

IN THE MATTER

**of applications pursuant to the
Resource Management Act 1991**

BY

Foodstuffs North Island Limited

FOR

**Resource consent for the
construction and operation of a new
supermarket with an associated drive
through fuel facility including car
parking and all other enabling works.**

SUPPLEMENTARY STATEMENT OF EVIDENCE (Transportation)

Alastair Black

10 September 2019

INTRODUCTION

1. My name is Alastair James Black. My qualifications and experience are set out in my primary statement of evidence.
2. In preparing this evidence I have reviewed the following information:
 - a. Traffic caucusing notes, 30 July 2019;
 - b. Updated Transport Assessment – Further Information prepared by Traffic Planning Consultants Ltd, 6 August 2019; and
 - c. Updated Site Plans, Drawing A024, dated 8 August 2019

THE REVISED PROPOSAL

3. Based on the revised site plan, I understand that the site will be accessed as follows:
 - a. Left-in access from Te Rapa Road with a deceleration lane provided. The crossing is proposed to be 4.1m wide at the boundary (previously 7.5m wide);
 - b. Left-in and left-out access from Eagle Way. The proposed deceleration lane is 50m long plus taper. The crossing is proposed to be 11m wide at the boundary with a splitter island separating the movements and a solid median on Eagle Way;
 - c. Left-in deceleration lane at the proposed Maui Street extension vehicle crossing accessing the customer car park. The proposed deceleration lane is 35m long plus taper.
4. The proposed mitigation includes:
 - a. Partial signalisation of the Karewa Place/ Wairere Drive intersection to facilitate right-in movements from Wairere Drive - this is to mitigate unacceptable delays that would otherwise result at Te Rapa Road/ Eagle Way/ The Base Parade and Te Rapa Road/ Wairere Drive;
 - b. A solid median island on Eagle Way, approx. 58m long – this is to prevent right-turns out of the site;
 - c. A left-turn deceleration lane on Eagle Way, approx. 60m long (including the taper) – this is to facilitate access to the site;
 - d. A left-turn deceleration lane on Maui Street extension, approx. 30m long – this is to facilitate access to the site;
 - e. A left-turn deceleration lane on Te Rapa Road, approx. 80m long (including the taper) – this is to facilitate access to the site;

- f. Providing a single lane roundabout at the Karewa Place/ Eagle Way/ Maui St intersection, with a second approach lane on Eagle Way for the left-turn into Maui St; and
- g. Providing a remote fuel filling facility in the delivery area to avoid the need for the fuel tanker to access the customer car park.

TRAFFIC MODELLING AND CAUCUSING

- 5. I participated in the caucusing of traffic experts on 23 May 2019. Matters in relation to the VISSIM modelling and caucusing outcomes are addressed by Mr Michael Meister.
- 6. The currently proposed roundabout layout is different to that were circulated by TPC (Todd Langwell, 16 July 2019). The earlier roundabout layout shows a single northbound departure lane, two departure lanes are now proposed. The potential safety effects of the revised site layout were not discussed as part of the caucusing.

ROAD SAFETY AUDIT

- 7. I do not consider that the revised site layout or Designer's responses to the safety audit fully address or resolve the safety concerns raised by the safety auditors because effects on pedestrians and cyclist or safety effects have not been addressed. I discuss specific concerns in the following sections.
- 8. The revised site layout, including the roundabout at the Karewa Place/ Eagle Way/ Maui St intersection and additional slip-lanes, has not been subject to safety audit. I have new safety concerns which are discussed below.

EAGLE WAY/ KAREWA PLACE/ MAUI STREET EXTENSION ROUNDABOUT

- 9. I have safety concerns with the proposed roundabout layout including the introduction of additional conflicts points as the layout includes two departure lanes, a proposed deceleration lane on Maui Street, lack of pedestrian/ cycle facilities, and lack of integration with Couplands. As shown below the proposed roundabout includes two eastbound approach lanes on Eagle Way and two northbound departures lanes on Maui Street. One of these departure lanes is effectively a left-turn deceleration lane into Pak'n Save. The earlier layouts (refer para 6) appeared to show one northbound departure lane.

10. The introduction of the second departure lane and deceleration lane results in additional conflict points at the roundabout exit to Maui Street which I have shown as yellow stars on Figure 1. Figure 2 shows the traffic modelling outputs for the movements at the intersection.

