	70	7
	Commingled Recyclables	cubic yard	67	4
	Commercial Recyclables	cubic yard	113	8
	Containers (Cans, Plastic) - No glass			
	Campus Recyclables	cubic yard	32	7
	Containers (Cans, Plastic) and Paper - No glass			
	Residential Recyclables	cubic yard	260	2
	Containers (Food/beverage, Glass) Corrugated Containers and Paper			
	Commercial Recyclables	cubic yard	88	2
	Commercial Recyclables	cubic yard	58	21
	Multifamily Recyclables	cubic yard	96	2
	Multifamily Recyclables	cubic yard	51	21

Category	Recyclable Materials	Volume	Estimated Weight (lbs)	Source
Commingled Recyclable Material	*Single family Recyclables*	cubic yard	126	2
	Containers (Food/beverage, Glass) Corrugated Containers and Paper- No glass			
	Campus Recyclables	cubic yard	139	2
	Commercial Recyclables	cubic yard	155	2
Electronics	Computer Equipment			
	Desktop	one	27	24
	Laptop	one	9.8	24
	Monitor			
	CRT	one	40	1
	15"	one	30	2
	17"	one	45	2
	21"	one	60	2
	Flat Panel	one	24	1
	Mixed Monitors	one	29.4	24
	Televisions			
	CRT < 19 inch	one	41	1
	CRT ≥ 19 inch	one	73	1
	Flat Panel	one	29	1
	Mixed TVs	one	67.3	24
	Peripheral Devices			
	Printers	one	16.1	24
	Mice	one	0.2	9
	Keyboards	one	2.9	9
	Mobile Devices			
	Cellular Phone	one	0.22	9
	Mixed Electronics			
	Brown Goods	cubic yard	343	6
	Computer-related Electronics	cubic yard	354	6
	Other Small Consumer Electronics	cubic yard	438	6
Food				
	Fats, Oils, Grease	55-gallon	412	2
	Organics - commercial	cubic yard	135	21
	Source Separated Organics - commercial	cubic yard	1,000	15
	Food Waste - restaurants	cubic yard	396	21
	Food Waste	cubic yard	463	4
	Food Waste	cubic foot	22-45	4
	Food waste - university	gallon	3.8	22
	Food Waste	64 gallon toter	150	4
	Food waste	2 cubic yard full towable	2,736	4
Glass	Bottles			
	Loose	cubic yard	380	4

Category	Recyclable Materials	Volume	Estimated Weight (lbs)	Source
Metals	Aluminum Cans			
	Uncompacted	cubic yard	46	4
	Uncompacted	case = 24 cans	0.7	11
	Baled	cubic yard	250-500	10
	Steel Cans			
	Whole	cubic yard	50-175	10
	Baled	cubic yard	700-1,000	10
	Steel Cans - Institution			
	Whole	can	0.09	7
	Whole	cubic yard	136	7
Paper	Newsprint			
	Loose	cubic yard	360-800	1
	Baled	cubic yard	750-1,000	10
	Books - paperback, loose	cubic yard	428	23
	Old Corrugated Containers			
	Flattened	cubic yard	106	4
	Baled	cubic yard	700-1,100	10
	Old Corrugated Containers and Chip Board			
	Uncompacted	cubic yard	74.54	4
	Office Paper			
	Computer Paper			
	Loose	cubic yard	375-465	1
	Compacted/Baled	cubic yard	755-925	1
	Mixed			
	Loose	cubic yard	110-380	1
	Loose	cubic yard	323	4
	Compacted	cubic yard	610-755	1
	Shredded	cubic yard	128	4
	Mixed Baled	cubic yard	1,000-1,200	10
	Miscellaneous			
	Cartons (milk and juice) uncrushed	cubic yard	50	7
Plastic	PET			
	PET Bottles - baled	30"x42"x 48"	525-630	12
	PET Thermoform - baled	30"x42"x 48"	525-595	12
	HDPE			
	HDPE Dairy - baled	30"x42"x 48"	525-700	12
	HDPE Mixed - baled	30"x42"x 48"	525-700	12
	Mixed PET and HDPE			
	Loose	cubic yard	32	7
	Mixed Bottles/Containers #1 - #7			
	Loose	cubic yard	40.4	4
	Mixed Bottles/Containers #3 - #7			

