Waste Management Design Guide for New Developments

PORT ADELAIDE ENFIELD

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1. General Requirements:

- Developments should be designed to accommodate the waste management systems offered by Councils.
- Developers should liaise with Councils to confirm the waste management system offered when planning and designing new developments.
- Examples include (for a single residential dwellings): A three wheelie bins system comprising: 1 x 240 L green bin (organics), 1 x 240 L yellow bin (recycling), and 1 x 140 L blue bin (general waste).
- Where a development requires larger (e.g. skip bins) or additional bins, this needs to be factored in early and developments designed accordingly.
- Consideration needs to be given to the development density of the locality, and possible future increases in development density & demand for on-street parking, when reviewing waste management requirements for a new development:
    - In areas where planning rules allow high density: on-street parking will be in higher demand and on-street congestion will be worse. In these areas, it is more important to design bin collection areas and waste vehicle manoeuvring correctly, as the likelihood of waste management related issues is increased.
    - In older suburbs where planning rules allow increases to development density, bin collection may not currently be an issue, but as land continues to be developed, on-street parking demand, bin collection constraints, and waste vehicle manoeuvrability issues are likely to worsen, so it is important to design bin collection areas and waste vehicle manoeuvring correctly.

- In lower density areas where allotment sizes are larger, roads are wider, and congestion within the road reserve is reduced, the likelihood of bin presentation and collection issues is reduced.

2. Consider Waste Management Requirements Early:

- Waste management requirements need to be considered early in the development process, prior to submitting land division or land-use planning applications.
- This is particularly important for apartments, developments with common driveways, commercial, and industrial developments where it may be more difficult to accommodate waste management requirements on the street verge.
- Early considering of waste management requirements ensures that:
    - All stakeholders identify the waste management requirements that will apply to a development so these can be planned for and accommodated early.
    - Where skip bin collection is proposed within a road reserve and accepted by Council; additional infrastructure may be required within the design of the road, including increased road reserve & carriageway widths, to accommodate waste collection maneuvering & activities.
    - Where skip bin collection is proposed within a road reserve but is not accepted by Council; it is important to highlight this early, as allotments, the design of land-uses developments, and adjacent road reserves must have sufficient space to accommodate waste collection vehicles manoeuvres and bin collection activities.
    - Skip bins can require larger front or rear-loading waste collection vehicles than those used by Councils which must be considered.
    - Decision Notification Form (DNF) notes or conditions may need be applied at the Land Division Planning Consent stage to capture any planned waste management requirements associated with a new allotment or development, and to highlight important waste management related matters that must be address at detailed design.

3. Number and Type of Bins:

- It is important to estimate and confirm the correct number, size, and type of bins for each allotment or development to ensure they are appropriately accommodated for.
- When land-use architectural plans are not yet known, bin numbers, sizes and types should be estimated as accurately as possible when assessing land division applications.
- Workings may be required to demonstrate how bin numbers, sizes and types have been estimated.
- Waste management consultants can assist with estimating waste management requirements and preparing an appropriate waste management strategy for new developments.

4. Bin Presentation Plans:

- A Bin Presentation Plan should be prepared for new developments which shows:
    - Proposed bin presentation areas.
    - Bins should :
        - Be drawn to scale
        - Should reflect the correct number of bins required for each development or allotment

        - include 0.3 m clearance between bins or from any obstruction.
    - On-street parking areas should be shown.
    - Waste vehicle swept paths should be shown:
        - For the largest anticipated waste collection vehicle.
        - Be checked in all directions.
        - Must assume all on-street parking spaces are occupied and not conflict with any on-street parking.
    - Bin presentation areas should not conflict with:
        - On-street parking.
        - Any verge obstructions (e.g. garden beds & lamp posts).
        - Vehicle manoeuvring paths, both in and out of allotments or within the road carriageway.
    - Proposed bin locations must have regard for the physical location of the waste vehicle pick-up arm. This is typically located behind the front passenger seat for wheelie bins, and either front or rear loading for skip bins.
    - Any parking controls required to accommodate waste collection vehicle manoeuvres shall be identified and must ensure that minimum development on-street parking numbers are achieved.

5. Bin Storage Areas:

- Sufficient space needs to be planned for and provided within each development to accommodate the necessary required number, size and type of bins.
- It is desirable for bin storage areas to be located outside of garages and screened from public view. Bin screening or fencing may be desirable, particularly where bin storage areas are proposed in front of dwellings.
- Where bin storage areas are proposed within garages, carports, and parking areas, additional space should be provided, in addition to the minimum required garage, carport or parking dimensions, to ensure bins do not conflict with parking areas, and to ensure bins can be conveniently transferred to collection areas.
- Bin transfer paths should be considered when proposing bin storage areas. It should be possible to conveniently transfer bins to the collection area without conflicting with parked vehicles or other site features.
- Bin storage areas should be drawn to scale on architectural plans and include appropriate clearances between bins.

