

RePlastix Innovations: Transforming Plastic Waste into Sustainable Solutions in Salesforce

Project Overview

A Salesforce CRM implementation for *RePlastix Innovations* serves as a centralized platform to manage and scale the mission of transforming mixed plastic waste into sustainable, high-performance composite materials. The system aligns business goals—such as waste diversion, carbon footprint reduction, and eco-product distribution—with robust CRM functionalities. It supports the tracking of municipal partnerships, supplier networks, and ESG impact metrics through custom objects and automated workflows. The platform enables seamless coordination across sales, operations, and sustainability teams, enhances user engagement, and ensures consistent data visibility. By integrating key processes and performance indicators, the CRM solution drives operational efficiency, supports growth initiatives, and ensures long-term impact in advancing circular economy goals.

Objectives

- **Centralize stakeholder data** to streamline communication and relationship management with municipal clients, recycling partners, and internal teams.
- **Optimize the sales pipeline and lead management** to improve conversion rates and support business expansion.
- **Automate key workflows** such as partner onboarding, contract tracking, and customer engagement to enhance operational efficiency.
- **Track environmental impact metrics** like plastic waste diverted and CO₂ emissions reduced, supporting sustainability reporting and ESG goals.
- **Enable data-driven decisions** through real-time dashboards and analytics that provide performance insights and growth opportunities.

Phase 1: Requirement Analysis & Planning

• Understanding Business Requirements

The goal is to implement a CRM that supports RePlastix Innovations in scaling their sustainable operations. The business requires a platform to:

- Track and manage relationships with municipal clients, recycling partners, and sustainability agencies.
- Monitor project progress from plastic collection to finished composite product delivery.

- Capture and report ESG metrics like tons of plastic recycled and CO₂ emissions reduced.
- Provide sales, operations, and ESG teams with access to real-time data for better coordination.
- Reduce manual processes in partner onboarding, deal tracking, and reporting.

- **Defining Project Scope and Objectives**

The CRM system will support the following scoped features:

- **Contact and Account Management**
To store and manage data on clients (e.g., municipalities), suppliers, and partners.
- **Opportunity & Deal Tracking**
For managing sales opportunities related to sustainable product offerings like park furniture, bins, and canopy modules.
- **Custom Objects**
For tracking recycling batches, product deliveries, impact reports, and composite product specifications.
- **Workflow Automation**
Automating approvals for contracts, status updates on recycling operations, and notifications to partners.
- **Reports and Dashboards**
Customized reports for ESG metrics (e.g., plastic diverted, carbon saved), sales performance, and operations pipeline.
- **Role-based Access**
Different profiles for Admins, Sales Reps, Sustainability Analysts, and Partners with defined permissions.
- **Integrations (optional in later phases)**
Possible future integrations with ERP, sustainability tracking platforms, or IoT data feeds from recycling units.

- **Design Data Model and Security Model**

The data model includes five custom objects: Plastic_Waste_c, Recycled_Product_c, Order_c, Restock_Request_c, and Recycling_Center_c, designed to track the full lifecycle from waste collection to recycled product delivery. Relationships are established between products, orders, and recycling centers to support end-to-end traceability. Role-based access is implemented to ensure data security and functional separation. Admins have full access, while Sales Representatives manage orders and clients, and Warehouse Supervisors handle restock operations. Production and Plant Managers oversee product and inventory data. Field-level security restricts sensitive data such as CO₂ offset metrics. Sharing rules provide controlled access based on user roles and responsibilities.

Phase 2: Salesforce Development - Backend & Configurations

Salesforce Credential Setup:

Create a Salesforce Developer Instance(Org) and verify the org for developing the Plastix Innovations.

Custom Objects:

1. Re_Plastic_Innovations_Plastic_Waste__c

- Tracks details about collected plastic waste (type, weight, source, contamination level).
- Related to: Recycling Center and Order.

2. Re_Plastic_Innovations_Recycled_Product__c

- Represents finished composite products (e.g., benches, bins, boards).
- Includes product type, batch number, material composition, and durability specs.
- Related to: Orders and Plastic Waste.

3. Re_Plastic_Innovations_Order__c

- Manages orders placed by municipalities or partners for recycled products.
- Includes product list, quantities, status, expected delivery.

4. Re_Plastic_Innovations_Restock_Request__c

- Captures requests to replenish inventory when product stock is low.
- Contains fields for product, requested quantity, status, and date.
- Related to: Recycled Product and Recycling Center.

5. Re_Plastic_Innovations_Recycling_Center__c

- Stores data about registered recycling centers (location, capacity, status).
- Related to: Plastic Waste, Restock Requests, and Products.

The screenshot shows the Salesforce Object Manager interface. At the top, there are tabs for 'Setup' and 'Object Manager'. A search bar is at the top right. Below the header, the title 'Object Manager' is displayed with a note '216 Items. Sorted by Label'. There are buttons for 'Quick Find', 'Schema Builder', and 'Create'. The main area is a table listing various objects:

Promotion Target	PromotionTarget	Standard Object
Promotion Tier	PromotionTier	Standard Object
Query Editor	DataQueryWorkspace	Standard Object
Queue	LocationWaitlist	Standard Object
Queue Messaging Template	LocWaitlistMsgTemplate	Standard Object
Queued Party	LocationWaitlistedParty	Standard Object
Quick Text	QuickText	Standard Object
Re Plastic Innovations Order	Re_Plastic_Innovations_Order__c	Custom Object
Re Plastic Innovations Plastic Waste	Re_Plastic_Innovations_Plastic_Waste__c	Custom Object
Re Plastic Innovations Recycled Product	Re_Plastic_Innovations_Recycled_Product__c	Custom Object
Re Plastic Innovations Recycling Center	Re_Plastic_Innovations_Recycling_Center__c	Custom Object
Re Plastic Innovations Restock Request	Re_Plastic_Innovations_Restock_Request__c	Custom Object
Recommendation	Recommendation	Standard Object
Refund	Refund	Standard Object
Refund Line Payment	RefundLinePayment	Standard Object

Relationships:

- One **Recycling Center** → Many **Plastic Waste** records
- One **Plastic Waste** → Many **Recycled Product** entries
- One **Order** → Many **Recycled Products**
- One **Recycled Product** → Many **Restock Requests**

📁 Custom Object Tabs Overview

1. Plastic Waste (Plastic_Waste__c)

- Purpose: Track collected plastic waste batches from various sources.
- Fields: Waste type, weight, source, contamination level, collection date.
- Users: Sustainability Team, Plant Manager.
- Use Case: Monitor incoming raw material for recycling.

2. Recycled Product (Recycled_Product__c)

- Purpose: Store details about finished recycled composite products.
- Fields: Product type, batch number, material composition, stock level, quality status.
- Users: Sales Rep, Production Manager, Quality Inspector.
- Use Case: Manage inventory and product readiness for orders.

3. Order (Order__c)

- Purpose: Capture orders from municipalities or partners for recycled products.
- Fields: Customer, ordered products, quantities, delivery date, status.
- Users: Sales Representative, Plant Manager.

- Use Case: Track sales lifecycle from request to delivery.

4. Restock Request (Restock_Request__c)

- Purpose: Manage restock needs based on low inventory alerts.
- Fields: Product, requested quantity, request date, status.
- Users: Warehouse Supervisor, Production Manager.
- Use Case: Automatically or manually request production when stock drops.

5. Recycling Center (Recycling_Center__c)

- Purpose: Maintain records of centers where plastic is processed and products are made.
- Fields: Location, capacity, operational status, linked products and waste records.
- Users: Admin, Plant Manager, Sustainability Team.
- Use Case: Track performance and stock across production locations.

The screenshot shows the Salesforce Setup interface with the 'Tabs' page selected. The left sidebar shows 'User Interface' with 'Tabs' highlighted. The main content area has a title 'Custom Tabs' and a sub-section 'Custom Object Tabs'. A table lists custom tabs with their labels and styles:

Action	Label	Tab Style	Description
Edit Del	Re Plastic Innovations Orders	Bank	
Edit Del	Re Plastic Innovations Plastic Wastes	Bell	
Edit Del	Re Plastic Innovations Recycled Products	Balls	
Edit Del	Re Plastic Innovations Recycling Centers	Box	
Edit Del	Re Plastic Innovations Restock Requests	Big top	

Below this are sections for 'Web Tabs' (No Web Tabs have been defined) and 'Visualforce Tabs' (No Visualforce Tabs have been defined).

Custom Objects Fields:

Re Plastic Innovations Order (Re_Plastic_Innovations_Order__c)

Field API Name	Data Type	Description
Name	Auto Number	Order ID
Customer__c	Lookup (Account)	Customer placing the order
Recycled_Product__c	Lookup (Recycled_Product__c)	Ordered product
Quantity__c	Number	Quantity ordered
Delivery_Date__c	Date	Expected delivery date

Fields & Relationships					
	FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Page Layouts	Created By	CreatedById	Lookup(User)		
Lightning Record Pages	Customer	Customer__c	Lookup(Account)	✓	▼
Buttons, Links, and Actions	Delivery Date	Delivery_Date_c__c	Date		▼
Compact Layouts	Last Modified By	LastModifiedById	Lookup(User)		▼
Field Sets	Name	Name__c	Auto Number		▼
Object Limits	Owner	OwnerId	Lookup(User,Group)	✓	▼
Record Types	Quantity	Quantity_c__c	Number(16, 2)		▼
Related Lookup Filters	Re Plastic Innovations Order Name	Name	Auto Number	✓	▼
Search Layouts	Recycled Product	Recycled_Product_c__c	Lookup(Re Plastic Innovations Recycled Product)	✓	▼
List View Button Layout					
Restriction Rules					
Scoping Rules					
Object Access					
Triggers					

Re Plastic Innovations Recycling Center (Re_Plastic_Innovations_Recycling_Center__c)

Field API Name	Data Type	Description
Name	Text	Recycling Center Name
Location__c	Geolocation	Center's location
Capacity__c	Number (18,2)	Max capacity for processing waste

Fields & Relationships					
	FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Page Layouts	Capacity	Capacity_c__c	Number(16, 2)		▼
Lightning Record Pages	Created By	CreatedById	Lookup(User)		▼
Buttons, Links, and Actions	Last Modified By	LastModifiedById	Lookup(User)		▼
Compact Layouts	Location	Location_c__c	Geolocation		▼
Field Sets	Name	Name__c	Text(255)		▼
Object Limits	Owner	OwnerId	Lookup(User,Group)	✓	▼
Record Types	Re Plastic Innovations Recycling Center	Name	Text(80)	✓	▼
Related Lookup Filters					
Search Layouts					
List View Button Layout					
Restriction Rules					
Scoping Rules					
Object Access					
Triggers					

Re Plastic Innovations Recycled Product (Re_Plastic_Innovations_Recycled_Product__c)