Category	Recyclable Materials	Volume	Estimated Weight (lbs)	Source
Plastic	*Loose*	cubic yard	25.7	4
	Film			
	LDPE, loose	cubic yard	35	13
	LDPE, compacted	cubic yard	150	13
	LDPE, baled	30" x 42" x 48"	1,100	13
	Miscellaneous			
	Trash Bags	cubic yard	35	6
	Grocery/Merchandise Bags	cubic yard	35	6
	Expanded Polystyrene Packaging/Insulation	cubic yard	32	6
Textiles	Mixed Textiles			
	Loose	cubic yard	125-175	10
	Baled	cubic yard	600-750	10
Wood	Wood			
	Wood Chips, green	cubic yard	473	1
	Wood Chips, dry	cubic yard	243	1
	Saw Dust, wet	cubic yard	530	1
	Saw Dust, dry	cubic yard	275	1
	Pallets	one	25	1
	Pallets and Crates	cubic yard	169	18
	Christmas Trees, loose	cubic yard	30	1
Yard Trimmings	Yard Trimmings			
	Leaves	cubic yard	250-500	1
	Leaves (Minnesota)	cubic yard	300 - 383	15
	Mixed Yard Waste			
	Uncompacted	cubic yard	250	1
	Compacted	cubic yard	640	1
	Prunings & Trimmings	cubic yard	127	6
	Branches & Stumps	cubic yard	127	6
Municipal Solid Waste	MSW - Commercial			
	Commercial - dry waste	cubic yard	56-73	16, 8
	Commercial - all waste, uncompacted	cubic yard	138	21
	Mixed MSW - Residential, Institutional, Commercial			
	Uncompacted	cubic yard	250-300	14
	Compacted	cubic yard	400-700	14
	Mixed MSW - Multifamily uncompacted	cubic yard	95	21
	MSW - Landfill			
	Compacted - MSW Small Landfill with Best Management Practices	cubic yard	1,200-1,700	17
	Compacted - MSW Large Landfill with Best Management Practices	cubic yard	1,700-2,000	17

Category	Recyclable Materials	Volume	Estimated Weight (lbs)	Source
Municipal Solid Waste	*Compacted - MSW Very Large Landfill with Best Management and Cover Practices, Combined MMSW/Industrial/and other solid waste, or/and Leachate Recirculation*	cubic yard	>2,000	17
C &D	Concrete			
	Large Concrete with Re-bar	cubic yard	860	18
	Large Concrete without Re-bar	cubic yard	860	18
	Small Concrete with Re-bar	cubic yard	860	18
	Small Concrete without Re-bar	cubic yard	860	18
	Asphalt Paving			
	Large Asphalt Paving with Re-bar	cubic yard	773	19
	Large Asphalt Paving without Re-bar	cubic yard	773	19
	Small Asphalt Paving with Re-bar	cubic yard	773	19
	Small Asphalt Paving without Re-Bar	cubic yard	773	19
	Roofing			
	Composition Roofing	cubic yard	731	18
	Other Asphalt Roofing	cubic yard	731	18
	Other Aggregates	cubic yard	860	18
	Wood			
	Clean Dimensional Lumber	cubic yard	169	18
	Clean Engineered Wood	cubic yard	268	18
	Other Recyclable Wood	cubic yard	169	18
	Painted/Stained Wood	cubic yard	169	18
	Treated Wood	cubic yard	169	18
	Gypsum Board			
	Clean Gypsum Board	cubic yard	467	18
	Painted/Demolition Gypsum	cubic yard	467	18
	Aggregate			
	Large Rock	cubic yard	999	18
	Small Rock/Gravel	cubic yard	999	18
	Dirt and Sand	cubic yard	929	18
	Remainder/Composite Construction and Demolition	cubic yard	417	18
	Construction & Demolition Bulk	cubic yard	484	20
	Metal			
	Major Appliances	cubic yard	145	18
	Other Ferrous	cubic yard	225	18
	Other Non-Ferrous	cubic yard	225	18
	Remainder/Composite Metal (avg of metals, without used oil filters)	cubic yard	143	18
	HVAC Ducting	cubic yard	47	18