6. Bin Presentation & Collection Areas:

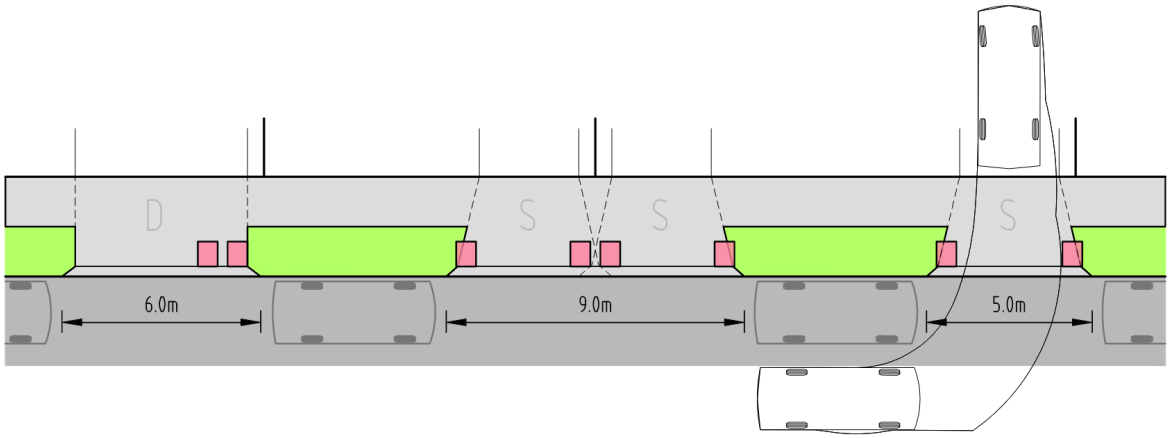
<u>General:</u>

- Bin presentation areas and proposed bin locations must have regard for the physical location of the waste vehicle's pick-up arm:
    - For wheelie bins: The pick-up arm is usually located behind the front passenger seat.
    - For skip bins: This usually requires larger front or rear loading vehicles.
- At the end of stub roads, including roads and laneways, it is important to consider both waste vehicle manoeuvring paths, and the location of waste vehicle pick-up arms when proposing bin presentation areas. In some instances, limited opportunities may exist for bin presentation due to limited verge space and restricted ability for waste vehicles to overhang the end of a stub roads or laneways.

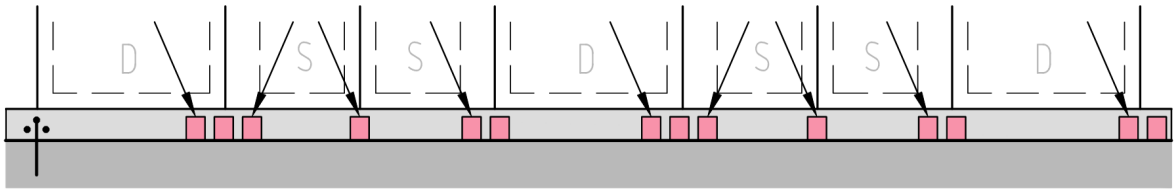
- Bin collection areas should not be proposed behind on-street parking areas where parked vehicles would prevent collection, or on the road carriageway where bins would obstruct on-street parking & manoeuvring.

Obstructing Driveways:

- It is important to consider access and the swept paths of vehicles entering and exiting allotments when proposing bin presentation areas.
- Bin presentation areas should not unreasonably obstruct access to driveways. This is inconvenient for residents and can lead to on-road safety and congestion issues when residents are required to move bins to access properties.
- As a general rule, a minimum of one driveway should remain unobstructed:
    - For single driveways: All bins should be positioned clear of vehicle maneuvering paths, to ensure access in and out of developments is not obstructed.
    - For double (or greater) driveways: Ideally and where possible, all bins should be kept clear of driveways. Where this is difficult to achieve, it may be acceptable for bins to temporarily obstruct parking spaces, provided that at least one parking space remains unobstructed at all times. This arrangement allows landowners to position bins in front of an occupied parking space before departing and returning.
- Crossovers should be sufficiently flared to make space for bin presentation without conflicting with vehicle manoeuvring paths:



- In laneways, sufficient space needs to be provided between roller doors to accommodate bin presentation areas:



- When designing laneway landscaping, suitable paved areas should be provided between roller doors, and the design of above-ground services such as light poles coordinated to ensure suitable areas exist for bin presentation.

On-Street Parking:

- Bin collection should be possible without the need to restrict on-street parking.
- Parking controls should only be proposed where discussed with and accepted by Council, and only after all other options have been explored. Parking controls may include time-based restrictions, such as 'No Parking' controls at waste collection times only.

7. Bin Transfer Paths:

Distance:

- The distance between bin storage and presentation areas should facilitate convenient waste transfer (e.g. 30 m desirable max, 50 m absolute max). Shorter distances may be required on steep sites, or in special need cases (e.g. aged care facilities).

Width:

- Check footpaths are wide enough to facilitate transfer or bins:
    - 140 L / 240 L: 1.0 m (minimum), 1.2 m (desirable)
    - 660 L skip bins: 1.2 m (minimum), 1.5 m (desirable)
    - 1,100 L skip bins: 1.5 m (minimum), 1.8 m (desirable)

Grades / Steps:

- Grades should not exceed 1 in 10 and be free of steps.
- Flatter grades should be considered where skip bins are required.
- Bin presentation and storage areas should be level, stable, and safe.
- Road, verge, and bin storage/presentation area grades should be suitable so bins will not tip over or roll away. (maximum 5% / 1 in 20 recommended).