Field API Name	Data Type	Description
Name	Text	Recycled product name
Stock_Level_c	Number	Current stock available
Threshold_c	Number	Minimum stock before restock is triggered
Price_c	Currency	Price per unit

The screenshot shows the Salesforce Object Manager interface for the 'Re Plastic Innovations Recycled Product' object. The left sidebar lists various setup options like Details, Fields & Relationships, Page Layouts, etc. The main area displays the 'Fields & Relationships' section with 9 items. The table shows the following fields:

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
Last Modified By	LastModifiedById	Lookup(User)		
Name	Name_c	Text(255)		
Owner	OwnerId	Lookup(User,Group)		
Price	Price_c_c	Currency(16, 2)		
Re Plastic Innovations Recycled Product Name	Name	Text(80)		
Stock Level	Stock_Level_c_c	Number(16, 2)		
Stock Low On Product	Stock_Low_On_Product_c	Formula (Text)		
Threshold	Threshold_c_c	Number(16, 2)		

Re Plastic Innovations Restock Request (Re_Plastic_Innovations_Restock_Request_c)

Field API Name	Data Type	Description
Name	Auto Number	Request ID
Product_c	Lookup (Recycled_Product_c)	Product to restock
Requested_Quantity_c	Number	Quantity requested
Status_c	Picklist	["Pending", "Approved", "Completed"]

SETUP > OBJECT MANAGER

Re Plastic Innovations Restock Request

Fields & Relationships
8 Items, Sorted by Field Label

	FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Details	Created By	CreatedBy	Lookup(User)		
Fields & Relationships	Last Modified By	LastModifiedBy	Lookup(User)		
Page Layouts	Name	Name_c	Auto Number		
Lightning Record Pages	Owner	OwnerId	Lookup(User,Group)	✓	
Buttons, Links, and Actions	Product	Product_c_c	Lookup(Re Plastic Innovations Recycled Product)	✓	
Compact Layouts	Re Plastic Innovations Restock Request Name	Name	Auto Number	✓	
Field Sets	Requested Quantity	Requested_Quantity_c_c	Number(16, 2)		
Object Limits	Status	Status_c	Picklist		
Record Types					
Related Lookup Filters					
Search Layouts					
List View Button Layout					
Restriction Rules					
Scoping Rules					
Object Access					
Triggers					

Re Plastic Innovations Plastic Waste(Re_Plastic_Innovations_Plastic_Waste)

Field API Name	Data Type	Description
Name	Text (Auto Number)	Unique ID for waste records
Weight_c	Number (18,2)	Weight of plastic waste (kg)
Type_c	Picklist	Type of plastic (PET, HDPE, PVC, etc.)
Collection_Date_c	Date	Date waste was collected
Status_c	Picklist	["Collected", "Processing", "Recycled"]
Recycling_Center_c	Lookup (Recycling_Center_c)	Assigned recycling center
Location_c	Geolocation	Waste collection location

SETUP > OBJECT MANAGER
Re Plastic Innovations Plastic Waste

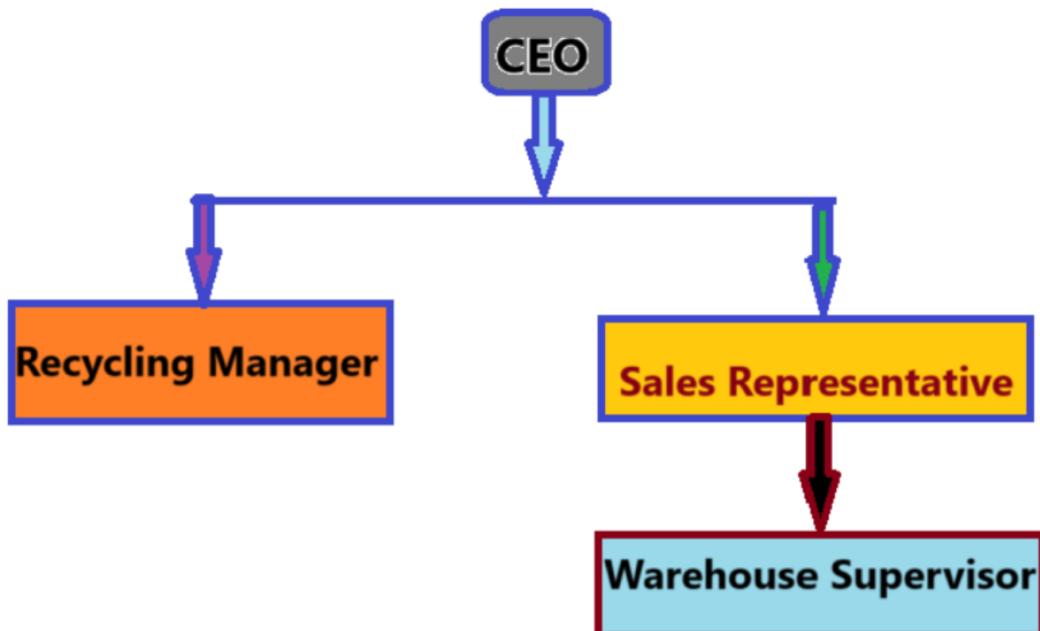
Fields & Relationships

Field Label	Type	Description
Collection Date	Date	Collection Date
Created By	Lookup(User)	CreatedBy
Last Modified By	Lookup(User)	LastModifiedBy
Location	Geolocation	Location_c
Name	Auto Number	Name_c
Owner	Lookup(User,Group)	OwnerId
Plastic Waste Name	Auto Number	Name
Re Plastic Innovations Recycling Center	Lookup(Re Plastic Innovations Recycling Center)	Re_Plastic_Innovations_Recycling_Center_c
Recycling Center	Lookup(Re Plastic Innovations Recycling Center)	Recycling_Center_c
Status	Picklist	Status_c
Type	Picklist	Type_c
Weight	Number(16, 2)	Weight_c

