



Transport for NSW

Responses to post-hearing questions

Public Accounts Committee

**EXAMINATION OF THE AUDITOR GENERAL'S
PERFORMANCE AUDIT REPORTS
AUGUST 2019 – JUNE 2020
TRAIN STATION CROWDING**

Hearing Date – 22 November 2021

QUESTIONS ON NOTICE

QUESTION:

1. Mr RYAN PARK: Yes. Ten or 15 years ago we established the Sunday Funday, or whatever it was, because there was capacity moving around on a Sunday and it was an opportunity to get people off roads and onto public transport cheaply and get them used to it, so it was a way maybe of transferring over for their daily commute. I want to know if the Government is looking at anything to try to increase that activity while we have those services.

ANSWER:

The COVID-19 pandemic and associated Public Health Orders created a need for customers to physically distance on public transport. In July 2020, Transport for NSW implemented fare changes to help spread customer demand and reduce crowding, including the expansion of peak windows, off peak pricing for buses and light rail and the July 2020 introduction of the \$8.15 weekend and public holiday day cap.

The need for physical distancing is likely to remain in the near future, and Transport for NSW will continue to monitor travel trends and review the effectiveness of the pricing measures as NSW emerges from lockdown.

QUESTION:

2. Mr LEE EVANS: In my electorate, at Menai and Bangor there is a bus that comes through every 15 minutes. It eventually goes to Parramatta, but basically every 15 minutes there is a bus coming to or leaving Sutherland station. I note that coming into Sutherland there is barely anyone on the buses in the morning and also leaving the station there is barely anyone on the buses in the afternoon. It is a carrot-and-stick approach; I know it is about changing people's behaviour. But they drive from four kilometres away to park at Sutherland, for the sake of convenience. Ultimately we have to promote that the bus runs every 15 minutes throughout the day and that people at Bangor or Menai will not be inconvenienced by catching a bus to go to or from work. Has there been a promotion related to that to encourage people to use that second mode?

ANSWER:

Patronage has declined on the M92 bus service due to the reduction in public transport demand related to the COVID-19 pandemic and the associated Public Health Orders. However, this service continues to provide a valuable connection for commuters travelling between locations, including Menai and Bangor, and Sutherland Station.

This bus service will be promoted in 2022, when overall public transport demand is due to increase.

SUPPLEMENTARY QUESTIONS

Recommendation 3 – By December 2020, Sydney Trains should develop a policy for customer management plans. The policy should include:

- a process for identifying stations requiring a customer management plan
- essential elements of a customer management plan
- requirements for the review and approval of customer management plans
- a requirement to centrally store all customer management plans.

QUESTION:

1. The response to Recommendation 3 indicates that a Customer Management Plan framework has been developed.

- Can you provide the Committee with a copy of that framework?
- How does the framework address the elements of the recommendation and what specific triggers will prompt the creation or update of a Customer Management Plan?

ANSWER:

Sydney Trains Customer Management Plan Framework is attached.

The plan addresses the recommendation as well as what prompts the creation or update of a Customer Management Plan.

Recommendation 5 – By December 2020, Transport for NSW should evaluate the Wayfinding strategy to determine the impact of the program and to identify any lessons learnt for future wayfinding strategies.

QUESTION:

2. The Audit Report recommended that Transport for NSW should evaluate the Wayfinding strategy to determine the impact of the program and to identify any lessons learnt for future wayfinding strategies.

- Do you plan to pursue this recommendation?
- How were the lessons learnt from the evaluation incorporated in the Wayfinding project at Central Station and other projects?

ANSWER:

Yes, the recommendation has been adopted and completed.

RESPONSES TO POST-HEARING QUESTIONS

As part of the project conducted at Central Station, operational and key subject matter experts identified the need for better local area connection information within the station, to assist customers with navigation. Wayfinding signage continues to be updated with this in mind. Any new guidelines will incorporate these learnings for the benefit of other projects.



Customer Management Plan Framework Operational Readiness

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1. Document Ownership Information

Project Director	Rob Austin	Director Delivery Support, Customer Operations
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2. Document Name and Version Control

Document Name and Location		Customer Management Plan Framework - MS Teams : Customer Readiness/Customer Management Plans	
Version	Date	Author	Reason for Issue / Changes Included
1.0	07/12/2020	Emad Rafla	Initial version.

3. Overview

3.1 Purpose of Document

The purpose of this document is to guide the development and governance of station Customer Management Plans (CMPs).