Surface Treatment

- Wheelie bins: paved, rubble or grassed (no landscaping)
- Skip bins: paved

8. Waste Collection Vehicles:

Waste Vehicle Dimensions:

- Waste vehicle dimensions should be confirmed with the relevant council and/or waste management contractor.
- Example vehicle dimensions (for a 3 x bin residential waste collection system):
    - IVECO ACCO 6 x 4 (Euro 6) or Dennis Eagle Elite 2 (Euro 5) 5.5 m wheelbase
    - Overall body length & width: 10.24 m x 2.50 m (3.20 m including mirrors)
    - Number of axles: 1 front, 2 rear
    - Axle offset dimensions (measured from front of vehicle body): 1.19 m, 5.50 m,1.40 m, 2.15 m (10.24 m total)
    - Number of wheels on each axle: 2 front, 4 rear
    - Wheel track: 2.40 m front & rear (measured from outer edge of tyres)
    - Turning circle: 21.22 m (vehicle body wall to wall), 19.62 m (outer front wheel kerb to kerb)
    - Steering time: 4.0 seconds

- Where skip bins need to be collected, larger waste vehicles dimensions may apply, and may require front or rear loading waste collection vehicles.

Maneuvering:

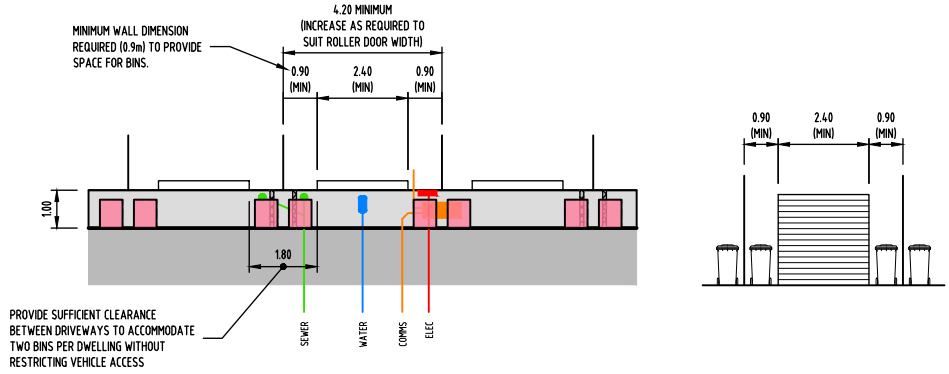
- Waste vehicle manoeuvring should be possible and demonstrate within the constraints of the existing or proposed road reserve.
- Swept path assessment should have regard for existing site features and be drawn to scale, including kerbing, parking areas, and any existing line marking or parking controls.
- Any parking controls required to accommodate waste vehicle manoeuvres should be identified and must be discussed with Council to confirm their acceptance and suitability.

9. Apartments & Community Title Developments:

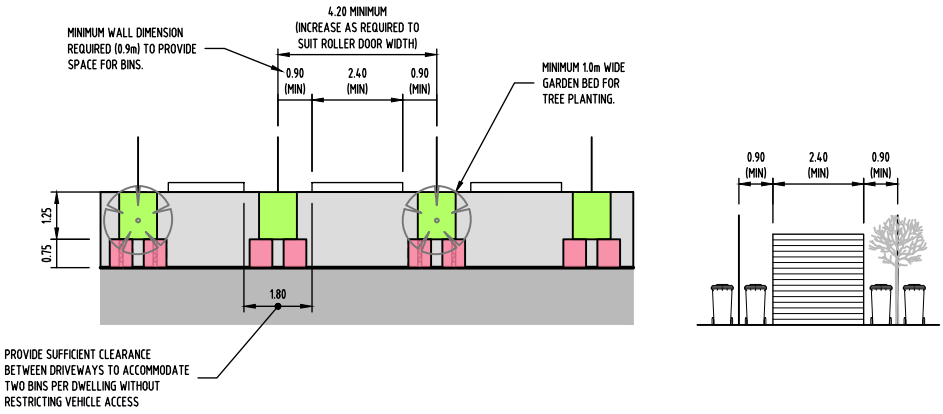
- Apartments and community title developments can require larger amounts of verge space for bin presentation and often have higher on-street parking demand. It is important to confirm that sufficient space exists to accommodate all bins required and on-street parking for these types of development.
- It is important to consider waste management requirements for apartment and community title developments early, to ensure suitable bin storage areas, transfer paths, and bin presentation areas are factored into the architectural design of the site.
- Where verge space is insufficient, bin collection may need to be proposed on private land. In these instances, developers should discuss proposals with Council and waste management contractors to confirm an appropriate waste management strategy to ensure relevant legal and traffic requirements are addressed.
- Engaging a waste management consultant to review waste management requirements and prepare a Waste Management Report can help improve overall planning & design outcomes and reduce development assessment timeframes.