1	Oregon Department of Environmental Quality. 2007 Oregon Material Recovery and Waste Generation Rates Report September 2008 08-LQ-092. Attachment B: Measurement Standards and Reporting Guidelines 07-LQ-134. http://www.deq.state.or.us/lq/pubs/docs/sw/MRAttachmentB.pdf
2	Department of Ecology, State of Washington. Coordinated Prevention Grant Conversion Sheet. March, 2014. www.ecy.wa.gov/pubs/1107016.pdf
3	Factor developed using lead per battery data from Battery Council International. Recycling Rates 2009 to 2013. April 2014. http://c.ymcdn.com/sites/batterycouncil.org/resource/resmgr/BCI_Recycling_Rate_Study_200.pdf applied to battery composition data from Sulllivan, JL and Gaines, L. 2010. A Review of Battery Life Cycle Analysis: State of Knowledge and Critical Needs. October 2010. Center for Transportation Research, Energy Systems Division, Argonne National Laboratory ANL/ESD/10-7.
4	Keep America Beautiful. Volume-to-Weight Recycling and Trash Conversion Factors Report. December 2013.
5	Rubber Manufacturers Association (RMA). 2013 U.S. Scrap Tire Management Summary. November 2014. http://www.rma.org/download/scrap-tires/market-reports/US_STMarket2013.pdf
6	California Integrated Waste Management Board. Targeted Statewide Waste Characterization Study: Detailed Characterization of Construction and Demolition Waste. June 2006. http://www.calrecycle.ca.gov/publications/Documents/Disposal%5C34106007.pdf
	Brown Goods: larger, non-portable electronic goods that have some circuitry. Examples include microwaves, stereos, VCRs, DVD players, radios, audio/visual equipment, and non-CRT televisions (such as LCD televisions).
	Computer-related Electronics: electronics with large circuitry that is computer-related. Examples include processors, mice, keyboards, laptops, disk drives, printers, modems, and fax machines.
	Other Small Consumer Electronics: portable non-computer-related electronics with large circuitry. Examples include personal digital assistants (PDAs), cell phones, phone systems, phone answering machines, computer games and other electronic toys, portable CD players, camcorders, and digital cameras.
7	Keep America Beautiful, Recycle-Bowl Competition. Accessed February 2015. http://recycle-bowl.org/wp-content/uploads/Recycle-Bowl-Estimating-Data-Fact-Sheet.pdf
8	Great Forest. Volume to Weight Conversion Ratios for Commercial Office Waste in New York City. January 2013. Primary data; Commingled; large commercial properties (500,000 sq. ft – 1m sq. ft) in the New York metropolitan area. http://www.greatforest.com/files/FileUpload/files/Great%20Forest%20-%20Waste%20Conversion%20Paper%20-
9	US EPA Electronics Waste Management in the United States Through 2009 . May 2011.
10	WasteCare Corporation. Some Typical Loose and Baled Weights of Various Materials. Accessed April 2015. http://www.wastecare.com/Products-Services/Balers/aboutbalers.htm.
11	The Aluminum Association. U.S. Aluminum Beverage Can Recycling. http://www.aluminum.org/sites/default/files/section_images/UBCRecyclingRate2013.pdf
12	The Association of Postconsumer Plastic Recyclers (APR). Model Bale Specifications. http://www.plasticsrecycling.org
13	Caldwell, Maggie. Recycling Plastic Film and Shrink Wrap. May 16, 2014. http://www.federalinternational.com/blog/recy
14	Caterpillar Performance Handbook. 40th Edition. January 2010.
15	Minnesota Pollution Control Agency. Data provided by professional composter. 2015. Source separated organics - food scraps, non-recyclable paper (paper plates/towels/etc) and compostable plastics.
16	Minnesota Department of Administration 2015 hauler records (excludes organics).
17	Minnesota Pollution Control Agency. 2013 MPCA MSW Landfill Annual Report Data.
18	California Integrated Waste Management Board. Targeted Statewide Waste Characterization Study: Detailed Characterization of Construction and Demolition Waste. June 2006
19	Tellus scaled down by factor from Florida C&D study -- Converting C&D Debris from Volume to Weight: A Fact Sheet for C&D Debris Facility Operators, University of Florida, 2000.
20	Florida Dept of Environmental Protection http://www.dep.state.fl.us/waste/categories/recycling/cd/canddmain.htm
21	CalRecycle. 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California. September 10, 2015. http://www.calrecycle.ca.gov/Publications/Documents/1543/20151543.pdf Organics - putrescible material hauled by a contracted third party to a permitted facility mainly engaged in producing compost or mulch, or in anaerobic digestion of organics. Minor mechanical separation of contaminants or recyclable materials may occur at the facility prior to composting or digestion.
22	Goldstein, Nora. "Food Scraps Composting Laboratory". *BioCycle.* January 2013, Vol. 54, No. 1, p. 33. https: //www .biocycle.net/2013/01/22/food-scraps-composting-laboratory/
23	U.S. EPA. Standard Volume-to-Weight Conversion Factors. Last updated: February 28, 2006. https://www.epa.gov/smm/metrics-waste-reduction
24	National Center for Electronics Recycling (NCER). http://www.electronicsrecycling.org/ Mixed monitors and TVs: total pounds collected divided by total units collected.

