

Workshop: LitterWatch and recording litter data in Victoria



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University



Environment,
Land, Water
and Planning

Port Phillip Bay Environmental Management Plan 2017–2027



Port Phillip Bay Environmental Management Plan 2017–2027 Delivery Plan



December 2018

Reducing the impacts of plastics on the Victorian environment

Join the discussion



F – Findable

The first step is data being easy to find

A – Accessible

Once the data is found it needs to be accessible

I – Interoperable

Data usually needs to be integrated with other data and able to interoperate with applications for analysis, storage and processing.

R - Reusable

The ultimate goal is to optimise the re use of data, the data should be well described so that they can be replicated or combined in different settings.





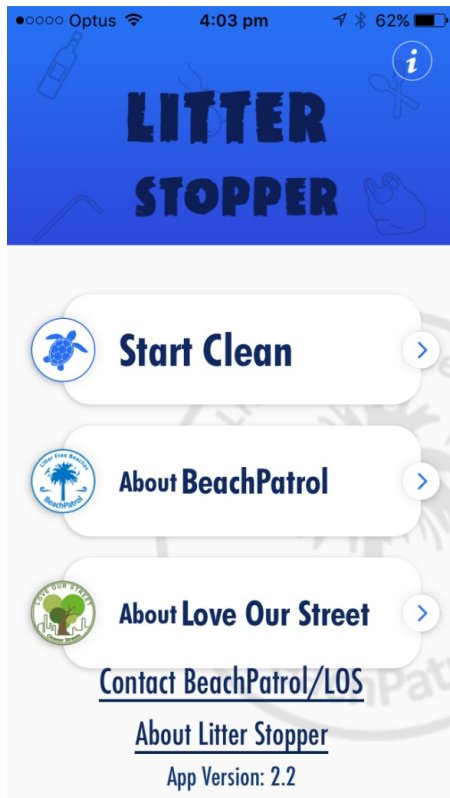
Litter Stopper



Recording plastic litter types to allow
us to put an end to it.



Getting Started







Group Selection

Optus 4:05 pm 61%

LITTER STOPPER


 **BeachPatrol** >

 **Love Our Street** >

Other Organisation/People?
Enter email address below
Appdata@beachpatrol.com.au
Next

Optus 4:05 pm 61%

LITTER STOPPER

 **Select Your BeachPatrol Group**

ALBERT PARK >

PORT MELBOURNE >

ELWOOD >

ST KILDA >


BRIGHTON >

SO. MELBOURNE >

SANDRINGHAM >

Optus 4:05 pm 61%

LITTER STOPPER

 **Select Your Love Our Street Group**

ELWOOD >

Port Melbourne >

CAULFIELD >

MARIBYRNONG >

WERRIBEE >

RIPPONLEA >

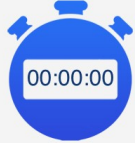
Cape Woolamai >



Tell us About Your Clean

Optus 4:07 pm 61%

← ABOUT YOUR CLEAN

 00:00:00

Start Timer

Begin Without Timer

Enter the clean date

2019-06-09

Enter your location

Enter your Group's Name

PORT MELBOURNE

Country

Australia

Optus 4:07 pm 61%

← ABOUT YOUR CLEAN

Country

Australia

State

Victoria

Post Code

3207

Type of Clean area, Beach, Street...

Beach

No sorting clean only

Standard BP/LOS Clean

Full Audit Clean

Partial Audit Clean

Optus 5:09 pm 48%

← ABOUT YOUR CLEAN

Australia

State

Victoria

Post Code

3207

Type of Clean area, Beach, Street...

Corporate Clean

^ v Done

Beach

CFOB (Bay) Hot spot

Corporate Clean

Litter Hotspot

Main Road

Park



Other Group Information

Optus 4:06 pm 61%

← ABOUT YOUR CLEAN

00:00:00

Start Timer

Begin Without Timer

Enter the clean date

2019-06-09

Enter your location

Enter your Group's Name

Country

Australia

Optus 4:06 pm 61%

← ABOUT YOUR CLEAN

Country

Australia

State

Victoria

Post Code

Type of Clean area, Beach, Street...