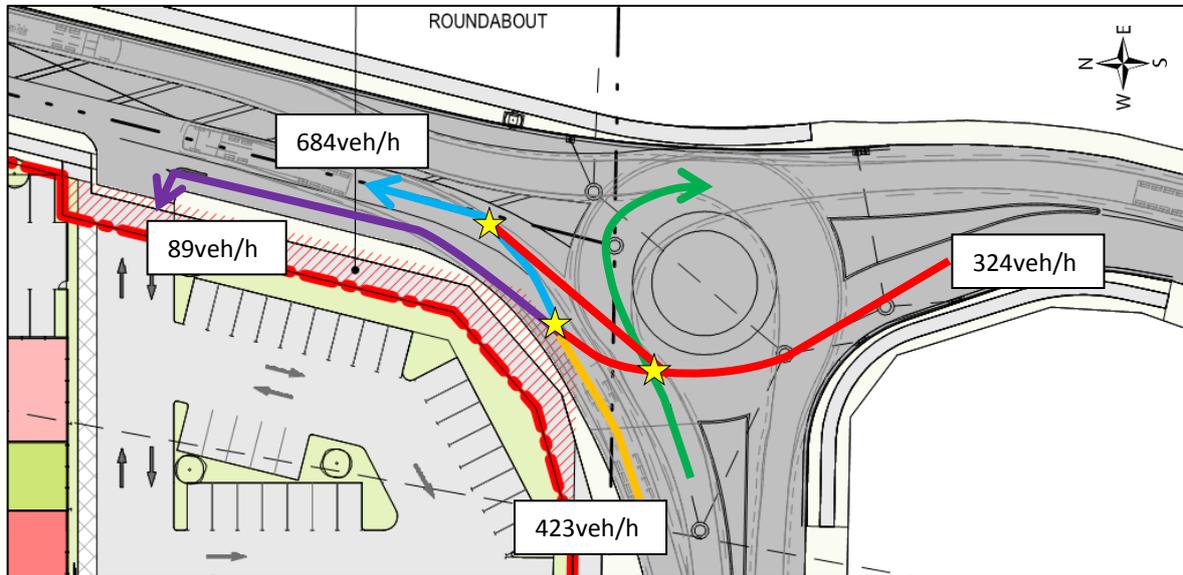


Figure 1: Revised Intersection Layout¹ (Site Plan, 05/12/2018)

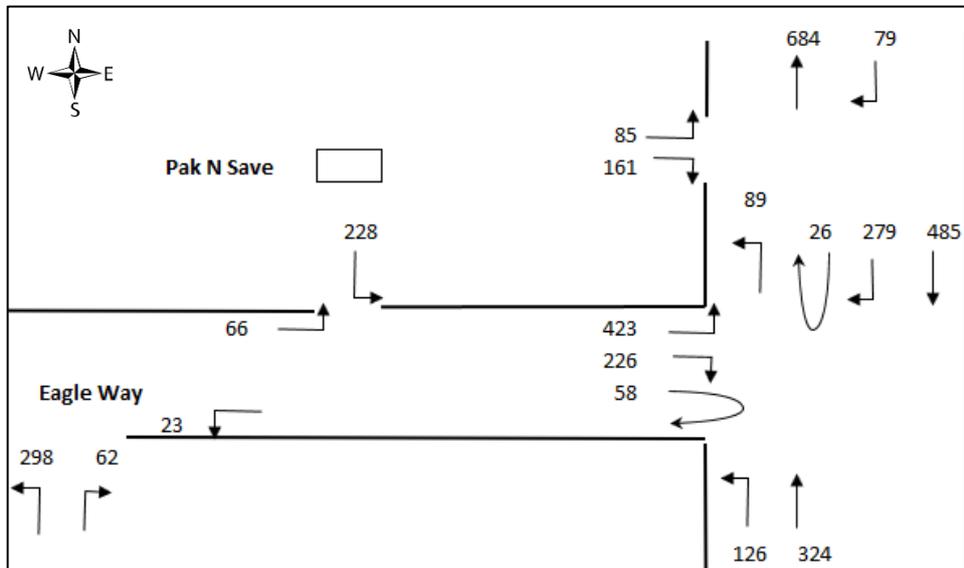


Figure 2: Traffic Volumes (Applicant's trip distribution)

11. As there are multiple departure lanes, I consider there is likely to be confusion on whether northbound vehicles are exiting the roundabout to continue north

¹ Northbound on Maui St: 423 (from Eagle Way) + 324 (from Karewa) PI + 26 (u-turns) – 89 (left entry) = 684veh/h

along Maui Street or turning left into Pak'n Save resulting in an increased risk of crashes occurring.