The document:

- Provides a high level process for the development of a CMP
- Provides guidelines on when a CMP is required and when it should be reviewed and updated
- Identifies who is to be involved in the development of a CMP and their role
- Discusses the thresholds that would trigger interventions by staff
- Outlines the approval process for a CMP

The document does not propose solutions. Rather, it acts as a template for the items to be considered when creating or updating a CMP and provides guidance around governance.

3.2 Background

The NSW Audit Office report into Train Station Crowding¹ was delivered in response to a noticeable increase in crowding at Sydney Trains' busiest stations, concerns for customer safety and a realisation that this would get worse should population and patronage grow in line with forecasts.²

The report contained nine key findings and made seven recommendations, two of which related to Customer Management Plans (CMPs).

The two CMP-related recommendations said that Sydney Trains should:

- Develop a policy for customer management plans, which should include:
 - A process for identifying stations requiring a customer management plan;
 - Essential elements of a customer management plan;
 - Requirements for the review and approval of customer management plans; and
 - The requirement to centrally store all customer management plans.
- Work with the Airport Link Company to develop a more comprehensive crowd management strategy for Airport Link Stations that includes:
 - A crowd management plan for each station, with clearly described roles and responsibilities; and
 - A service level indicator or KPI relating to station crowding at Airport Link Stations.

In response, Sydney Trains identified and agreed to deliver the following action plans:

- Engage with Sydney Trains Safety to develop a CMP policy that will articulate:
 - The threshold that will require a station to produce a CMP
 - The minimum requirements for a CMP, i.e. gate line directions, location of staff and indicators for staff to initiate interventions.
 - The approvals required and the approach for storage of customer management plans.
 - A process for review that takes into account customer feedback and network performance.
- Sydney Trains will work with Airport Link and support them by providing templates to develop:
 - Crowd management plans that are in line with Sydney Trains policy and incorporate all the same minimum requirements.

¹ NSW Auditor-General's Report to Parliament, Train Station Crowding, Audit Office of NSW, April 2020

² In addition to the risk to safety, crowded platforms impact Sydney Trains' ability to keep trains running to time, with consequential impacts to network performance which, without appropriate action, will also compound as patronage increases.

- An appropriate measure that is in line with the same measurements as Sydney Trains to measure crowding performance.

These action plans led to the creation of this CMP Framework, to support a comprehensive and consistent approach to the development, review and update, and governance of CMPs to ensure the safety and wellbeing of our customers.

3.3 Introduction

A Customer Management Plan (CMP) is a document which defines how a station should operate in one or more scenarios. It defines how the station team will use resources to respond to challenges and manage the safety of customers.

Note: If required, the Customer Management Plan will be used in conjunction with the Incident Management Framework - <http://intranet.sydneytrains.nsw.gov.au/branches/seqr/safety-standards/incident-management-framework> and the Site Incident Management Plan - <http://sms.sydneytrains.nsw.gov.au/site-incident-management-plans-simp>

Depending on the station environment and operation, different CMPs may need to be developed to define how to respond to the different operational challenges that present.

Generally, a CMP uses text, illustrative maps and diagrams to explain the operational challenges and the strategies to deal with them.

A CMP could be developed for different situations and scenarios. This could include:

- BAU operation during AM Peak
- BAU operation during Off Peak
- BAU operation during PM Peak
- Special events
- Service disruption scenarios requiring the station to operate in a degraded mode
- Changed operations due to equipment failure, e.g. escalator failure.
- Changes to infrastructure affecting the station operation
- Major maintenance work affecting the station operation
- Physical distancing

A CMP will include but not be limited to descriptions of the:

3.3.1 Station Environment and Operation

This information would include e.g.

- Station access point and Opal gate configurations;
- Patronage figures and details of customer flows;
- Vertical transport and how it is setup during the different peak periods;
- Details of the platforms, including the most crowded, which could differ between peak periods;
- Busiest times within the peak and the most crowded services;
- Customer behaviour and crowding pockets on the platforms; and
- Any other important information to help staff understand the specifics of the environment or operation.

3.3.2 CMP Operational Scenarios and Challenges

This information explains the operational scenarios and challenges for which the CMP is being developed.

It is important to provide details of the peak period, the targeted platform, expected crowd numbers, and any pinch points and bottle necks. It may also describes the potential risks and issues if nothing is done to mitigate those risks and issues.

3.3.3 Actions, including Management Plans

This information clearly describes the action plans, including:

- The triggers for moving from BAU to degraded mode operation.
- Who is responsible for making and communicating the decision.
- How to redeploy the staff and what are the required duties for each one.
- How to regulate the influx of customers entering the station.
- Whether there is a requirement to establish corralling areas.
- What vertical transport and Opal gate configurations will be implemented and who will execute the changes.
- How to control access to the platforms and what equipment is to be used.

