

# Optimise your collection routes and territories!



ECOBBOXCarto, a 100% WEB interface, is a specialised GIS software solution designed to optimise and streamline the waste collection process. This SaaS software aims to help companies and local authorities manage waste collection efficiently.

ECOBBOXCarto uses specific functionalities to improve efficiency and reduce environmental impact. Designed to be scalable, we make continually upgrade the product with new features at no extra cost.



## Your business challenges

Operational efficiency with limited budgetary resources

Regulatory compliance

Management of human and material resources

Taking into account ongoing changes to the way collection is organised

## Harness the power of our algorithm to maximise your profits

Cost reduction optimising operational circuit

~5€ per inhab./yr in average

Reducing carbon emissions

Improving user satisfaction

Optimising human and material resources

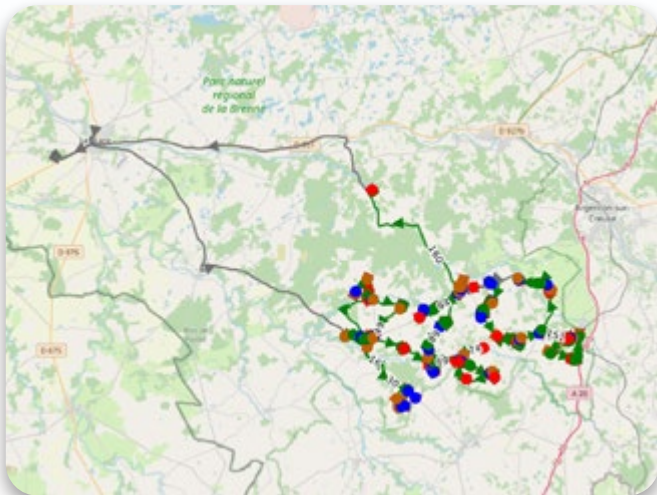
Reducing agent safety risks



Establishing reference circuits

Digitising circuits to comply with R437

Develop collection routes as and when required (adapting to demographic changes, modifying or developing the road network, balancing routes, incorporating new working practices, etc.).



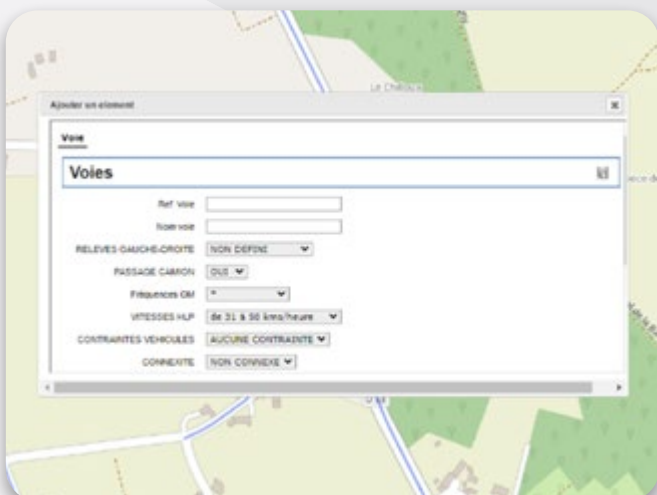
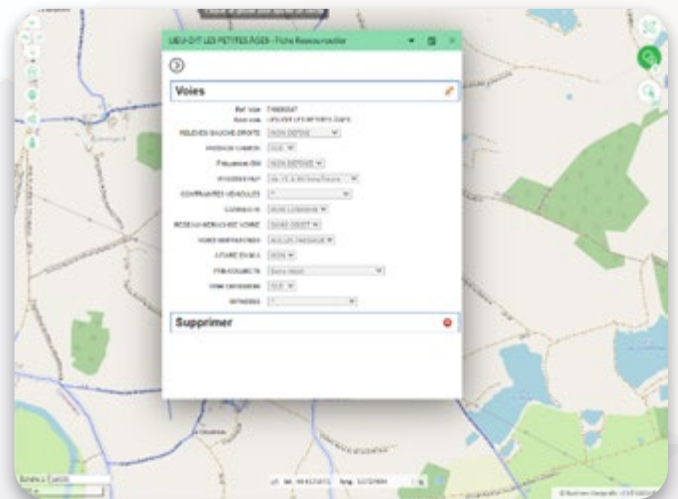
Reference collection circuit from GPS recording