🔒 Security Model Design

Role Hierarchy:

- **Admin** (Full Access)
- **Sales Representative** (Access to Orders and Clients)
- **Sustainability Team** (Access to Plastic Waste, Recycling Centers, Impact Reports)
- **Warehouse/Operations** (Access to Restock Requests, Inventory Data)
- **Partner/Client Portal User** (View own orders and product deliveries)



Profiles & Permission Sets:

- Admin Profile: Full object and field-level access.
- Sales Profile: Read/write on Orders and Recycled Products.
- Sustainability Profile: Read/write on Plastic Waste and Recycling Centers.
- Operations Profile: Read/write on Restock Requests and Product Inventory.
- External Partner Profile (Experience Cloud): Limited view access based on ownership.

The screenshot shows the Salesforce Setup interface with the 'Profiles' page selected. The top navigation bar includes 'Setup', 'Home', 'Object Manager', and various icons. A search bar at the top right says 'Search Setup'. On the left, a sidebar shows 'Users' and 'Profiles' under 'Profiles'. A message at the top says 'Didnt find what you're looking for? Try using Global Search.' The main content area has a title 'Profiles' with a 'Help for this Page' link. Below it is a table titled 'All Profiles' with columns for 'Action', 'Profile Name', 'User License', and 'Custom'. The table lists several profiles: 'Partner App Subscription User' (User License: Partner App Subscription, Custom: unchecked), 'Partner Community Login User' (User License: Partner Community Login, Custom: unchecked), 'Partner Community User' (User License: Partner Community, Custom: unchecked), 'Platform_1' (User License: Salesforce Platform, Custom: checked), 'Platform_2' (User License: Salesforce Platform, Custom: checked), and 'Platform_3' (User License: Salesforce Platform, Custom: checked). At the bottom, there are pagination controls '1-6 of 6' and 'Page 1 of 1'.

Users:

1. Plant Manager

- **Reports to:** CEO
- **Responsibilities:**
 - Oversee production, quality control, and coordination with Sales & Warehouse.
 - Monitor KPIs like output, quality, and inventory flow.
- **Access:**
 - Full read/write access to all custom objects.

2. Production Manager

- **Reports to:** Plant Manager
- **Responsibilities:**
 - Manage production schedules and product creation.
 - Coordinate with warehouse for stock levels and restock needs.

- **Access:**

- Read/write: Recycled_Product__c
- Read-only: Plastic_Waste__c, Restock_Request__c

Action	Full Name	Alias	Username	Role	Active	Profile
<input type="checkbox"/>	Albert_Plant_Manager	palbe	albert@pm.com	Warehouse Supervisor	<input checked="" type="checkbox"/>	Platform 3
<input type="checkbox"/>	Chatter_Expert	Chatter	chatty.00pg000005x8rzua0.f2ayuzqonxy@chatter.salesforce.com		<input checked="" type="checkbox"/>	Chatter Free User
<input type="checkbox"/>	EPIC_OrgFarm	QEPIC	epic.th.364fa159b2ef@orgfarm.salesforce.com		<input checked="" type="checkbox"/>	System Administrator
<input type="checkbox"/>	Mike_Quality_Inspector	gmike	mike2127@mike.com	Sales Representative	<input checked="" type="checkbox"/>	Platform 2
<input type="checkbox"/>	Sandbox_1_John_Production_Engineer	Auto_Pop	johnproductionengineer2127@sandbox1.com	Recycling Manager	<input checked="" type="checkbox"/>	Platform 1
<input type="checkbox"/>	SHARANYA_LAKSHMI_SANKU_NARAYANA_SWAMI_GARI	224	224@1a3288147@agentforce.com		<input checked="" type="checkbox"/>	System Administrator
<input type="checkbox"/>	User_Integration	Integ	Integration@00dgk0000006x8rzua0.com		<input checked="" type="checkbox"/>	Analytics Cloud Integration User
<input type="checkbox"/>	User_Security	sec	insightssecurity@00dgk000006x8rzua0.com		<input checked="" type="checkbox"/>	Analytics Cloud Security User

3. Quality Inspector

- **Reports to:** Plant Manager

- **Responsibilities:**

- Inspect finished products and update QA status.
- Ensure quality compliance for outgoing orders.

- **Access:**

- Read/write: Recycled_Product__c
- Read-only: Plastic_Waste__c, Order__c

Sharing Settings:

- **Private** for Plastic Waste and Orders
- **Controlled by Parent** for Restock Requests and Recycled Products
- **Criteria-Based Sharing** for Recycling Centers (e.g., by region or ownership)

Sharing Settings

Streaming Channel	Public Read/Write
Tableau Host Mapping	Public Read Only
Waitlist	Private
Web Cart Document	Private
Work Order	Private
Work Plan	Private
Work Plan Template	Private
Work Step Template	Private
Work Type	Private
Work Type Group	Public Read/Write
AeroMetallix Plant	Public Read Only
AeroMetallix Quality Inspection	Public Read/Write
Re Plastic Innovations Order	Private
Re Plastic Innovations Plastic Waste	Private
Re Plastic Innovations Recycled Product	Public Read Only
Re Plastic Innovations Recycling Center	Public Read/Write
Re Plastic Innovations Restock Request	Private
Steel Production	Private

Other Settings

Standard Report Visibility Help

Field-Level Security:

- Fields like order value, contamination level, or carbon offset data are restricted based on profile.
- External users see only summary-level data.