Beach

No sorting clean only

Standard BP/LOS Clean

Full Audit Clean

Partial Audit Clean



Timing Options

Optus 4:06 pm 61%

← ABOUT YOUR CLEAN

00:00:00

Start Timer

Begin Without Timer

Enter the clean date

2019-06-09

Enter your location

Enter your Group's Name

Country

Australia

Optus 4:25 pm 54%

← ABOUT YOUR CLEAN

Country

Australia

State

Victoria

Litter Stopper

Please select a suitable timer option to continue

OK

No sorting clean only

Standard BP/LOS Clean

Full Audit Clean

Partial Audit Clean






Collection Types

BP/LOS Std Clean

Optus 4:24 pm 54%

← BP/LOS CLEAN →

| | | | |
|---|---|--|--|
|  Bot Gl |  Bot Pl |  Can Met |  Syringe |
|---|---|--|--|

Add Note (if desired)

Full Audit Clean 24 items





Optus 4:25 pm 54%

← FULL AUDIT CLEAN →

| | | | |
|---|--|--|--|
|  Bot Gl |  Bot Pl |  Can Met |  Syringe |
|  Bit H |  Bit H |  Frag S |  Frag S |
|  Micro Pl |  Food... |  Food Ct |  Bag Pl |
|  Zip L |  Straw |  Bot Top |  Bot Lab |
|  Cup Cof |  Cup Oth |  Balloon |  Cutlery |

Optus 4:25 pm 54%

← FULL AUDIT CLEAN →

| | | | |
|--|---|---|--|
|  PolyS |  Fish L |  Butt |  Nurdles |
|--|---|---|--|

Add Note (if desired)



Partial Audits and Null Entries

Optus 4:26 pm 54%

PARTIAL AUDIT

Select Item For Partial Audit

| | | | |
|----------|---------|---------|---------|
| | | | |
| Bot GI | Bot PI | Can Met | Syringe |
| | | | |
| Bit H | Bit H | Frag S | Frag S |
| | | | |
| Micro PI | Food Wr | Food Ct | Bag PI |
| | | | |
| Zip L | Straw | Bot Top | Bot Lab |

Next

Optus 4:27 pm 54%

PARTIAL AUDIT

Select Item For Partial Audit

| | | | |
|----------|---------|---------|---------|
| | | | |
| Bot GI | Bot PI | Can Met | Syringe |
| | | | |
| Bit H | Bit H | Frag S | Frag S |
| | | | |
| Micro PI | Food Wr | Food Ct | Bag PI |
| | | | |
| Zip L | Straw | Bot Top | Bot Lab |

Next

Optus 4:27 pm 54%

PARTIAL AUDIT

| | | | |
|----------|---------|---------|---------|
| | | | |
| Bot GI | Bot PI | Can Met | Syringe |
| | | | |
| Bit H | Bit H | Frag S | Frag S |
| | | | |
| Micro PI | Food... | Food Ct | Bag PI |
| | | | |
| Zip L | Straw | Bot Top | Bot Lab |
| | | | |
| Cup Cof | Cup Oth | Balloon | Cutlery |