10. Laneways:

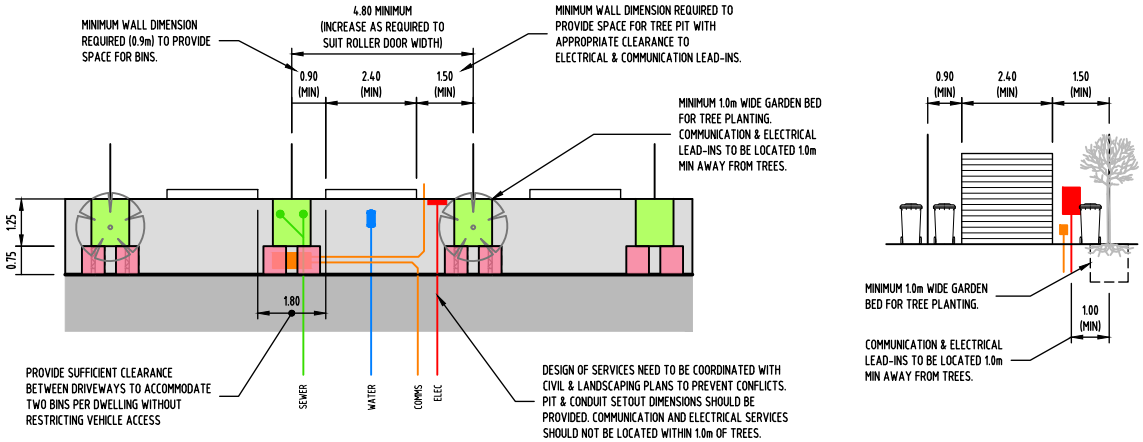
- Where allotments are proposed in new land divisions with dual frontages (i.e. frontage to both local road and laneway), bin presentation areas should be proposed from the laneway. This prevents the need to ban on-street parking in front of dwellings, and avoids unsightly bin storage area in the front of dwellings.
- Sufficient clearance should be provided between driveways, and suitable hardstand areas provided, to ensure adequate space is provided for bin presentation. It is important to consider this, in conjunction with any trees which must also be installed (with appropriate clearances from any services) when designing allotment widths in new land divisions:



RECOMMENDED MINIMUM LANEWAY ALLOTMENT WIDTH:
NO TREES IN LANEWAY = 4.2m



RECOMMENDED MINIMUM LANEWAY ALLOTMENT WIDTH:
TREES WITH ALL SERVICES FROM PRIMARY FRONTAGE ROAD = 4.2m



RECOMMENDED MINIMUM LANEWAY ALLOTMENT WIDTH:
TREES WITH ELECTRICAL AND/OR COMMUNICATIONS FROM LANEWAY = 4.8m

- Sufficient space should be provided adjacent each allotment to accommodate bins. Bins should not need to be placed adjacent a neighbour's driveway for collection.

- Bin presentation should not conflict with any obstructions such as landscaping or lamp posts in laneways. It is important to undertake coordinate checks when designing landscape, services and bin presentation areas in new laneways.

11. Stub Roads (includes end of Laneways, T-turns and Cul-De-Sacs):

- At the end of stub roads, where limited verge and/or road space may be available for bin presentation, waste vehicle manoeuvring, and overhang at the end of kerbing, it is important to consider both waste vehicle manoeuvring paths and pick-up arm locations when nominating proposed bin presentation areas.
- Some waste contractors have adopted policies to prohibit reversing without a spotter, requiring forward entry and exit from all sites, or simply banning collections from unsafe or non-compliant road layouts all together, so turnaround areas should be provided at the end of all stub roads. Exceptions to this requirement should only apply where stub road lengths are short (e.g. do not exceed 50 metres) and Councils waste management representatives deems it safe for waste collection vehicles to reverse the full distance.
- Unless otherwise approved by the relevant authority, the following minimum cul-de-sac kerb dimensions are recommended to ensure sufficient space for a 10.24 m waste collection vehicle to turn around. Larger radii may be required where larger waste collection vehicles need to be accommodated:
    - 11.0 m (with no on-street parking)
    - 13.5 m (if on-street parking is present)

12. Skip Bins:

- It should not be assumed that loading and unloading of skip bins within a road reserve will be accepted by Council. Where skip bins are required, appropriate storage, loading and unloading areas should be planned to the satisfaction of Council.
- Skip bin collection should only be proposed within the road reserve where accepted by Council.
- Where skip bin collection is accepted within the road reserve by Council, the following should be considered:
    - Temporary skip bin storage areas should be provided on private land near the boundary, close to the bin collection areas, so that skip bins are not temporarily placed in the road reserve.
    - Grades, ramps, steps, and bin transfer paths need to be appropriately designed to facilitate convenient and safe bin transfer and collection.
    - Loading and maneuvering areas need to be sufficient in size to accommodate required waste vehicle manoeuvres and loading and unloading activities, without obstructing footpaths, impacting parking or road traffic.

13. Bin Dimensions:

•	2-Wheel (Wheelie Bins):	140 L:	615 mm deep x 535 mm wide x 915 mm tall
		240 L:	740 mm deep x 580 mm wide x 1070 mm tall
•	4-Wheel (Skip -Plastic):	660 L:	770 mm deep x 1205 mm wide x 1215 mm high
		1,100 L:	1,080 mm deep x 1240 mm wide x 1330 mm high
		1,500 L:	1,280 mm deep x 2025 mm wide x 1,205 mm high