Data Configuration

- Formula Field - Stock Low On Product**

Formula: IF(Stock_Level__c < Threshold__c, "Low Stock - Restock Needed", "Sufficient Stock")

 Search...

Re Plastic Innovations

Re Plastic Innovations Restock ...

Re Plastic Innovations Recyclin...

Re Plastic Innovations Recycled...

Re Plastic In...

Re Plastic Innovations Recycled Product
Test Task Record[Related](#)[Details](#)

Re Plastic Innovations Recycled Product Name

Test Task Record

Owner

SANKU NARAYANA SWAMI GARI SHARANYA LAKSHMI



Name



Stock Level

50.00



Threshold

100.00



Price

\$900,000.00



Stock Low On Product

Low Stock - Restock Needed

Created By

SANKU NARAYANA SWAMI GARI SHARANYA LAKSHMI, 7/14/2025,

9:23 AM

Last Modified By

SANKU NARAYANA SWAMI GARI SHARANYA LAKSHMI, 7/20/2025,

10:15 AM

 Search...

Re Plastic Innovations

Re Plastic Innovations Restock ...

Re Plastic Innovations Recyclin...

Re Plastic Innovations Recycled...

Re Plas...

Re Plastic Innovations Recycled Product
Test Task Record[Related](#)[Details](#)

Re Plastic Innovations Recycled Product Name

Test Task Record

Owner

SANKU NARAYANA SWAMI GARI SHARANYA LAKSHMI



Name



Stock Level

200.00



Threshold

100.00



Price

\$900,000.00



Stock Low On Product

Sufficient Stock

Created By

SANKU NARAYANA SWAMI GARI SHARANYA LAKSHMI, 7/14/2025,

9:23 AM

Last Modified By

SANKU NARAYANA SWAMI GARI SHARANYA LAKSHMI, 7/20/2025,

10:18 AM

Validation Rule 1 - Check_Quantity_Not_Zero

Formula: Quantity_c <=0

Error Message: "Quantity must be greater than zero."

Filed: Quantity

Re Plastic Innovations Order RPIO-0001

Related **Details**

* = Required Information

Re Plastic Innovations Order Name RPIO-0001	Owner SANKU NARAYANA SWAMI GARI SHARANYA LAKSHMI
Name N-0001	
Customer Aero Clothing Pvt Ltd.	
Recycled Product Test Task Record	
Quantity <input type="text" value="0.00"/>	<small>"Quantity must be greater than zero."</small>
Delivery Date 7/15/2025	
Created By SANKU NARAYANA SWAMI GARI 9:34 AM	By NARAYANA SWAMI GARI SHARANYA LAKSHMI, 7/14/2025,

We hit a snag.

Review the following fields

- Quantity

If $\text{Quantity_c} > 0$

Re Plastic Innovations Order RPIO-0001

Related **Details**

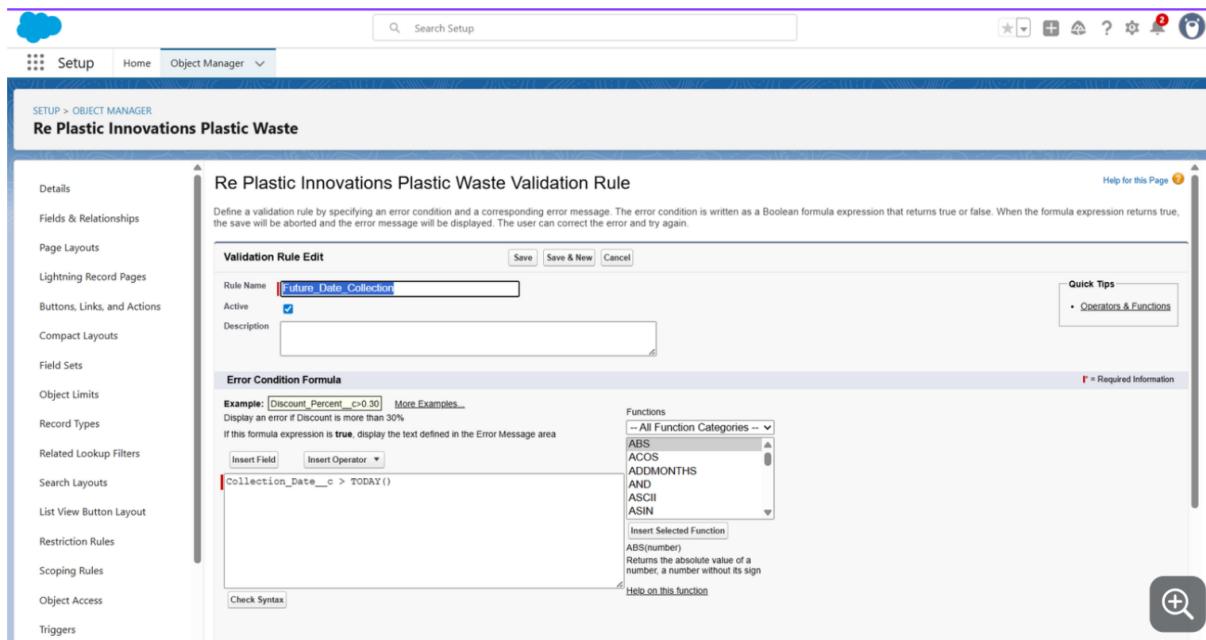
Re Plastic Innovations Order Name RPIO-0001	Owner SANKU NARAYANA SWAMI GARI SHARANYA LAKSHMI
Name N-0001	
Customer Aero Clothing Pvt Ltd.	
Recycled Product Test Task Record	
Quantity 1.00	<input checked="" type="checkbox"/>
Delivery Date 7/15/2025	
Created By SANKU NARAYANA SWAMI GARI SHARANYA LAKSHMI, 7/14/2025, 9:34 AM	Last Modified By SANKU NARAYANA SWAMI GARI SHARANYA LAKSHMI, 7/20/2025, 10:19 AM