- ≠ 0

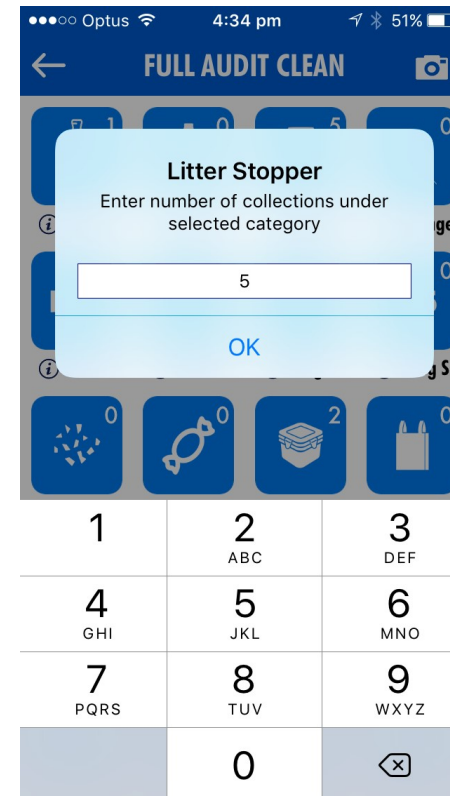


Adding Bulk Counts

To add in a high number of an item, hold down that icon button for 2 seconds



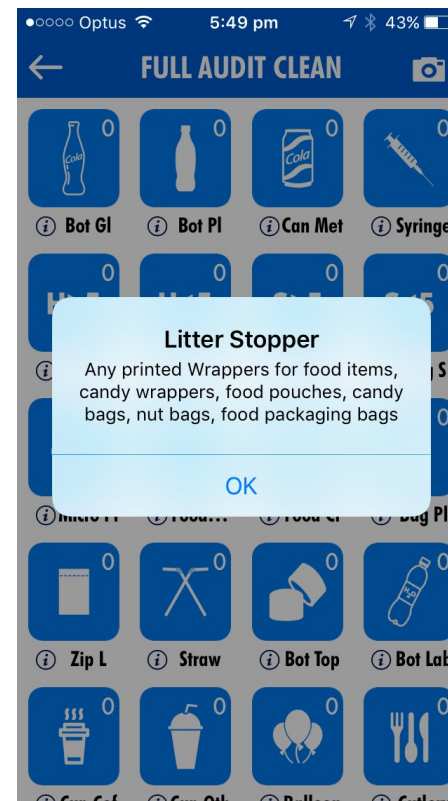
A pop up screen allows you to enter in the number





What is Included in Each Item?

Q. How do I know which category an odd item I find goes into?





Your Time and Effort

Using Timer

●●●● Optus 12:59 pm 70%

TIME AND EFFORT



Stop Timer

Number of people performing clean

20

Person hours spent
on the clean

01:43

Enter Kgs

15

Enter #BP Bags (12l)

SUBMIT

●●●● Optus 12:59 pm 70%

TIME AND EFFORT

Enter #BP Bags (12l)

5

Length cleaned estimate (in meters)

300

Width of area cleaned, optional,...

10

Enter any special recent Weather or
Community events that might
impact
litter , (opt)

☐ Send to AMDI ?
(Actual data only no test...)

SUBMIT




Your Time and Effort

Without Using Timer Option

Optus 6:03 pm 40%

← **TIME AND EFFORT**

 00:00

Stop Timer

Enter Time In Minutes

60

Number of people performing clean

10

Person hours spent on the clean **10:00**

Enter Kgs

50

Enter #BP Bags (12l)

SUBMIT

Optus 6:03 pm 40%

← **TIME AND EFFORT**

Enter #BP Bags (12l)

12

Length cleaned estimate (in meters)

500

Width of area cleaned, optional,...

25

Enter any special recent Weather or Community events that might impact litter , (opt)

St Kilda Festival Yesterday

☐ **Send to AMDI ?**
(Actual data only no test...)

SUBMIT



Where Does the Data Go?