Appendix 8: ETAP Table Cards

Group: PLASTIC

1. Bottles & Containers

Description: Plastic bottles and jugs of any size or resin. Examples include plastic bottles and jugs for soda, water, sports drinks, juice, tea, milk, wine coolers, and liquor bottles. Includes bottles labelled "compostable" or "bio-based."

Group: PLASTIC

2. Straws & Stirrers

Description: Plastic drinking straws and stirrers. Includes "compostable" or "bio-based."

Group: PLASTIC

3. Bottle Caps & Tabs

Description: Loose plastic bottle caps, plastic pull tabs, lids, and seals made of plastic, used in the packaging/sealing of beverage containers. Does not include bottle caps that are still on a beverage bottle.

Group: PLASTIC

4. Beverage Rings

Description: Beverage packaging rings to hold soft drinks or beer cans. Examples: 4-pack, 6-pack, 8-pack, & 12-pack beverage rings commonly used for canned or bottled beverages.

Group: PLASTIC

5. Food Wrappers & Snack Bags

Description: Wrappings or bags used to package food, such as wrappers for candy and gum, snack bags, chip bags, zipper-closeable bags, condiment packets, and produce bags. Includes wrappers labelled "compostable" or "bio-based." Does not include pouches (see PLASTIC: Food & Drink Pouches).

Group: PLASTIC

6. Food & Drink Pouches

Description: Plastic pouches made of thicker, multi-layer flexible material. May have a flat bottom so that package would stand up on its own, but not always. Material is thicker than potato chip bags. Examples include plastic coffee packages; juice pouches; baby food pouches with or without plastic screw top; soup pouches; salad dressing pouches; wine pouches; and backpacking meals in pouches.

Group: PLASTIC

7. Cups

Description: Includes plastic cups of all sizes other than foam.

Group: PLASTIC

8. Lids

Description: Plastic lids from plastic tubs and containers, such as cottage cheese, yogurt, butter, etc.