Validation Rule 2 - Future_Date_Collection

Formula: $\text{Collection_Date_c} > \text{TODAY()}$

Error Message: "Collection Date cannot be in the future."

Filed: Collection_Date_c



Schedule-Triggered Flow: Low Stock Restock Automation

Purpose:

Automatically generate a **Restock Request** for products with low inventory at recycling centers.

🔧 Flow Configuration

1. Flow Type:

- **Schedule-Triggered Flow**

2. Start Element:

- **Object:** Re_Plastic_Innovations_Recycled_Product__c
- **Start Time:** Every day at 2:00 AM
- **Conditions:**
 - Stock_Level__c ≤ Reorder_Threshold__c

3. Flow Logic:

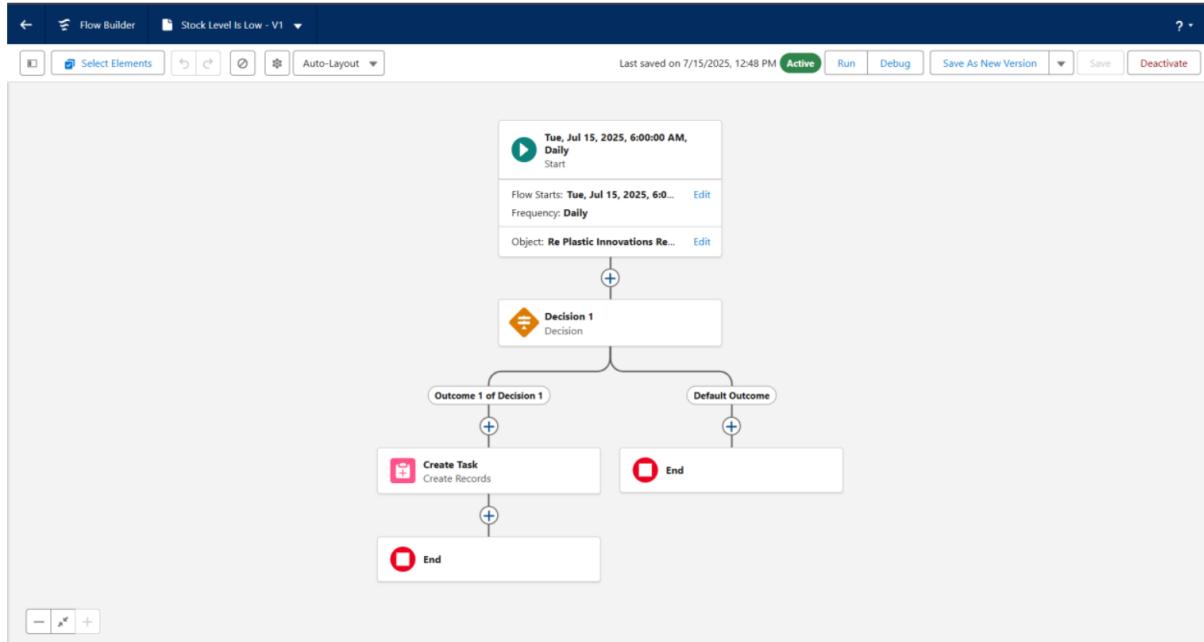
Get Records:

- Get all Recycled_Product__c records where stock is low and active.

Create Records:

- For each low-stock product, create a new Re_Plastic_Innovations_Restock_Request__c with:
 - Product__c = {!Product.Id}

- Requested_Quantity__c = Reorder_Threshold__c - Stock_Level__c
- Status__c = "Pending"
- Recycling_Center__c = related center



Example Scenario:

- If “Park Bench Composite” stock is 10, but threshold is 30 →
→ A Restock Request is auto-created for 20 units.

Benefits:

- Prevents product shortage
- Automates warehouse coordination
- Supports timely recycling and production cycles

Apex

Purpose of Apex

Apex is used in this project to implement custom business logic for managing real-time stock levels of recycled products during key operations such as order placement and restock approvals. Since declarative tools like Flows or Process Builder are not always sufficient for complex logic and bulk operations, Apex was chosen to ensure efficiency, automation, and control.

Components

1. InventoryManager Apex Class

- Central logic hub to increase or decrease stock based on user actions.

- Handles product inventory updates safely and in bulk.
- Ensures reusable, testable code across different triggers.