12. It appears likely that all the traffic turning left from Eagle Way will be continuing north along Maui Street as they have already passed the site entry on Eagle Way. This increases the likelihood of conflict between these turning vehicles and those northbound from Karewa Place slowing to turn left into Pak'n Save.
13. The southbound approach to the roundabout is shown with a flush median. This creates the risk of two lanes forming on this approach which would result in serious safety effects as there is only one circulating lane. Austroads² states that *“The approach treatment (except for small roundabouts on local roads) should include a raised median (or splitter) island on the approach and a kerb along the left side of the approach which, in conjunction with the approach alignment, creates a physical restriction that slows drivers.”* As this is the intersection on a collector road (Karewa Place/ Maui St), I consider that this approach requires a raised splitter island.
14. The caucusing³ concluded that *“Need to have a pedestrian crossing facility on Karewa Place as a means of addressing the consequences of the proposed supermarket to ensure that there are appropriate pedestrian crossing facilities for people to cross Karewa Place”*. The revised layout does not include any pedestrian facilities at the intersection or on Karewa Place.
15. The proposed roundabout layout does not show the location of the exiting vehicle crossing or demonstrate that heavy vehicles can exit from Couplands and navigate the roundabout.
16. Without mitigation to address these issues, I consider that the roundabout is likely to have unacceptable adverse safety effects. While the risk of death or serious injury occurring from vehicle-vehicle conflict is low due to the likely collision speed, the risk is higher for pedestrians and cyclists and the proposed layout introduces additional conflict points increasing the likelihood of crashes occurring.

² Austroads Guide to Road Design, Part 4B: Roundabouts, Section 4.5.1 and Section 4.5.4

³ Caucusing Item 2

17. The potential adverse effects could be mitigated by ensuring that detailed design of the roundabout complies with the relevant Austroads design standards. In my view this should include:
 - a. Removing or shortening the left-turn deceleration lane to reduce driver confusion on the exit from the roundabout and to avoid following vehicles be shadowed (refer paragraphs 35-41 below).
 - b. Providing a solid splitter island on the Maui St approach to the roundabout.
 - c. Maintaining access to the Couplands site.

18. I consider it likely that this mitigation can be accommodated within the area indicated on the site plan.

SITE ACCESS

Site Access – General

19. As stated in my primary statement of evidence⁴, I have safety concerns with the proposed accesses as they are not designed to provide pedestrian priority and a continuous footpath. I consider that design to provide pedestrian priority should be required through a condition of consent and design approval by Council.

Site Access – Te Rapa Road

20. Through the caucusing notes and further information, the Applicant has provided an assessment that demonstrates the need for an access to Te Rapa Road. Based on the information provided in the traffic modelling, I can now support an access to Te Rapa Road provided it meets the appropriate design standards.

21. While I support the revised access arrangements to Te Rapa Road, there is insufficient detail to complete an assessment of the proposed layout and potential effects. No detailed information has been provided to:
 - a. Allow assessment of the deceleration lane against the relevant design standards;
 - b. Confirm that there are continuous pedestrian facilities along Te Rapa Road; and
 - c. Complete an assessment of effects on access to the neighbouring properties.

⁴ SOE of Alastair Black, para 49

22. The deceleration lane appears to be approximately 30m long plus a 50m taper. Austroads Guide to Road Design Part 4a Unsignalised and Signalised Intersections⁵ requires a 70m long deceleration lane (including taper) for a 70km/h design speed. Subject to review of the detailed design, the 80m length of the deceleration lane appears appropriate.
23. The revised layout does not show how the existing shared path will be maintained along Te Rapa Road. It appears that continuing the shared path will require land from the neighbouring property. I consider that the site layout must provide a continuous 3m wide shared path along Te Rapa Road.
24. Without addition information, I consider the proposed layout will result in adverse effects from safety effects on vulnerable road users and impacts on access to the adjacent property that are unacceptable. Further information is required to:
 - a. Assess the impact on access to the neighbouring property; and
 - b. Confirm if a continuous shared path is to be provided along Te Rapa Road.