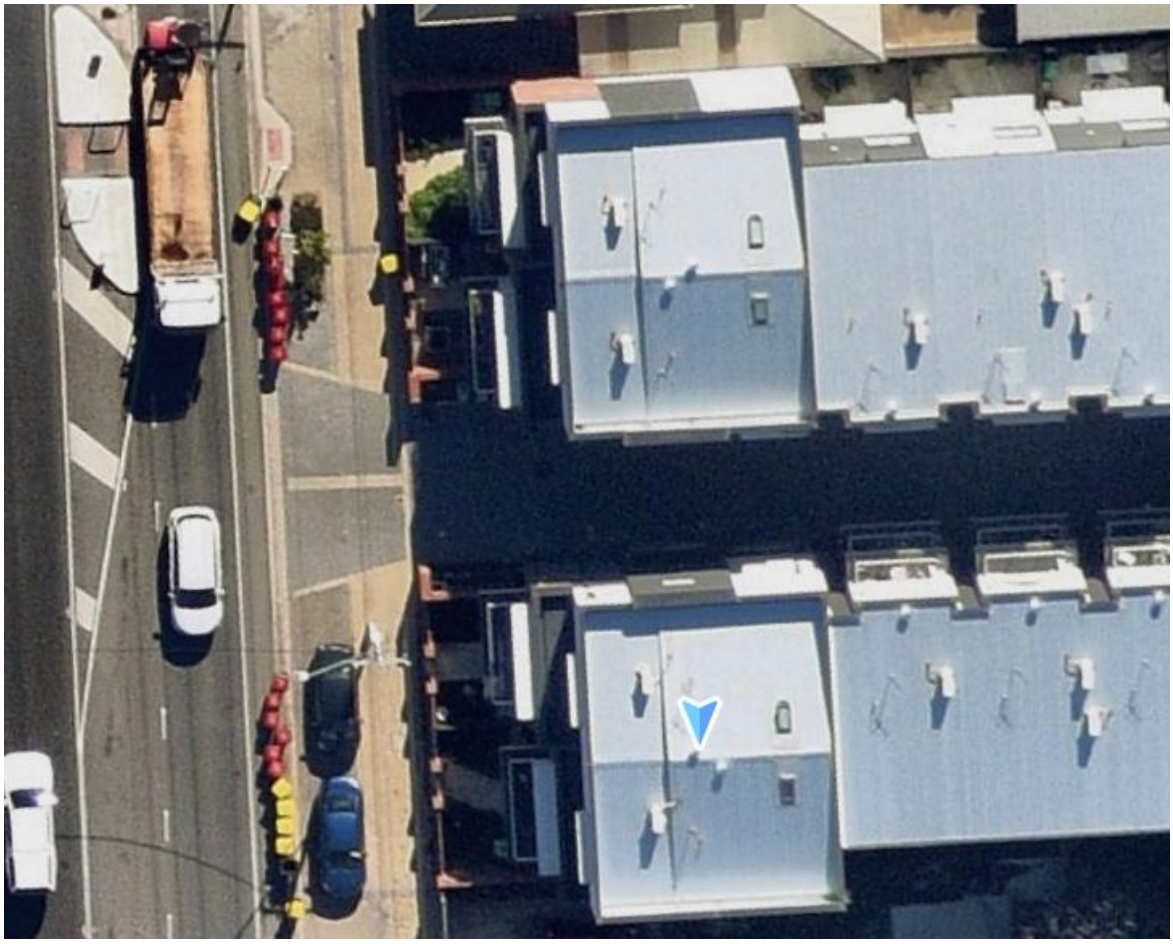
14. Further Guidance:

- *South Australian Better Practice Guide - Waste Management in Residential or Mixed Use Developments*, Zero Waste SA (2014)

15. Bad Examples:

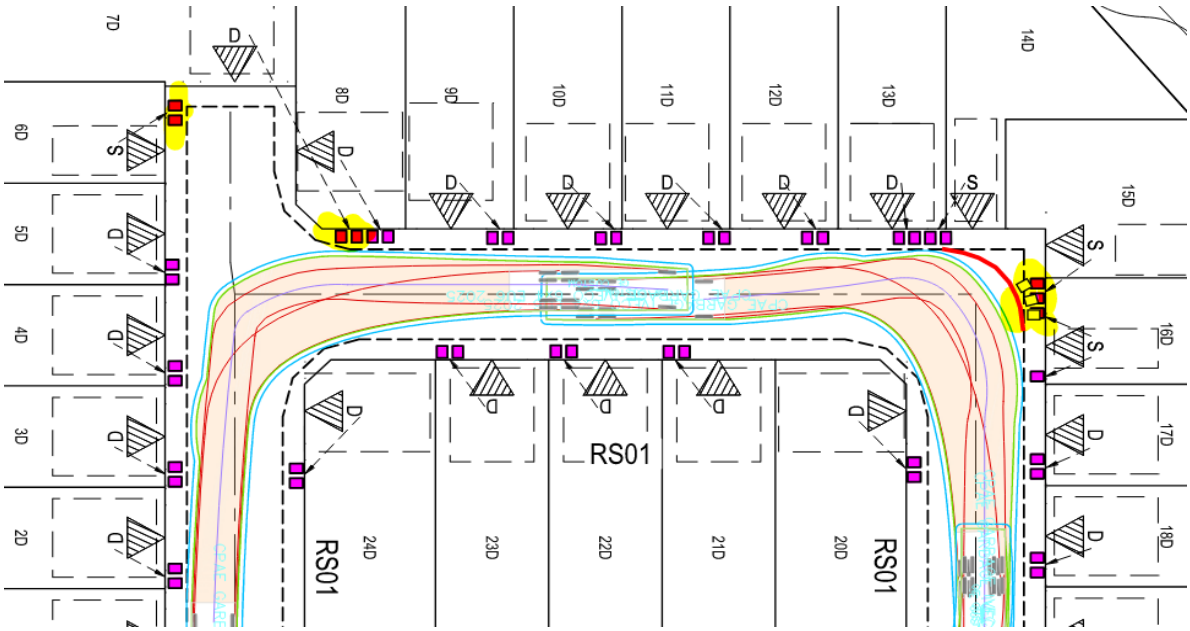
Example 1:

- Insufficient verge space available for bin presentation resulting in bins being placed in a full time bicycle lane:



Example 2:

- Bin presentation for Lot 6D and 15D does not work as bin location does not consider the location of waste vehicle pick-up arm which is located behind the passenger seat.
- Bin presentation for Lot 7D is highly undesirable due to proximity from dwelling.
- Bin presentation for Lot 14D unacceptable as bins obstruct neighbours garage:



Example 3:

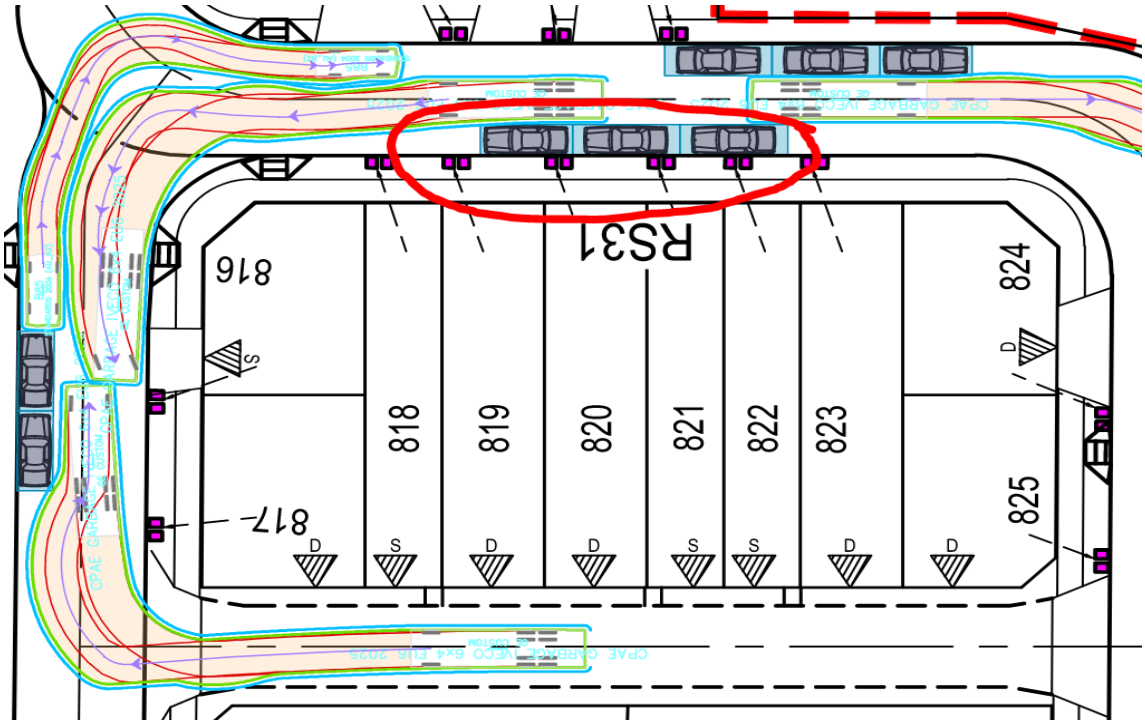
- No space provided between roller doors for bin presentation, requiring motorists to stop in the roadway and move bins to access the property:



Example 4:

- For bin collection to work for Lots 819–822, on-street parking would need to be banned. This proposal would also require bin storage areas to be located at the front of dwellings, which is undesirable in terms of amenity, particularly when narrow allotment width and limited space exists.

- Waste collection for lots 817-825 should be demonstrated from the laneway with bin storage provided inside garages to prevent impacts on parking.



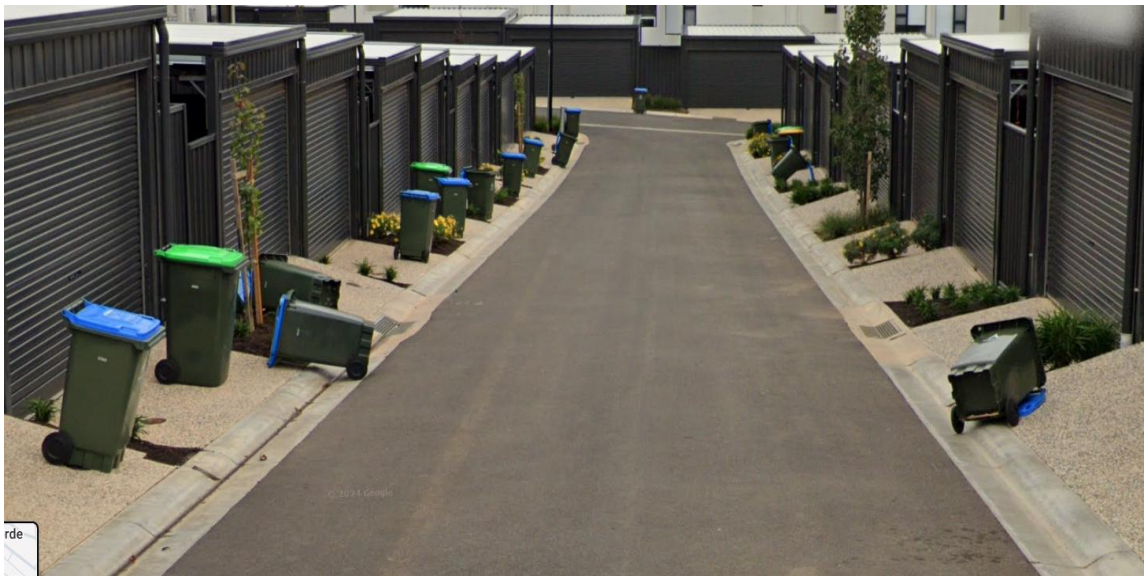
Example 5:

- The location of kerbing at the laneway does not provide sufficient length for a waste vehicle to overhang. As a result, a waste truck will not be able to collect bins adjacent to the last allotment, due to the trucks pick-up arm location. Subsequently, the resident will need to place bins in front of their neighbours roller door, impacting access to their neighbours property:



Example 6:

- Road longitudinal grades are too steep resulting in bins topping over. Flat bin presentation areas should be provided.



Example 7:

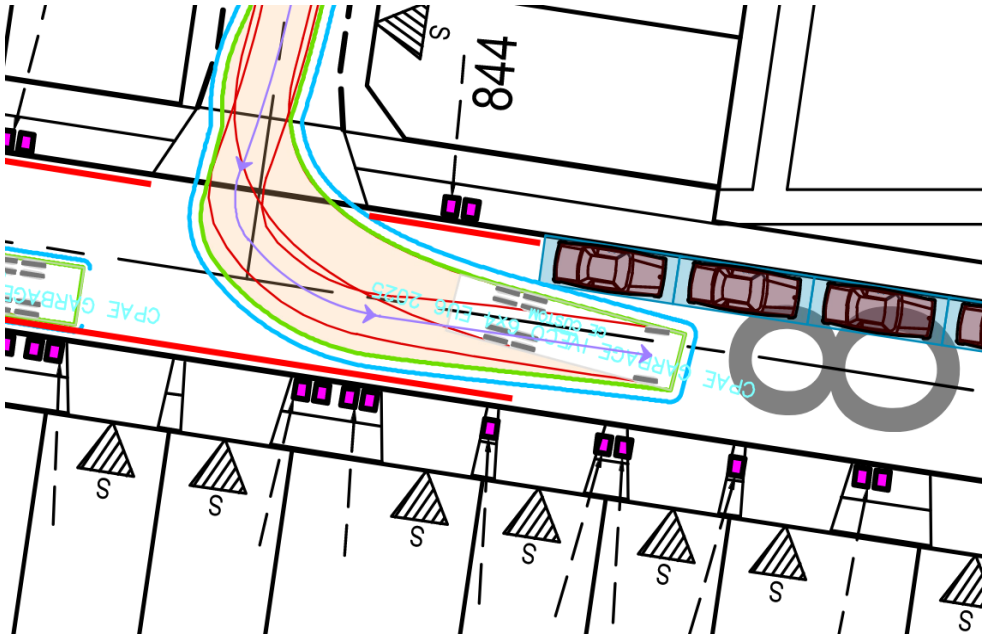
- Insufficient paved area for bin presentation between roller doors. This results in residents placing bins in the carriageway, so they avoid obstructing their driveways. Subsequently, this restricts two-way vehicle movements along the length of the lane, and affects the ability for neighbours to turn into garages on the opposing side of the lane.



16. Good Examples:

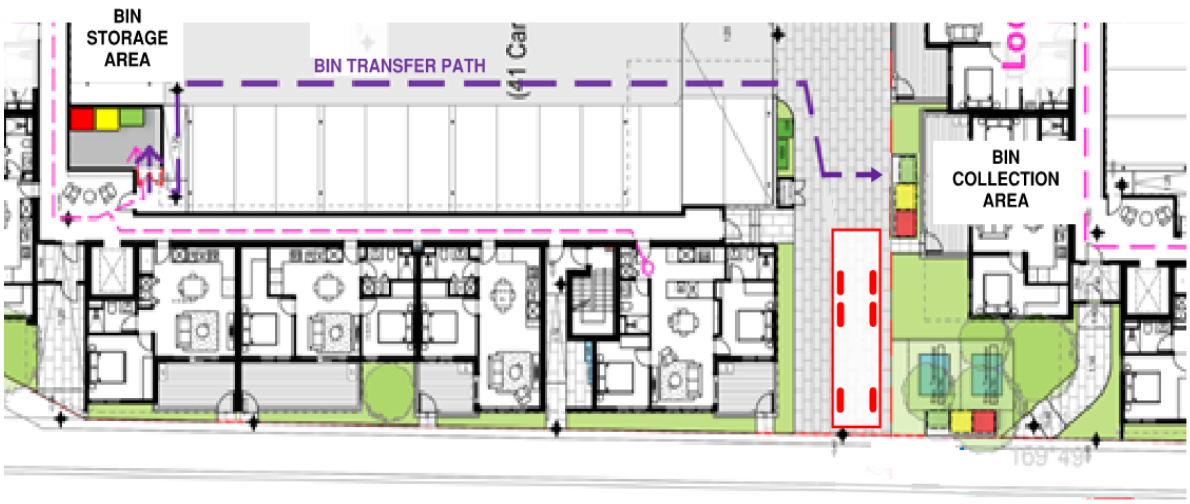
Example 1:

- An example Bin Presentation Plan for a residential land division which shows:
    - Which bins are assigned to each dwelling.
    - Proposed crossovers, kerbing and demonstrates no conflicts with vehicle maneuvering areas or verge obstructions.
    - Waste vehicle dimensions and maneuvers.
    - All necessary parking controls to facilitate waste vehicle maneuvers.
    - Bins are drawn to scale with appropriate clearances.