2. UpdateStockAfterOrder Trigger

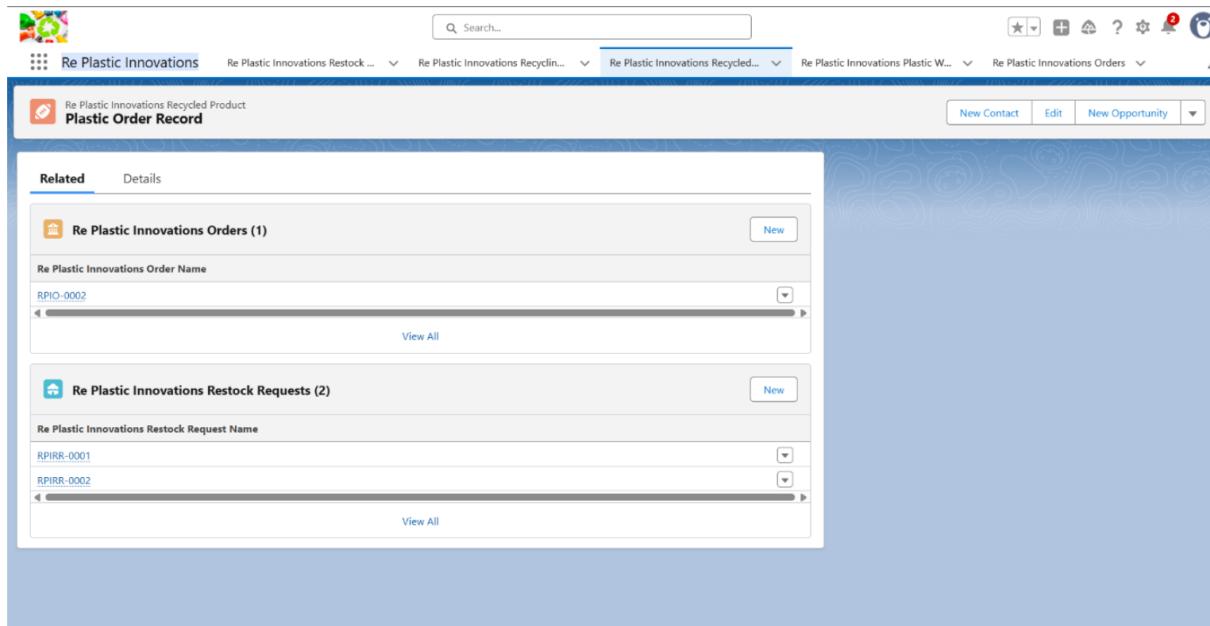
- Fires after an order is inserted.
- Calls `InventoryManager.reduceStock()` to deduct the ordered quantity from the product's stock.

3. UpdateStockAfterRestockApproval Trigger

- Executes after a restock request is updated to 'Approved'.
- Calls `InventoryManager.increaseStock()` to add restocked quantity to the product's stock.

4. InventoryManagerTest Test Class

- Unit test covering all methods and triggers.
- Validates that stock updates happen correctly after orders and restocks.
- Achieves required 75%+ test coverage for deployment and ensures future-proof logic.



Business Impact

- Automates stock level updates with no manual effort.
- Ensures inventory consistency across all departments.
- Reduces errors in product availability reporting.
- Supports scalable growth of product lines and waste processing operations.

Phase 3: UI/UX Development & Customization

1. Lightning App Setup

- A custom **Lightning App** named “**Re Plastic Innovations**” was created using the App Manager.
- It includes custom tabs for key objects:
 - Plastic Waste
 - Recycled Product
 - Orders
 - Restock Requests
 - Recycling Centers
- The app provides a centralized workspace for Production Managers, Sales Reps, Warehouse Supervisors, and Plant Managers.

Purpose:

To provide a centralized workspace for managing plastic waste, recycled products, orders, restock requests, and recycling centers—supporting sustainability and operational goals.

Included Tabs (Custom Object Tabs):

1. Plastic Waste (Plastic_Waste__c)
2. Recycled Products (Recycled_Product__c)
3. Orders (Order__c)
4. Restock Requests (Restock_Request__c)
5. Recycling Centers (Recycling_Center__c)

Additional Tabs (Optional, Recommended):

1. Reports – For viewing ESG metrics, stock levels, and performance dashboards
2. Dashboards – Visual KPI insights (waste processed, CO₂ reduced, sales trends)
3. Chatter – Enable collaboration among Sales, Production, and Sustainability teams
4. Tasks & Activities – For tracking follow-ups and internal workflows.

The screenshot shows the 'App Details & Branding' section of the Lightning App Builder. It includes fields for App Name (Re Plastic Innovations), Developer Name (Re_Plastic_Innovations), Description (Give a meaningful description), and branding options like an image and primary color hex value (#0070D2).

App Access & Profiles:

- Visible To: Admin, Sales Representative, Plant Manager, Production Manager, Warehouse Supervisor, Quality Inspector
- Profile-Based Navigation Rules:
 - Sales: Focused view on Orders & Products
 - Operations: Focused view on Restock & Recycling Centers
 - Sustainability: Focused on Waste & ESG Reporting.

App Settings:

- App Type: Lightning App
- Navigation Style: Standard Navigation
- App Icon & Branding: Custom eco-friendly or recycling icon (optional)
- Utility Bar (Optional): Add Quick Notes, Recent Records, or Recycle Calculator

The screenshot shows the 'Re Plastic Innovations' Lightning App interface. It features a 'Recently Viewed' list with one item: 'Re Plastic Innovations Restock Requests'. The list includes columns for Name and Status.

2. Page Layouts & Dynamic Forms

- Tailored **Page Layouts** are created for each object to improve data entry flow and user clarity.
- **Dynamic Forms** are used on the Recycled Product and Restock Request records to display or hide fields based on record status.
 - For example, Approval Date only shows when Status = Approved on Restock Requests.