Site Access – Eagle Way

25. The Eagle Way access has been reduced in width to 8.8m but continues to prioritise vehicle movements and increases the risk of conflict with other traffic, pedestrians and cyclists. It does not provide pedestrian priority or continuous cycle facilities increasing the risk of conflict with vulnerable road users. No additional details on the proposed cycle facilities along Eagle Way are provided.
26. I agree that revisions to the layout of Eagle Way including lengthening the deceleration lane and flush median should reduce confusion for drivers accessing this site and the Countdown site opposite.
27. The revised layout does not address all of my safety concerns⁶. The following concerns have not been addressed:
 - a. Vehicles slowing in the left-turn lane obscuring following vehicles leading to an increase risk of crashes.
 - b. The left-turn deceleration lane is designed to facilitate and prioritise access by left-turning vehicles. I have measured the proposed crossing as 8.8m wide at the property boundary. The proposed design could result

⁵ Austroads Guide to Road Design Part 4a Unsignalised and Signalised Intersections, Table 5.2

⁶ SOE of Alastair Black, para 66

in relatively high-speed movements and does not provide for vulnerable users on the path.

- c. The proposed facilities for cyclists along Eagle Way are unclear.
- d. As a result of the revised layout, there is a risk of queues forming from vehicles turning right-into the fuel facility.

28. The potential adverse effects could be mitigated by:
- a. Constructing an off-road path that separates cyclists from vehicle traffic including appropriate entry and exits. Alternatively, reviewing the lane arrangements and widths on Eagle Way to reduce the number of conflict points and better provide for cyclists.
 - b. Installing signs and markings that clearly identify the fuel facility as one-way (east to west) with no-entry from the Eagle Way access.
 - c. Constructing the site accesses to provide pedestrian priority. This could be required through condition requiring Council review of the detailed design.
29. Without addition mitigation, I consider the proposed layout will result in adverse effects from safety effects on vulnerable road users that are unacceptable. I consider the risk of death or serious injury occurring from vehicle-vehicle conflict at this access is low due to the likely collision speed.

Site Access – Maui Street Extension

30. The 2031 VISSIM model outputs indicate 414veh/h will use the Maui Street access, equivalent to 7 movements/min. The average delays are 114s/veh (left-out) and 129s/veh (right-out).
31. The revised Maui Street access now includes a deceleration lane (refer Figure 1). The earlier site layout (refer Figure 3) was based a priority-controlled intersection that did not include a deceleration lane.