4. Governance for Customer Management Plans (CMPs)

4.1 When is a CMP required?

The station management team (CAM and SDMs) will determine the need for a CMP.

The following requirements are to be referred to by the station team when determining the need for a CMP:

- **Overcrowding:** CMPs will highlight as a Fruin Level of Service the maximum number of customers allowed on a platform or concourse and the intermediary thresholds at which interventions are required to avoid the maximum number being breached. For example, during peak periods the threshold for a platform might be set to reflect a maximum customer density equivalent to Fruin Level of Service C (C-midpoint \equiv 1.3 customers per square metre)³, noting that any such measure must also align with the Fire & Life Safety (F&LS) evacuation thresholds. (For a quantitative measure of crowding, refer to *Appendix A – Fruin Levels of Service*.)
- **Restricted Customer Flow:** If customer flow obstructions or bottlenecks are observed, for example around a stair or escalator landing or close to indicators.
- **Cross-flow:** If customers are moving in conflicting directions within a confined area and there is potential risk of customer injury.
- **Timetable Changes:** Timetable changes could increase crowding on platforms or customer interchange between platforms.
- **Degraded Mode Scenarios:** These may cause overcrowding, restriction to customer flow or cross-flow, which may cause customer injury or put customers at risk of harm. At some stations, some degraded mode scenarios may also necessitate the early termination of services and the provision of replacement buses.
- **Station Upgrade:** Changes to the station infrastructure which may reduce the customer accessible areas resulting in overcrowding or restricted customer flow.
- **Major Maintenance Work:** Such work may see the decommissioning of station facilities such as lifts or escalators and impact the customer flow and crowding.
- **Station Classification:** If the station is classified as “City” (Global/Regional) or “Major” as per the Station Classification Scheme and CityRail Station Classification documents.
Please refer to Appendix C “Station Classification Scheme” and Appendix D “CityRail Station Classification”
- **Large Station:** If the station is classified as “Large” as per the classification in the Fire and Evacuation Training document.
Please refer to Appendix E “Fire and Evacuation Training – Railcorp framework”
- If the station does not meet any of the above requirements but the management team still require a CMP, a request is to be made to the Director Delivery Support, Service Experience Division with the reasons for the CMP. The request will be assessed and a determination will be made.

4.2 When is a CMP to be reviewed or updated?

CMPs are live documents and must be reviewed and if necessary updated to reflect any consequential changes, e.g. changes to the station environment or when new timetables are implemented.

In addition, they will be reviewed annually to take account of other changes that could drive an update, e.g. patronage growth. This annual review will align with the annual review of the station Site Incident Management Plans (SIMPs).

The Customer Readiness team is the custodian of the CMPs. As such, should a need to change a CMP be identified, the person or team requesting the change must in the first instance liaise with Director Delivery Support.

³ Figure taken from Sydney Trains’ Business Requirements Specification for the 2017 Timetable.

The following is the governance process for reviewing and updating a CMP.

- **CMP Review Triggers:** A CMP should be reviewed and where necessary updated if:
 - Scheduled yearly review is due
 - Increasing patronage impacting safety and/or causing trains to over dwell
 - Timetable changes
 - Other degraded mode scenarios are required
 - Station upgrade and infrastructure changes
 - Major maintenance work impacting customer operation
 - Safety action requiring to change the CMP
 - Changes to roles, procedures or regulation which impact the CMP
 - Request is made by the staff to improve the CMP
 - New challenge arising and impacting the station operation
- **Coordinate Scheduled CMP Reviews:** The Customer Readiness team will be responsible for coordinating the scheduled yearly reviews, aligned to the annual review of station SIMPs. The following steps will be followed:
 - The Customer Readiness team will notify the CAM of the need to review the CMP 30 days before the due date.
 - The CAM is to review the CMP to make sure the content remains suitable for the current station operational environment and compliant to all applicable regulation.
 - **If changes are not required:**
 - Customer Readiness will update the version number and version control information to reflect “*reviewed but no change*” in the Station SharePoint repository.
 - **If changes are required:**
 - The CAM will contact Director Delivery Support requesting a change, see **Request to Change an Existing CMP**, below.
- **Request to Change an Existing CMP:** If there is a need to update or modify the CMP:
 - The person making the change request – typically the CAM, but a change could also be requested by e.g. Safety following a review of injury data – will email Director Delivery Support requesting a change with the reason for the change and any supporting information.
 - Director Delivery Support will have the Customer Readiness team work with the CAM to review the request to confirm the need for change.
 - **If request is rejected:**
 - Director Delivery Support will document the review decision and the reasons for not proceeding and will notify the requestor of the outcome.
 - **If request is accepted:**
 - Director Delivery Support will determine whether the requested change is minor or major (*see the Guidelines for minor and major revisions section, below*).
 - **For minor changes**, Customer Readiness will:
 1. Create a new draft of the CMP, incrementing the version number to reflect a major or minor change.
 2. Update the CMP and send the draft for endorsement by the Safety Professional and Director Service Delivery.