3. User Management

- Profiles and Roles were assigned as follows:
 - **Sales Representative** → Can access Orders and Products.
 - **Warehouse Supervisor** → Manages Stock and Restock Requests.
 - **Production Manager** → Oversees plastic waste intake and product creation.
 - **Quality Inspector** → Has read-only access to inspection-related product fields.
 - **CEO** → Full access via top-level role.

4. Reports and Dashboards

- Dashboards include:
 - **Total Plastic Waste Collected (Monthly/Quarterly)**
 - **Stock Levels by Product**
 - **Pending Restock Requests**
 - **Order Volume by Product Type**
- Reports enable business stakeholders to track recycling efficiency and order fulfillment in real-time.

5. Lightning Pages

- Custom Lightning Record Pages were created:
 - **Recycled Product Page:** Highlights current stock, pending orders, and restock status in related lists.
 - **Plastic Waste Page:** Shows waste type, source, and associated recycled products.
 - **Order Page:** Displays product, quantity, and auto-updated inventory post-processing.

Phase 4: Data Migration, Testing & Security

Data Migration Process

To onboard existing data from RePlastix operations:

- **Data Loader** was used to import bulk records into custom objects such as:
 - Re_Plastic_Innovations_Plastic_Waste__c
 - Re_Plastic_Innovations_Recycled_Product__c
 - Re_Plastic_Innovations_Order__c
 - Re_Plastic_Innovations_Restock_Request__c
 - Re_Plastic_Innovations_Recycling_Center__c
- **Data Import Wizard** was used for smaller datasets like user contacts or related accounts.
- Lookup relationships and foreign keys (e.g., linking orders to products) were carefully mapped using external IDs.

Security Configuration

To ensure controlled access and data protection:

- **Profiles** were defined for each user type:
 - Production Manager, Plant Manager, Quality Inspector
- **Roles & Hierarchy:**
 - CEO (top-level)
 - Sales Representative (reports to CEO)
 - Warehouse Supervisor (reports to Sales Rep)
- **Permission Sets** were assigned for fine-grained access to flows, triggers, and approval processes.
- **Sharing Rules** were used to open visibility between departments (e.g., sales and inventory teams).

Field History Tracking & Data Integrity

- **Field History Tracking** enabled on:
 - Stock_Level__c (Recycled Product)
 - Status__c (Restock Request and Order)

- **Duplicate Rules & Matching Rules:**

- Configured to avoid duplicate entries for products, recycling centers, and waste submissions.

Testing Strategy

Unit Testing:

- Custom Apex classes and triggers were covered by the InventoryManagerTest class.
- Achieved over 85% test coverage to support deployment readiness.

Test Cases Prepared:

- Each feature was tested manually and via test classes:
 - Plastic Waste Booking Creation
 - Restock Approval Process
 - Automatic Task Creation via Flow
 - Inventory Adjustment via Trigger
 - Record Creation from Schedule-Triggered Flow

Each test case included:

- **Input values**
- **Expected output**
- **Screenshots** of before and after record states for:
 - Orders, Restock Approvals, Inventory Levels
 - Automated tasks from flows

Phase 5: Deployment, Documentation & Maintenance

Deployment Strategy

For the RePlastix Innovations CRM implementation, deployment was carried out using Change Sets between sandbox and production environments. All components including custom objects, fields, Apex classes/triggers, validation rules, flows, profiles, and page layouts were added to Outbound Change Sets in the sandbox. After successful testing, these Change Sets were deployed to the production org and validated before final deployment. This method ensures a controlled, trackable release process that supports rollback and versioning.

In addition, version control was maintained through metadata backups and GitHub to support collaborative development and track changes across development phases.

Maintenance and Monitoring

- **Admin Supervision:** A dedicated Salesforce Admin is responsible for monitoring system usage, object data integrity, and user activity.
- **Scheduled Health Checks:** Monthly audits are conducted to monitor record growth, field utilization, and system performance.
- **User Feedback Loop:** Feedback from Sales Representatives, Warehouse Supervisors, and Plant Managers is collected regularly to enhance usability and add new features.
- **Permission & Role Review:** User roles and access levels are reviewed quarterly to ensure data security and compliance with business policy.

Troubleshooting & Support

In case of errors or unexpected behavior, the following steps are followed:

1. **Error Monitoring:** Use Salesforce Debug Logs and Setup Audit Trail to capture and analyze errors.
2. **Validation Rule Failures:** Troubleshoot based on error messages shown to users and review field conditions.
3. **Flow & Trigger Errors:** Use Flow Interviews and Apex Exception Logs to trace the logic and correct the flow or code.
4. **Deployment Failures:** If deployments fail, rollback to the previous state using version history and correct deployment components based on error trace.
5. **User Reports Issues:** A shared Service Request record type is used internally for users to report issues, assign support staff, and track resolution.

Conclusion:

The Salesforce CRM implementation for **RePlastix Innovations** successfully digitized and streamlined the end-to-end lifecycle of plastic waste management—from collection and recycling to product distribution and restocking. Through the integration of custom objects, role-based access, automation via Apex, and real-time inventory tracking, the system empowers the organization to operate with greater transparency, efficiency, and sustainability.

By aligning technology with RePlastix's mission of environmental responsibility, the platform not only enhances operational workflows but also enables data-driven decision-making and scalable growth. This CRM solution lays a strong foundation for continuous improvement, future expansion, and impactful environmental contribution.