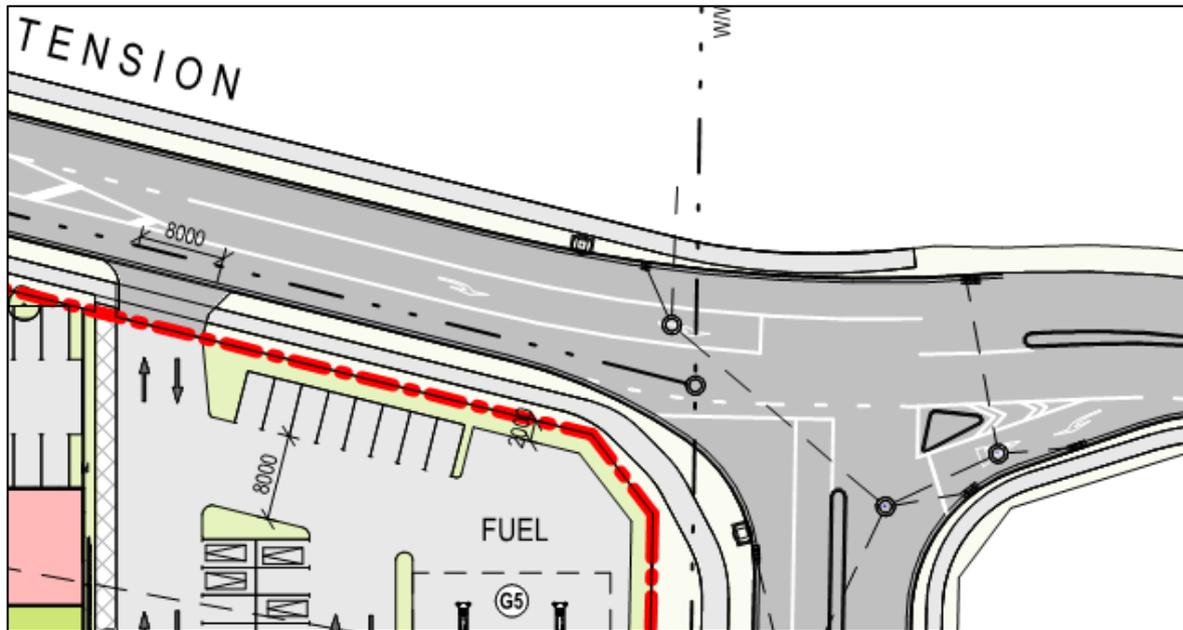


Figure 3: Extract from Previous Layout (Site Plan, 05/12/2018)

32. As stated in my primary statement of evidence⁷, the Maui St access is located close to the proposed roundabout and creates the potential for confusion and crashes, particularly at peak times when there are likely to be southbound queues extending back from the roundabout. The access is located approximately 45m from the proposed limit line. The revised modelling indicates an average right-in queue length of 1m and maximum queue of 26m.
33. The revised layout does not address all of my earlier safety concerns⁸ and new concerns have been identified. I have the following safety concerns which have not been addressed:
- a. Vehicles slowing in the left-turn lane obscuring following vehicles leading to an increase risk of crashes for vehicles turning right-out of Pak'n Save.
 - b. Crashes from vehicles exiting Pak'n Save, waiting in the flush median and merging with southbound traffic.
 - c. Approx 2mins average delay for exiting vehicles which can lead to poor driver behaviour, e.g. turning left-out prior to u-turning elsewhere on Maui St to travel south.
 - d. Unclear whether northbound vehicles are indicating to turn left off the roundabout or turn left into Pak'n Save.

⁷ SOE of Alastair Black, para 69

⁸ SOE of Alastair Black, para 70

34. In my view, the most serious concern is the introduction of the deceleration lane which means that a vehicle turning left will obscure visibility to following vehicles as illustrated in Figure 4. A left-turning vehicle can reduce sight distance to approx 20m, the District Plan requires that 70m is provided at a vehicle crossing to a collector road with a 50km/h speed limit.

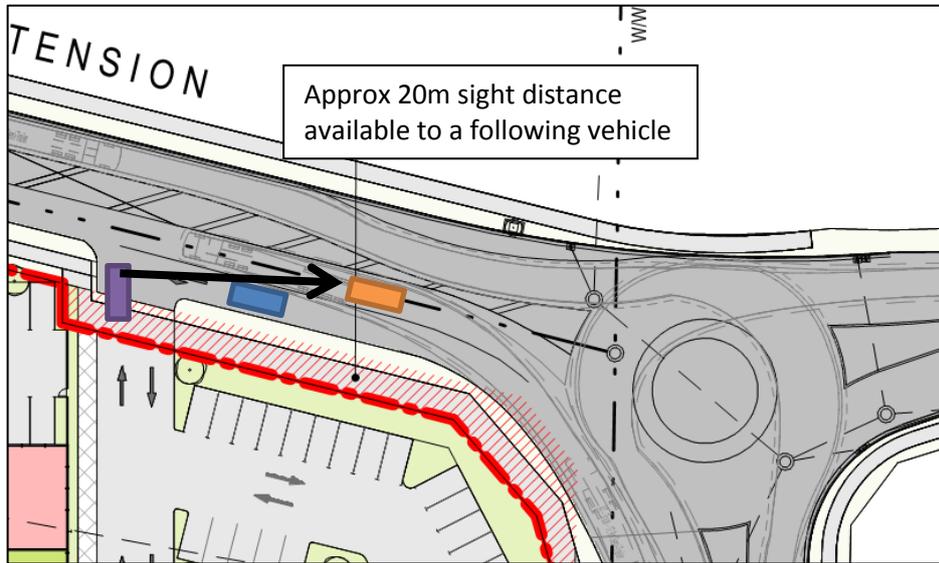


Figure 4: Revised Intersection Layout

35. The risk of a crash from vehicles being obscured is significantly higher at this access when compared to the Eagle Way access as the traffic volumes are higher (161veh/h right-turning conflicting with 684veh/h northbound vehicles) and the Maui St access provides for all movements while the Eagle Way access is limited to left-in and left-out.
36. Without further mitigation, I consider that the proposed access to Maui Street is likely to have unacceptable adverse safety effects. I consider that the potential adverse effects could be mitigated by removing or shortening the left-turn deceleration lane to avoid shadowing of following vehicles.