1. Creation of a **manual** (by selecting sections of track) or **automated** reference collection circuit from :

- GPS recording of current circuits
- GIS data
- Databases on the number of bins, collection points (PAV) or address points from the National Address Database (BAN)

2. **Customised parameters** taken into account :

- Updating the **characteristics of roads** specific to the area: mapping attributes can be integrated on the road network (single or dual carriageway, one-way and three-way bans, specific time constraints in certain areas, blocked roads, etc.).
- Identification of **disposal sites and outlets**: creation and possible modification of disposal sites and outlets.
- Taking into account CNAMTS **recommendation 437** (no reversing, integration of single-lane collection routes, compliance with skip loading < 100%, black spots, etc.).



3. **Changes to collection routes** :

- Modification of the **road network** (road attributes, one-way management, roundabouts, creation of a new road, etc.).
- Correction of **collection routes**: manual editing of circuits, to add/remove collection routes, and modify the stages and sequence of routes to be collected.
- **HLP** correction: modification to the HLP circuit (e.g. U-turn on the road).

# Designing a new organisation

Carry out “design office” simulations: impact of a change in skip size, a change in tonnage, a change in the number of RRP, a change in frequency, etc.

Designing optimised routes

1. Calculation of new optimised collection routes based on the **road characteristics entered**.
2. Optimisation of collection routes based on **defined operating assumptions** (presentation rate, collection frequency, changes in working hours or parking/emptying locations, increase or decrease in tonnages, etc.).

Based on the initial resource (weight and time allocated to each section of track), the ECOBOXCarto tool can be used to calculate a new deposit taking into account the new validated operating assumptions.



The ECOBOXCarto tool can be used to calculate a new resource pool based on the initial resource pool (weight and time allocated to each section of track), taking into account the new operating assumptions that have been validated.

Once the desired balancing has been achieved and the collection sectors validated, the interface user launches the calculations for the optimised circuits.

Example of zoning: Proposed optimised collection sectors for the Communauté d'Agglomération de Pau (64)

# Having a business GIS



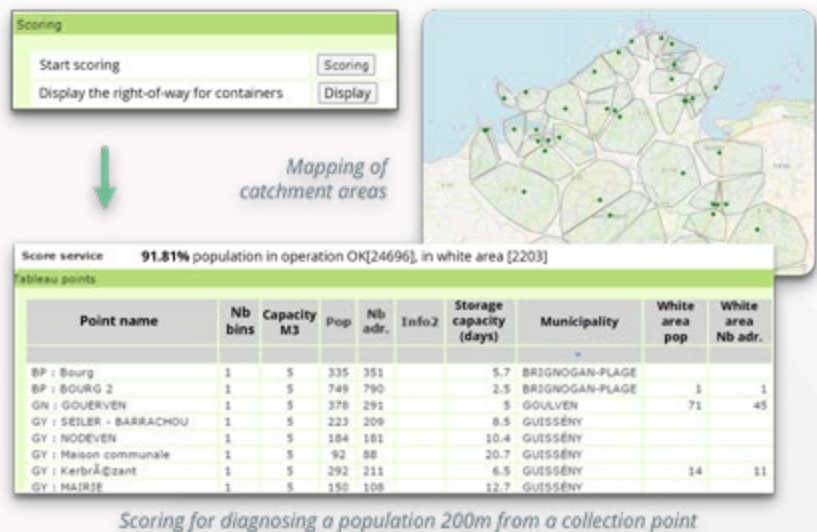
Laying out and mapping voluntary drop-off containers

Identify black spots and incorporate them into the planning future routes

## 1. Location of voluntary drop-off containers

Scoring is used to establish a diagnosis of the quality of service of your VMS installation. It is a percentage that measures the "population served" and the "white zone" population.