- To the originator
- www.litterstopper.com/emaildata
- To AMDI if selected

| Litter Stopper Email Data | | | | | | | | | | | | | | | |
|---------------------------|------------------------|-----------|----------------|--------------|-----------------------------------|------------------------|----------|-----------|-----------|------------------------------|-----------------------|----------------------|--------|--------|-----|
| Show 10 entries | | | | | | | | | | Search: <input type="text"/> | | | | | |
| Id | Report to Admin | Date | Group name | Organisation | Collection Note | Location | State | Post Code | Country | Area Type | Type of Clean | Total Item Collected | Bot GI | Bot PI | Can |
| 1 | Report | 09-Jun-19 | ALTONA | BeachPatrol | Week's worth of walks around town | Altona | Victoria | 3018 | Australia | Beach | Standard BP/LOS Clean | 164 | 12 | 63 | 89 |
| 2 | Report | 09-Jun-19 | WERRIBEE | BeachPatrol | | K Road Cliffs | Victoria | 3030 | Australia | River Banks | Standard BP/LOS Clean | 510 | 219 | 134 | 157 |
| 3 | Report | 08-Jun-19 | PORT MELBOURNE | BeachPatrol | | dog beach to SMLSC | Victoria | 3207 | Australia | Beach | Standard BP/LOS Clean | 0 | 0 | 0 | 0 |
| 4 | Report | 08-Jun-19 | PORT MELBOURNE | BeachPatrol | North breeze | spirit of tas beach | Victoria | 3207 | Australia | Beach | Standard BP/LOS Clean | 0 | 0 | 0 | 0 |
| 5 | Report | 07-Jun-19 | DROMANA | BeachPatrol | | dromana beach from ... | Victoria | 3936 | Australia | Beach | No sorting clean only | — | — | — | — |
| 6 | Report | 07-Jun-19 | ALTONA | BeachPatrol | | Esplanade. Altona. ... | Victoria | 3018 | Australia | Beach | No sorting clean only | — | — | — | — |
| 7 | Report | 06-Jun-19 | ASPENDALE | BeachPatrol | | aspendale beach | Victoria | 3195 | Australia | Beach | No sorting clean only | — | — | — | — |



Manual Recording sheet

Litter Stopper Recording Sheet

| Date | Location | | | Row Totals | Item No. | Grand Total of Multiple Sheets |
|------------|------------------------------|-----------------|--------------------------------|------------------------------|----------|--------------------------------|
| Item No | No of People | # of Bags (12L) | Total Pieces of Plastic | Area Type, beach, street etc | | |
| | Length of Survey | | Wind direction | | | |
| | Width of Survey | | Wind strength, low med or high | | | |
| Start Time | Weight kgs | End Time | | | | |
| 1 | Bottle Glass | | | Totals | BG | |
| 2 | Bottle Plastic | | | | BP | |
| 3 | Can metal | | | | CM | |
| 4 | Syringe | | | | Sy | |
| 5 | Hard large >50 mm | | | | HL | |
| 6 | Hard small <50 mm | | | | HS | |
| 7 | Large soft >50 mm | | | | SL | |
| 8 | Small soft 5 to 50 mm | | | | SS | |
| 9 | Micro <5 mm | | | | Mi | |
| 10 | Food Wrappers | | | | FW | |
| 11 | Food Containers | | | | FC | |
| 12 | Plastic Bags or bits of bags | | | | PB | |
| 13 | Zip Lock Bags | | | | ZL | |
| 14 | Straws or bits of straws | | | | Stw | |
| 15 | Bottle Tops | | | | BT | |
| 16 | Bottle Labels | | | | BL | |
| 17 | Coffee cups & lids | | | | Cof | |
| 18 | Other cups & lids | | | | Cup | |
| 19 | Balloons and B'strings | | | | Bal | |
| 20 | Cutlery | | | | Cut | |
| 21 | Polystyrene | | | | Poy | |
| 22 | Baitbags and fishing gear | | | | Fsh | |
| 23 | Butts | | | | But | |
| 24 | Nurdles | | | | Nu | |
| Notes | | | | | | |

Pix...



Time to do a Trial

- Download the App - Litter Stopper
- Enter this collected litter

Centre for eResearch and Digital Innovation (CeRDI)

The CeRDI approach:

development of innovative digital solutions that aggregate data and information

to bridge the gap between academic research and government, industry and community needs.