Group: PLASTIC

9. Utensils

Description: Plastic forks, knives, and spoons.

Group: PLASTIC

10. Plates & Bowls

Description: Plastic plates and bowls of all sizes other than foam.

Group: PLASTIC

11. Clamshells

Description: Hinged plastic (not foam) take-out containers of any size that open like the shell of a clam.

Group: PLASTIC

12. Grocery & Retail Bags

Description: Plastic shopping bags used to contain merchandise, given out by the store or restaurant with the purchase (including dry cleaning bags). This type does not include full bags of trash (see "OTHER: Whole Bags of Mixed Trash"). Includes bags labelled "compostable" or "bio-based."

Group: PLASTIC

13. Small Fragments (1 tally = 1 cup)

*Description: Film or hard plastic pieces of unknown origin less than 2.5 cm in their longest dimension. If less than 1 cup of fragments are found record one tally *If you want to collect and count microplastic pieces (<5mm in size) using this protocol, we suggest that you use a write-in space.*

Group: PLASTIC

14. Other Plastic

Description: Plastic that cannot be put in any other category. Includes film/flexible plastic other than grocery and retail bags (see PLASTIC: Grocery & Retail Bags) and balloons (see "OTHER: Balloons"). Includes durable plastic products other than toys and games (see "OTHER: Recreation"), and furniture (see "OTHER: Furniture & Carpet"). Examples: salad dressing bottles, condiment bottles, butter, yogurt, and cottage cheese tubs, buckets, laundry baskets, totes, garbage cans, flower pots, and plastic pipes; and film products such as agricultural film (films used in various farming and growing applications, such as silage greenhouse films, mulch films, and wrap for hay bales), plastic sheeting used as drop cloths, plastic mailing pouches, shrink-wrap, and bubble wrap. Includes items labelled "compostable" or "bio-based." Does not include any personal care products or bottles (see "OTHER: Toiletries/personal hygiene").

Group: FOAM

15. Cups

Description: Foam (also known as expanded polystyrene or styrofoam) cups of all sizes.

Group: FOAM

16. Plates & Bowls

Description: Foam Plates and Bowls of all sizes.

Group: FOAM

17. Clamshells

Description: Hinged foam take-out containers of any size that open like the shell of a clam.

Group: FOAM

18. Small Fragments & Other Foam (1 tally = 1 cup of small pieces)

Description: All other foam items, including foam ice chests, foam packing peanuts and other product packing foam, and foam used for home food packaging such as foam meat trays and egg

Group: PAPER

19. Cardboard

Description: Cardboard has a center wavy layer sandwiched between two outer layers. Examples include entire cardboard containers, such as shipping and moving boxes, computer packaging cartons, and sheets and pieces of boxes and cartons. This category does not include chipboard boxes such as cereal boxes or tissue boxes (see "PAPER: Other Paper").

Group: PAPER

20. Bags

Description: Paper Bags made from kraft paper. Paper may be brown (unbleached) or white (bleached). Examples include paper grocery bags, fast food bags, and department store bags.

Group: PAPER

21. Newspaper, Junk Mail, Receipts & Office Paper

Description: Paper used for newspapers, receipts, white ledger and other office paper, magazines and catalogs, glossy inserts, stapled college class schedules, manila envelopes, junk mail, carbonless forms, catalogs, and brochures. Does not include hardback or paperback books or telephone directories (see "PAPER: Other Paper").

Group: PAPER

22. Cups

Description: Paper cups, often lined with either plastic or wax, such as to-go coffee cups.

Group: PAPER

23. Beverage & Food Cartons

Description: Gable-top containers such as milk cartons and orange juice cartons, and aseptic containers used for products like soy milk, coconut water, or soup. These are often paper containers lined with plastic.

