



Container Storage Guideline

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1. Introduction

Shipping containers is an essential factor for international trading. As Samoa's economy continues to grow, containerized trade and facilities that support trading, increase in demand and supply. Transporting and storing of shipping containers can have significant transport and environment impacts if adjoin or use transport routes in or near sensitive areas. This guide therefore provides guidance for better practice methods in setting up shipping container storage facilities.

2. Purpose

The purpose of the guideline is to:

- Define shipping container and shipping container storage;
- Provide advice on the location, use, design and operation of shipping container storage;
- Provide guidance of the information that should accompany a development consent application for a shipping container storage; and
- Outline development standards that apply to shipping container storage.

3. Scope

The guide will be applied by PUMA in assessing development consent applications, where the primary purpose for using the land is to store shipping containers. If the primary purpose for which the land is to be used is not to store shipping containers, the definition of shipping container storage does not apply.

The storage of shipping containers on a site does not necessarily mean that the land is being used for 'shipping container storage'. The storage of shipping containers may be ancillary or incidental to another use of the land. It is important to determine the primary use of the land.

4. Key Terminology

Shipping container – is a large, usually rectangular-shaped unit that is used or is capable of being used to carry goods for transport by sea or road.

The most common shipping container transported by sea or road is either 6.1 or 12.2 metres (20 or 40 feet) long by 2.4 metres (8 feet) wide and 2.6 meters (8 feet 6 inches) high. The industry commonly refers to a shipping container as either a TEU (if it is 20 feet long) or a 2TEU (if it is 40 feet long). TEU means Twenty Foot Equivalent Unit.

Shipping container storage - is defined as land used to store shipping containers. It may include the cleaning, repair, servicing, painting or fumigation of the shipping container. The shipping containers may be empty or full.

5. Objectives

The objectives of this guide are to:

- Ensure shipping container storage facilities are provided in a safe and efficient manner;
- Ensure that application of consistent provisions and principles for the assessment of shipping container storage facilities;
- Encourage the provision of shipping container storage facilities with minimal impact on the amenity of the subject area and surrounds, particularly sensitive areas including residential land use; and
- Encourage convenient and safe access to storage facilities with minimal impact on the transportation network.

6. Development Consent Application Requirements

The following information is required as part of any application for the use of land primarily for shipping container storage:

- Site plan showing:
 - Full site area;
 - Adjoining roads;
 - Surrounding land uses;
 - Distance from sensitive uses, such as housing;
 - Layout of existing and proposed buildings and works;
 - Proposed landscape areas;
 - Crossovers, driveways and vehicle parking, truck queuing and loading areas; and
 - Anticipated number of containers to be stored on site.
- Survey Plan showing boundaries and dimensions of the site;
- Consent from land owner; and
- Other information as requested by the Agency.

7. Assessment Criteria

The following principles will form the basis of consideration and assessment of applications for shipping container storage facilities in Samoa:

- Shipping container storage sites should have adequate size to accommodate storing, vehicle manoeuvring and landscaping to minimize any amenity impacts; and
- Transporting of shipping containers between sites should not hinder traffic movement.

To ensure the appropriate application of the above principles is achieved, the following matters will be generally taken into consideration in the assessment of application for shipping container storage:

7.1 Location

Shipping containers are unloaded at ports and moved to dispersed sites for unpacking, cleaning, repair and servicing, storage, repacking and export. The movement of shipping containers between sites is predominantly by individual truck trips. This tends to generate high volumes and frequency of truck traffic which in turn impacts on surrounding land uses. The impacts may include:

- Vibration due to heavy or poorly secured vehicle loads;
- Truck queuing on roads;
- Noise from heavy vehicles; and

- Reduce traffic and pedestrian safety.

The severity of these impacts varies according to the sensitivity of the location, the volume and speed of vehicles, the standard of road surface and the time of day.

To avoid or minimize these impacts, an application for a container shipping storage should be located to:

- Have safe and convenient access to a road that have little or no residential development along them.
- Container trucks, forklifts, mobile cranes and any other heavy duty vehicle use in transporting container from one area to another must comply with the Transport Control Board, *Road Traffic Order 1984*.
- Avoid congestion along roads and at road intersections.

Land use surrounding the site should be compatible industrial uses or other uses that will not be adversely affected by shipping container handling operations. Sites adjoining or near residential or other sensitive uses should be avoided.

7.2 Site size

The site should be of an adequate size and dimensions to accommodate the proposed activities and any measures needed to avoid or minimize off-site impacts.