<http://www.cerdi.edu.au/>





LitterWatch intended to support community data collection and reporting

Important to reduce duplication in monitoring efforts and value-add to existing programs where ever possible

Key technology components:

- Website
- Linked mapping portal
- Administration system for litter data entry, verification and export



Example of how the administration system will function - [Waterwatch Victoria](#)



LitterWatch will be

- open source
- publicly-accessible (mapping portal)

Community data will be aggregated with agency and other accessible data

LitterWatch will provide a single point-of-access to litter monitoring information



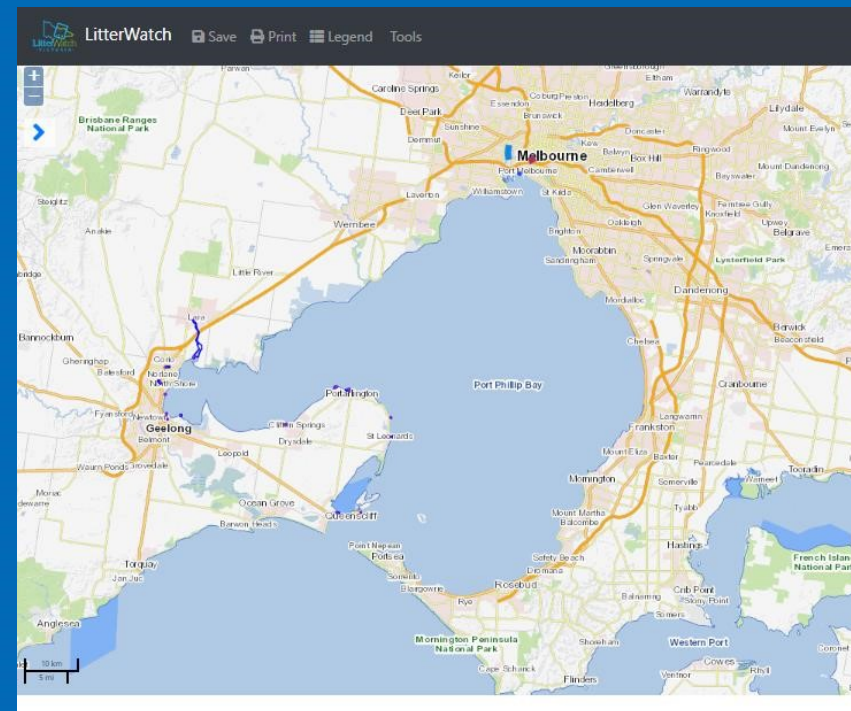
Current litter data available for decision making comes from:

Community monitoring

- Beach Patrol
- Port Phillip EcoCentre
- Caring for our Bays
- Tangaroa Blue

Targeted agency monitoring
e.g. Melbourne Water

Local governments
e.g. City of Port Phillip



Challenges with current monitoring data:

- Accessibility and discoverability – agency data
- Reuseability – data sometimes not fit-for-purpose:
 - detailed spatial information may be lacking
 - Different survey methods
 - Variable data structure



Findable Interoperable
Accessible Reusable

<https://www.ands.org.au/working-with-data/fairdata>

LitterWatch aims to ensure that community data is useful for decision making and that community efforts are recognised

Federation University Honours research project dedicated to testing litter monitoring methods – Hamish McDonough