Group: PAPER

24. Other Paper

Description: Items made mostly of paper that do not fit into any of the above types. Examples include tissue boxes, paperboard boxes for software, self-adhesive notes, hard cover and paperback books, telephone directories, sepia, carbon paper, photographs, sheets of paper, stick-on labels, and paper mailing envelopes lined with bubble wrap or plastic, plates, bowls, paper straws, paper and waxed paper wrappings, wooden stirrers, cup and beverage holders, napkins or paper towels, and pizza boxes, cereal boxes, cardboard egg cartons, ice cream cartons and other frozen food boxes, and boxes used to hold 6 or more individual beverages.

Group: GLASS

25. Bottles, Jars & Containers

Description: Glass bottles, jars, or containers of any size or color designed to contain beverages such as beer, wine, wine coolers, liquor, soda, water, tea, juice, sports & health drinks or contains food such as, pickles, olives, mayonnaise, jam, and sauces.

Group: GLASS

26. Small Fragments & Other Glass (1 tally = 1 cup)

Description: Glass products that do not fit into another category, or that are not distinguishable by type of product. Fragments less than 2.5 cm in their longest dimension.

Group: METAL

27. Bottles, Cans & Containers

Description: Metal bottles, cans or containers of any size designed to contain beverages such as beer, juice or soda; also includes canned food and pet food.

Group: METAL

28. Bottle Caps & Tabs

Description: Pull tabs, bottle caps, lids, and seals made of metal and used in the packaging/sealing of metal beverage containers.

Group: METAL

29. Other Metal

Description: Products made entirely from metal or predominantly metal products that do not fit into any other category. Includes items such as metal clothes hangers, metal pipes, aluminum tin foil, and small appliances comprised mainly of metal such as toasters and hair dryers. Does not include electronics such as microwaves (see "OTHER: Batteries & Electronics"), or major appliances such as refrigerators (see "OTHER: Appliances").

Group: FISHING

30. Hooks, Lures & Floats

Description: Includes fishing hooks, lures, buoys, & floats.

Group: FISHING

31. Traps & Trap Parts

Description: Traps used to catch crabs, lobster, fish, or other organisms.

Group: FISHING

32. Nets & Ropes (1 tally = 1 foot)

Description: Nets and ropes. 1 tally = 1 continuous foot. Example: 5 continuous feet of rope equals 5 tallies.

Group: FISHING

33. Fishing Line (1 tally = 1 foot)

Description: 1 tally = 1 continuous foot of fishing line.

Group: FISHING

34. Tangled Fishing Line Bundles (1 tally = 1 square foot)

Description: Tangled bundle of fishing line larger than 1 square foot in size.

Group: FISHING

35. Other Fishing

Description: Fishing related items that do not fit into other fishing categories.

Group: AUTOMOTIVE

36. Tires

Description: Includes tires from all types of automotive vehicles and all sizes.

Group: AUTOMOTIVE

37. Other Automotive

Description: All motorized vehicle related items other than tires, including hubcaps, tailpipes, batteries used for motorized vehicles, motor oil and other vehicle fluids, rearview mirrors, lights, or window glass known to be from an automobile or other motorized vehicle, and whole auto-bodies, trucks, trailers, and truck cabs.

Group: SMOKING

38. Cigarettes & Cannabis

Description: Discarded ends, pieces or filters of cigarettes, cigars and cannabis products, unsmoked items, chewing tobacco, pipe tobacco, matches, matchbooks and packaging for tobacco and cannabis products such as paper boxes, plastic or foil wrappings, or other materials used to package cigarettes, cigars, cannabis, chewing or pipe tobacco, including individual cigarette packages and unused cigarette papers. Spent smokeless tobacco is included.

Group: SMOKING

43. E-cigarettes & Vaping

Description: Includes all e-cigarette and vaping items.

Group: SMOKING

39. Lighters

Description: Includes lighters of all types and sizes.