Example 2:

- An example Bin Presentation Plan for a larger mixed use commercial & apartment development which shows:
    - Accommodates larger skip bins.
    - Bin storage and presentation areas drawn to scale.
    - Bin transfer paths.
    - Sufficient space for larger waste collection vehicle pick-up.



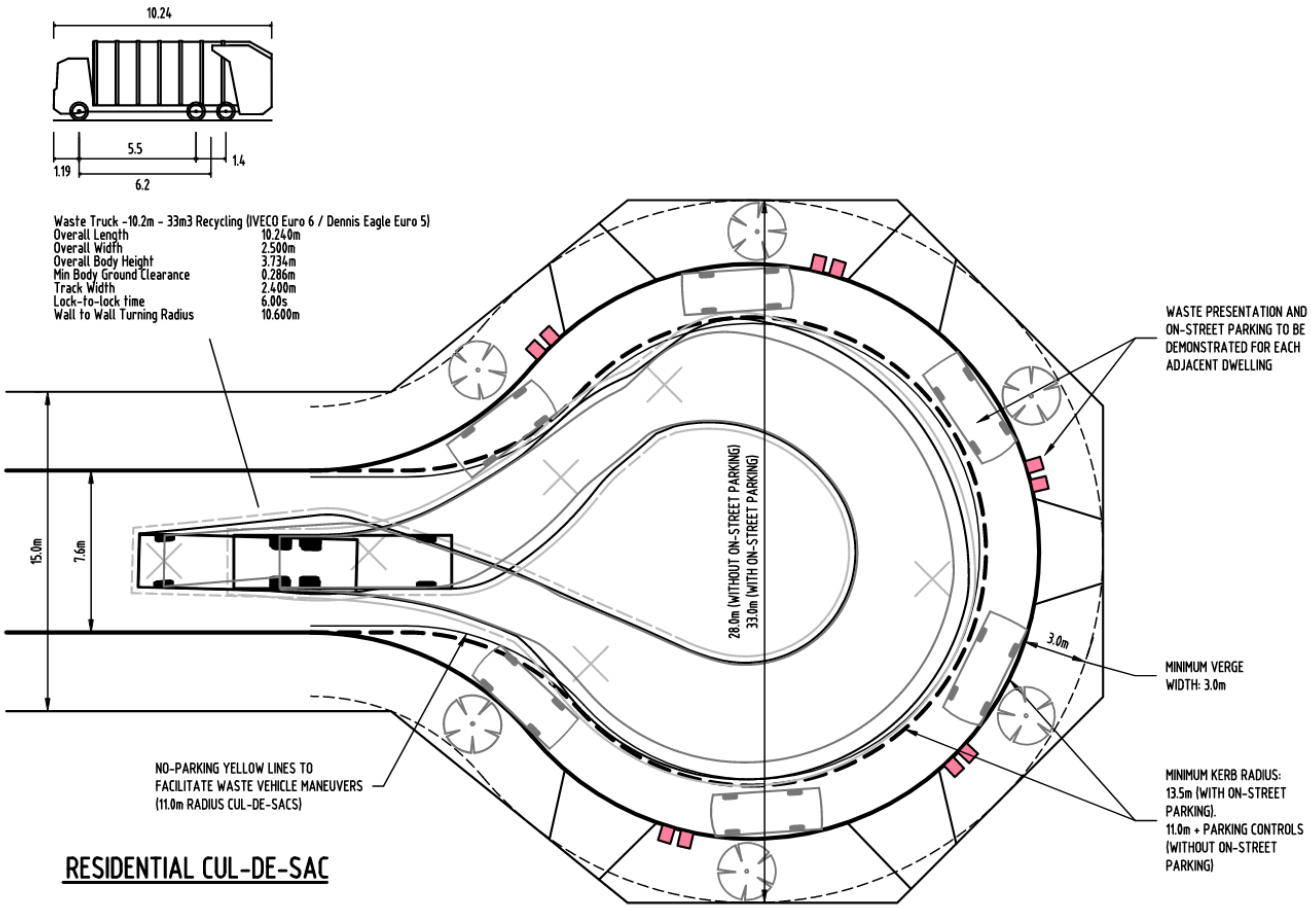
Example 3:

- When planned at the design stage, defined bin pads can help to achieve well-designed and organised bin presentation areas. They also minimise the risk of conflicts with above-ground obstructions and likelihood of bins being incorrectly placed in the carriageway which would obstruct two-way traffic flow:



Example 4:

- Example of a cul-de-sac designed to accommodate waste vehicle collection maneuvers and bin presentation:



RESIDENTIAL CUL-DE-SAC