To determine whether the size of a site is adequate, the following matters should be considered:

- The capacity for trucks to queue on-site;
- The provision of space for trucks to safely maneuver on-site and enter and exit the site in a forward direction;
- Whether the expected maximum volume of shipping containers can be stored on-site;
- Where and how high the shipping containers will be stacked on-site;
- Whether noise from activities such as repair and servicing can be contained on-site;
- Whether airborne particles from repair and painting, and dust from vehicle movements, can be contained on-site;
- The adequacy of landscape areas to effectively screen storage areas from view and enhance to the appearance of the site; and
- The provision and location of on-site waste storage areas.

7.3 Site Layout

- Shipping container storage sites layout should provide for safe and efficient vehicle maneuvering, access and egress. All vehicles should be able to enter and exit the site in a forward direction;
- Parking areas for trucks should be separated from car parking spaces;
- At times of peak delivery periods internal vehicle access lanes should be arranged to allow more room for queue up trucks;
- Container storage areas should be set back from road boundaries and screened or landscaped to avoid or minimize any adverse impacts on the streetscape;
- Lighting should be carefully located and baffled to ensure that all public areas are well lit at night without causing nuisance to adjoining land use; and
- Landscaping should be provided along site boundaries and be of a sufficient width to soften appearance of the area from view.

7.4 Buildings

- The scale and height of buildings should have regard to the scale and height of buildings on adjoining sites; and
- Buildings and car parking areas should be designed to address the street and minimize the use of front part of the site for storage.

7.5 Stacking Containers

- All containers stored and stack on site must have regards to the scale and height of nearby buildings but must not exceed the height of three (3) containers; and
- Located at the rear of the site where possible, unless the rear of the site adjoins a sensitive use.

Given the method of stacking containers has potential risk, therefore all applicants should consider such risk when planning the height and designing the layout of the site. Potential risks include the falling of containers from strong wind speeds, ground surface subsidence, vibrations caused by on site vehicle movements as well as inadequate spacing between stacks for forklift operations.

The following are suggested techniques for reducing the risk:

- Aligning the longitudinal axis of shipping containers with the predominant wind direction;
- Providing sufficient separation distances between shipping container stacks and vehicles access lanes, residential properties, on site offices, amenities and work areas and work areas on adjoining sites based on the standard height of the stack (3 containers);
- Stacking containers in a pyramid formation where practicable;
- Provide sufficient space between stacks for forklifts, mobile crane and other vehicles to manoeuvre safely; and
- Ensuring stack containers on the area are level, well compacted and durable.

7.6 Landscaping and fencing

- The types of landscaping and planting provided should have regard to the streetscape character, the size of the site, height and scale of buildings on or near the site;
- Landscape areas used to screen or soften the appearance of shipping container stacks or waste storage areas should be of sufficient dimensions to accommodate effective screen planting, such as combinations of dense shrubs and high branching taller trees; and
- Perimeter fencing should be integrated into the landscape design for the site.

7.7 Noise

Shipping container storage areas produce noise due to mechanical equipment and trucks moving, loading and unloading and transporting containers.

- Locating noise producing activities well within the area and sound baffling noisy equipment
- In the case where site adjoins sensitive use (e.g. residential), operational hours for trucks and forklifts must be limited from 8am – 5pm to avoid nuisance at night.

7.8 Dust and Dirt

- Areas used for truck and car vehicle movements and parking should be paved or construct with other durable materials;
- To minimize creation of dust and mud on site, it should be washed every end of the week; and
- Provide appropriate methods to avoid soil and dust being transfer onto road such as wheel wash equipment, wheel grate and concrete crossovers.

7.9 Operations

If activities such as container cleaning, repairing and servicing are intended to be conducted on site, it must adhere and provide the following:

- Wash bay must be provided and concrete or paved with durable materials;
- Waste water from containers and washed vehicle to be properly drain into public drain;
- Shipping containers and vehicles must be washed only in the wash bay; and
- Repairing and servicing of containers must take place in workshop within the site.

8. References

Documents and policies referenced in the preparation of this guidance note include:

- Victoria Department of Sustainability and Environment, *Victoria Planning Provisions Practice Notes – Shipping Container Storage*.
- Victoria Department of Sustainability and Environment, *Particular Provisions: Clause 52.33 – Shipping Container Storage*.
- Catawba County Planning, Parks and Development, n.d, *Shipping Container and Open Storage Guidelines*, view 27 August 2007
<<http://www.catawbacountync.gov/depts/planning/udo/OpenStorage.pdf>>
- MetroPort Inland Port, New Zealand, n.d, view 27 August 2007
<http://www.unescap.org/ttdw/Publications/TIS_pubs/pub_2299/pub_2299_ch5.pdf>