Group: OTHER

40. Chemical, Paint & Other Hazardous

Description: Examples include latex paint, oil-based paint, spray paint, stains and varnishes, pesticides, caustic cleaners, fluorescent and LED bulbs/lamps, and mercury-containing items such as thermostats and thermometers. This category includes empty containers of these materials. This category does not include motor oil and other vehicle fluids (see "Automotive: Others").

Group: OTHER

41. Batteries & Electronics

Description: Electronics and e-related materials such as cell phones, portable electronic book readers, tablets, laptop computers, computer games and other electronic toys, CD players, camcorders, digital cameras, cell phone and other device chargers, microwaves, stereos, VCRs, DVD players, radios, audio/visual equipment, keyboards, printers, televisions, computers and computer monitors, tapes, CDs, DVDs and batteries of all types, including lithium batteries.

Group: OTHER

42. Building Materials

Description: Includes brick, concrete, gypsum board, fiberglass insulation, roofing waste, asphalt, lumber, plywood, pallets, nails, screws, toilets, sinks, carpet, and other building and infrastructure related materials. Other ceramic can be included here as well, such as ceramic dishware and garden pottery. (For light bulbs/lamps, see "OTHER: Chemical, Paint & Other Hazardous.")

Group: OTHER

44. Furniture & Carpet

Description: All large and hard-to-handle items not defined elsewhere, including furniture, mattresses, carpet, lawn furniture, and box springs.

Group: OTHER

45. Appliances

Description: Includes large appliances such as refrigerators, dishwashers, stoves, and dryers. This category does not include electronics such as stereos or microwaves (see OTHER: Batteries & Electronics").

Group: OTHER

46. Medical Waste, Sharps, & Biohazardous

Description: Medical waste includes needles, syringes, I.V. tubing, medications, ointments, creams, nutritional supplements such as vitamins, etc. used to heal or supplement the nutrition of people or animals. Also includes medicine and medical equipment packaging.

Group: OTHER

47. Textiles, Clothing & Shoes

Description: Items made of thread, yarn, fabric, cloth, or rubber. Examples include clothes, fabric trimmings, draperies, leather belts, flip flops, and bathroom rugs. This type does not include furniture, carpet, or mattresses (see "OTHER: Furniture & Carpet").

Group: OTHER

48. Toiletries/ Personal Hygiene

Description: Bottles and containers of health care products such as cosmetics, shampoo, hair care styling products, lotion, personal hygiene products such as toothbrushes and toothpaste, pads and tampons, diapers, make-up sponges, gloves, and condoms.

Group: OTHER

49. Balloons

Description: Balloons made of all types of materials.

Group: OTHER

50. Toys, Sports & Recreational Equipment

Description: Includes balls of all types, frisbees, sporting equipment of all types, other toys of all shapes and sizes, non-automotive bicycles, scooters, and tricycles.

Group: OTHER

51. Whole Bags of Mixed Trash

Description: Whole, closed bags of trash of any size. We do not ask you to open and sort the waste.

Group: OTHER – [Write in]

Description: [Use this category to track any other specific item included in a broader category above or otherwise not included here, if you desire].

OTHER – [Write in]

Description: [Use this category to track any other specific item included in a broader category above or otherwise not included here, if you desire].

OTHER – [Write in]

Description: [Use this category to track any other specific item included in a broader category above or otherwise not included here, if you desire].

OTHER – [Write in]

Description: [Use this category to track any other specific item included in a broader category above or otherwise not included here, if you desire].

OTHER – [Write in]

Description: [Use this category to track any other specific item included in a broader category above or otherwise not included here, if you desire].

OTHER – [Write in]

Description: [Use this category to track any other specific item included in a broader category above or otherwise not included here, if you desire].

OTHER – [Write in]

Description: [Use this category to track any other specific item included in a broader category above or otherwise not included here, if you desire].

OTHER – [Write in]

Description: [Use this category to track any other specific item included in a broader category above or otherwise not included here, if you desire].

OTHER – [Write in]

Description: [Use this category to track any other specific item included in a broader category above or otherwise not included here, if you desire].