- Mapping of VIPs, with the production of a technical sheet for each point (type of equipment, volume, requirements)
- Diagnosis of the each PAV :
  - Calculating the catchment area
  - Calculation of the population served life/not served based on a defined distance,
  - Assessment of storage capacity
  - Calculating the optimum frequency
- Critical analysis and recommendations for existing collection equipment
- Sizing and calculation of VDP collection circuits (point collection).

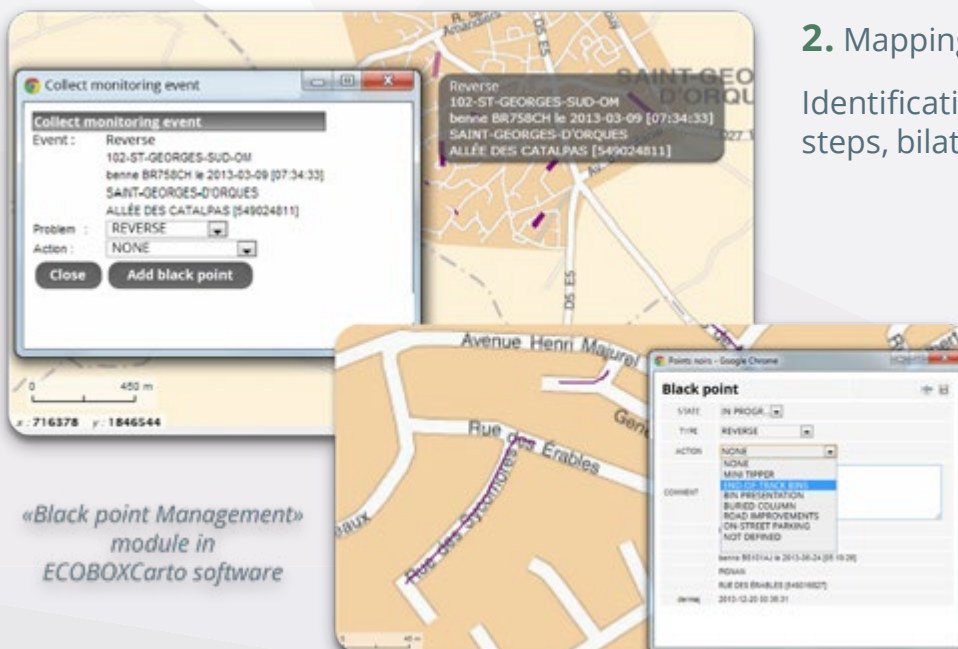


Scoring for diagnosing a population 200m from a collection point

## 2. Mapping black spots

Identification of collection bottlenecks (back steps, bilateral collection, narrow lanes, etc.)

- Mapping of black spots and automatic production of dashboards
- Characterisation of bilateral collection routes
- Consideration of resorption options in future circuits (R437 recommendations)



«Black point Management» module in ECOBOXCarto software

# Displaying and importing / exporting map layers



View planning and reference circuits

Produce roadmaps for collection operatives

Exporting circuits for integration into guidance systems

## 1. Dynamic display of reference circuits

Moment	Equipe	Lundi	Mardi	Mercredi	Jeudi	Vendredi
	E01	Point 1 Point 10 Point 11	Les Pommiers Point 12 Point 13	Chêne Point 14 Point 15	Chêne/Chêne Point 16 Point 17	St-Etienne Point 18 Point 19
	E02	Herbaud 10 Point 20 Point 21	Caude Point 22 Point 23	Herbaud/Chêne Point 24 Point 25	Chêne/Chêne 2 Point 26 Point 27	Chêne/Chêne Point 28 Point 29
	E03	Herbaud/Chêne Point 30 Point 31	Chêne 2 Point 32 Point 33	Chêne/Chêne Point 34 Point 35	Chêne/Chêne 3 Point 36 Point 37	Point 38 Point 39
	E04	Herbaud/Chêne Point 40 Point 41	Chêne Point 42 Point 43	Chêne/Chêne Point 44 Point 45	Chêne Point 46 Point 47	Point 48 Point 49
	E05	Herbaud Point 50 Point 51	La Grange 1 Point 52 Point 53	Chêne/Chêne Point 54 Point 55	Chêne/Chêne Point 56 Point 57	Point 58 Point 59
	E06	Point 60 Point 61	Chêne 2 Point 62 Point 63	Herbaud/Chêne Point 64 Point 65	Chêne/Chêne 2 Point 66 Point 67	Point 68 Point 69