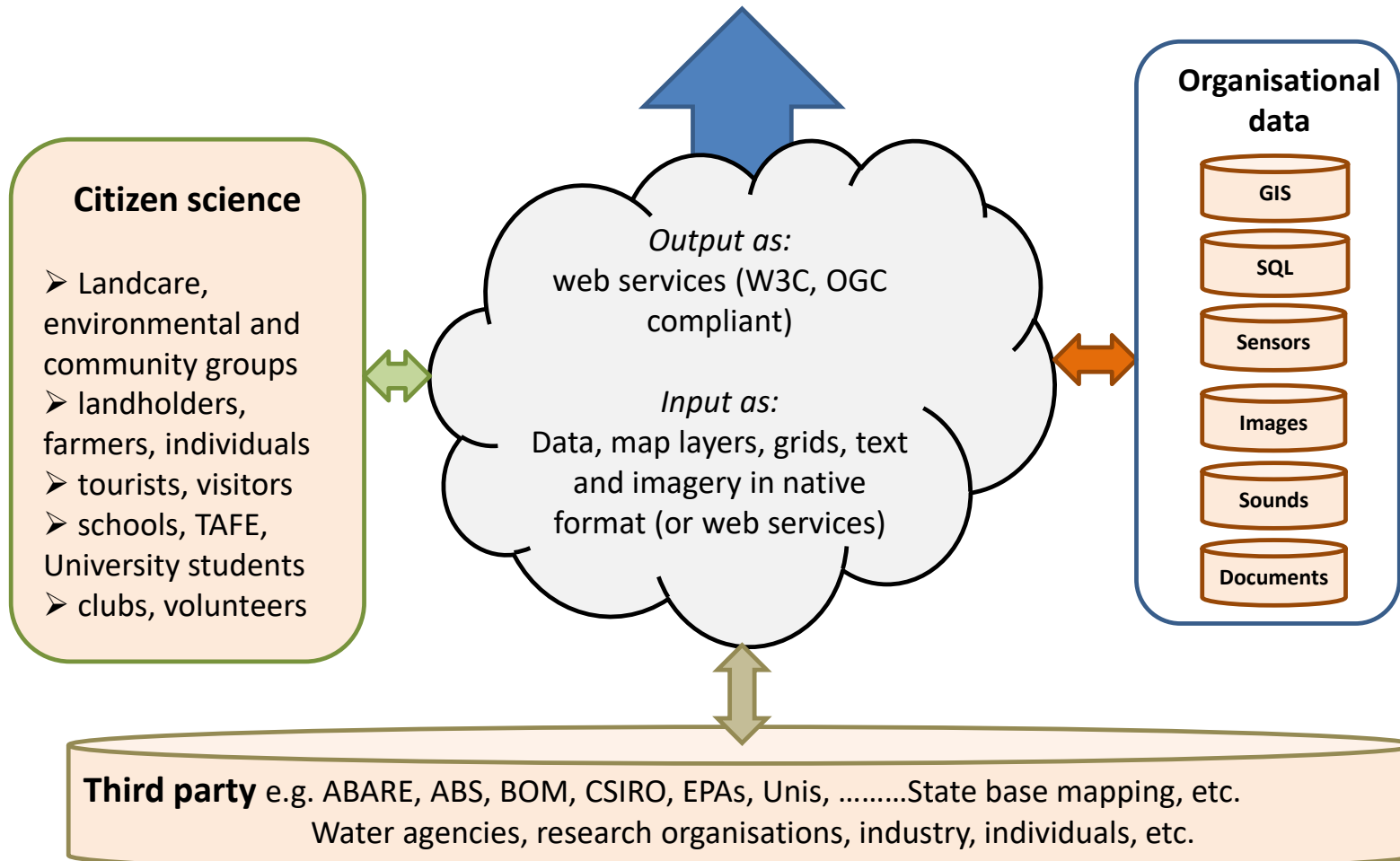
Questions for the audience?

Some of you may be here because you are already involved in litter education, litter audits or litter clean up. Or you may be more generally interested in helping solve our litter problem. [If there is time] we have a few questions:

- Where do you source litter information, facts and figures?
- Do you undertake litter clean ups?
- Are you undertaking litter audits when you undertake litter clean ups? If no – why not?
- If yes – what are you using the data for?
- Are you using a litter audit method from the Port Phillip EcoCentre, Tangaroa Blue, Caring for Our Bays or the LitterStopper app from Beach Patrol? Or something else?
- And if you have data can we store it and show it on LitterWatch?
- Do you store or use litter data?
- Are there particular litter items that you are most interested in?
- How do you see you could use LitterWatch? (Education, Reporting, Funding requests, recruit volunteers etc.)

CeRDI capability: interoperability

End users, e.g. Browser, mobile application, desktop application, groundwater model, etc.
Used by: researcher, community group, farmer, environmentalist, media outlet, agribusiness, etc.



CeRDI Spatial Data Infrastructure (generalised)