Site Access – Conclusion

37. Further information is required to assess the potential effects of the revised Te Rapa Road access on the neighbouring properties.
38. Without further mitigation, I consider that the proposed access arrangements are likely to have unacceptable adverse safety effects. If the proposal is approved, I consider that the further mitigation should include:
- a. Removal or shortening of the deceleration lane on Maui Street;

- b. Construction of a left-turn deceleration lane of sufficient length at the Te Rapa Road access.
- c. Constructing all the site accesses to provide pedestrian priority;
- d. A continuous shared path along the Te Rapa Road boundary;
- e. Confirmation of cyclist facilities on Eagle Way, preferably and off-road shared path;
- f. Providing for remote fuel filling in the delivery area; and
- g. Internal signs and markings to clearly identify one-way movement through the fuel facility.

SITE LAYOUT AND PARKING

- 39. The parking layout has been revised to remove the parking spaces closest to the vehicle crossings to Te Rapa Road and Eagle Way. The queuing space to the nearest car park at the Te Rapa Road access has increased to 13m (12m required⁹). The Eagle Way access provides 22m queuing space and 36m required¹⁰. I note that the deceleration lane provides an additional 50m space for queuing before through traffic movements on Eagle Way would be affected. The revised 2031 VISSIM modelling shows a maximum queue length of 21m.
- 40. The proposed number of parking spaces for vehicles and cycles remains compliant with the District Plan standards.

SUMMARY AND CONCLUSION

- 41. In summary, I consider that:
 - a. There are efficiency benefits for the wider transport network from providing the signalised right-turn into Karewa Place. However, I remain concerned that introducing a new intersection onto Wairere Drive will result in adverse safety effects due to the speed environment, close intersection proximity and increased complexity of the road environment. As stated in the caucusing notes, I agree that implementation of raised safety platforms on Wairere Drive at the Avalon Drive and Pukete Road intersections is a matter for the road safety audit team to consider.

⁹ SOE of Alastair Black, para 78

¹⁰ SOE of Alastair Black, para 79

- b. The revised layout introduces new safety concerns at the proposed roundabout and site accesses that have not been addressed. More information is required to assess effects of the proposed Te Rapa Road deceleration lane on neighbouring properties.
 - c. Without further mitigation, I consider that the roundabout and proposed access arrangements are likely to have unacceptable adverse safety effects. I consider it likely that an acceptable single-lane roundabout can be provided within the area indicated on the site plan.
42. For the benefit of the Applicant and Commissioner's I have considered mitigation options that would, if fully implemented, likely address the potential adverse effects to an acceptable level. These mitigation measures are outlined as conditions in Appendix 1.
43. I confirm the conclusion of my primary statement of evidence that without further mitigation the proposed supermarket is likely to have adverse safety effects that are unacceptable and cannot be supported.



Alastair Black

Dated 10 September 2019

APPENDIX 1: SUGGESTED CONDITIONS

If Council decides to approve the application with a roundabout, it should be subject to conditions that require:

1. Construction of the signalised right-turn at Wairere Drive/ Karewa Place including a 60km/h speed limit and construction of a raised safety platform on the eastbound approach.
2. Construction of a single-lane roundabout at the Karewa Place/ Eagle Way/ Maui St intersection in accordance with the Austroads Guide to Design Part 4B Roundabouts.
3. Construction of a pedestrian crossing facility on Karewa Place.
4. Construction of a left-turn deceleration lane of sufficient length at the Te Rapa Road access.
5. Construction of a continuous off-road shared path provided along Te Rapa Road.
6. Construction of a continuous off-road shared path provided along Eagle Way.
7. Constructing all site accesses to provide pedestrian priority and a continuous footpath as illustrated in Waikato Regional Infrastructure Technical Specification (RITS) Figure D3.3.1.
8. Parking restrictions (no stopping lines) on Karewa Place.
9. Remote fuel filling in the delivery area.
10. Internal signs and markings that clearly identify one-way movement through the fuel facility.
11. Detailed design and post-construction safety audits.