## 2. Printable roadmaps showing all the collection phases and the corresponding streets, as well as the corresponding map sheets:

- Paper printouts of circuit plans.
- Paper printout of the "Road Book" route planner

							RUE DE LA VALSTIÈRE	33	00m05	47	HLP	↑					HERBAULT
							RUE DE LA VALSTIÈRE	27	00m21	161	HLP	↑					HERBAULT
4	05h26	00h28	14.48				RUE DES FRÈNES	2.3	02m01	76	COL BI	↑		39	0.25	0	HERBAULT
5	05h28	00h28	14.56				RUE DES FRÈNES	18.9	00m30	157	COL BI	↑		25	0.28	0	HERBAULT
							RUE DES FRÈNES	33	00m38	352	HLP	↑					HERBAULT
							D766	33	00m03	28	HLP	↑					HERBAULT
6	05h29	00h29	15.10				D766	29.9	00m15	125	COL D	↑		13	0.29	0	HERBAULT
7	05h29	00h30	15.22				D766	14.4	00m15	60	COL D	↑		13	0.3	0	HERBAULT
8	05h30	00h31	15.28				RUE DE GÂTINE	5.2	01m48	156	COL D	↑		49	0.35	0	HERBAULT
9	05h31	00h32	15.44				RUE DE GÂTINE	4	00m49	55	COL D	↑		26	0.38	0	HERBAULT
10	05h32	00h34	15.49				RUE DE GÂTINE	1.8	01m33	46	COL D	↑		35	0.42	0	HERBAULT
11	05h34	00h35	15.54				D766	1.8	01m41	49	COL D	↑		43	0.46	0	HERBAULT
12	05h35	00h36	15.59				PLACE DU 11 NOVEMBRE ET DU 8 MAI	6.7	00m15	28	COL D	↑		13	0.47	0	HERBAULT
13	05h36	00h36	15.61				RUE DE BEAUCE	9.2	00m15	22	COL D	↑		13	0.48	0	HERBAULT
14	05h36	00h36	15.64				RUE DE BEAUCE	12.4	00m15	52	COL D	↑		13	0.49	0	HERBAULT
15	05h36	00h36	15.69				RUE DE BEAUCE	13.3	00m15	55	COL D	↑		13	0.5	0	HERBAULT
16	05h36	00h37	15.74				RUE DE BEAUCE	25.6	00m15	107	COL D	↑		13	0.51	0	HERBAULT

## 3. Display and import/export map layers in ESRI, Shape, MapInfo MID-MIF, MapInfo TAB formats, in the projection of your choice.

Automatic export of routes from the ECOBOXCarto platform to the navigation consoles at the click of a button, whether for household waste collection (full guidance) or for voluntary drop-off points (point guidance).

## Functionality



Creating and modifying collection routes



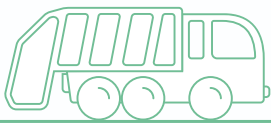
Designing a new organisation



Display, print and import / circuit export



Overhead and underground containers



## Our offer

**Optimise your waste collection operations with our complete solution. Take advantage of the following benefits:**

- SaaS\* software: Access ECOBOXCarto, an advanced platform for the efficient management of waste collection.
- Customised training: learn to master every aspect of the software thanks to tailor-made training provided by our experts.
- Support services: take advantage of our expertise for one-off studies, to help you solve specific waste collection challenges.

**Contact us today to find out more about how our offer can transform your waste collection management.**

Our software is designed to be both easily accessible to all users and extremely powerful to meet the needs of specialists. Expert consultants are available for personalised assistance if required.

## Our references



\*The ECOBOXCarto consultation interface is based on a "FULL WEB" GIS (Geographic Information System) accessible via an Internet browser 24 hours a day, 7 days a week. The application is secured by a login and password.