3. Send final CMP for approval by the CAM.
 4. Upload the approved version into the Station SharePoint site, make available on the MyStation application.
 5. Notify the CAM so they can brief the affected station staff.
- **For major changes**, Customer Readiness will:
 1. Liaise with the CAM to form a working group, see §4.3, *who is to be involved in the development, review or update of a CMP*, below.
 2. Through the working group, identify the challenges and define the action plan to manage, see §5.3.2, *Design & Action Plan*, below.
 3. Obtain endorsements and approvals from stakeholders, see §4.4, *Who is to endorse and approve a CMP?*, below
 - **Guidelines for minor and major revisions**
 - **Minor revisions** (i.e. version 1.1 becomes 1.2) include:
 - Technical editing, such as correcting spelling or grammar mistakes, fixing broken hyperlinks and updating references.
 - Clarifying process requirements that don't require changes to the activities performed or responsibilities.
 - **Major revisions** (i.e. version 1.0 becomes 2.0) include:
 - Changes to roles, procedures and regulations
 - Removal of requirements or activities from a process,
 - Changes to the sequence of activities in a process,
 - Changes to the responsibility for the performance of an activity, and
 - The need for additional training of staff involved in the process.

4.3 Who is to be involved in the development, review or update of a CMP?

The Customer Area Manager (CAM) will engage the Customer Readiness team who will establish a working group consisting of the following participants, providing different subject matter expertise:

Stakeholder	Role
Customer Readiness team	CMP creation/update coordination
Customer Area Manager	CMP implementation
Station Staff	Station operations SME
Health and Safety Representatives	Station health and safety SME
Station Customer and Operations Officer (SCOO)	Station operations SME
Safety Professional	Safety and risk advisor
Human Factors Specialist	Human factors and risk advisor
Wayfinding	Signage plan
Finance Business Partner	Approval of additional costs

4.4 Who is to endorse and approve a CMP?

Once the CMP is complete, the following endorsements and approval will be sought:

- **Endorsement**
 - Director Delivery Support
 - Deputy Executive Director, Customer Delivery
 - Safety Professional
- **Approval**
 - Customer Area Manager

4.5 Where is a CMP to be stored?

Approved CMPs will be published on the Station SharePoint site and pushed to the MyStation application, for ready access by our frontline people.

5. Developing a Customer Management Plan (CMP)

5.1 Key Challenges for CMPs

Key Challenge	Description
Crowding	<p>As the number of people in a space increases, customers have less space to move or stand and the customer experienced is diminished – refer to <i>Appendix A – Fruin Levels of Service for a quantitative measure of crowding</i>.</p> <p>As the number of people on a platform reaches capacity, safety is diminished with an increased risk of customers falling on track or suffering medical episodes (e.g. fainting), and trains slow down on approach and the time required for customers to alight from and board a service increases, potentially resulting in delays to services.</p>
Interchange	Interchange locations are those stations in the network where customers can change from one rail line to another. At very busy interchange locations, the number of customers interchanging has the potential to cause an increase in slips, trips and falls as well as to cause delays to services.
Customer Flow	Crowding can be detrimentally impacted by restricted flow at locations such as Opal gate lines and landing areas of escalators and stairs. It can also be impacted adversely by cross-flow caused by customers moving through the same area in conflicting directions.
Opal Gate Lines	Crowding at some stations is increased by insufficient numbers of Opal gates, inefficient gate layout and/or sub-optimal configuration. Customers attempting to exit a station are forced to queue on the paid concourse leading to crowding in the paid area and/or impeding the flow of customers entering or interchanging, in some cases resulting in collisions and potentially injuries.
Customer Behaviour	There are situations where customer behaviour risks injuries to self or others and can cause train delays. The most significant of these is where customers rush towards closing train doors or attempt to board before customers have finished alighting. In either case, a delay to train departure can result in a potentially dangerous increase in numbers of customers on the platform ahead of the next service arriving.

5.2 Factors Influencing a CMP

Many factors can influence the development of a CMP and may differ from station to station. Understanding these factors and their impacts will help shape the action plan to the operational challenges facing our frontline people.

Typically when formulating a CMP, the approach is to work backwards from the platform, through the paid area, the unpaid area to the station or precinct entrances, and some of the factors may include, but are not limited to:

5.2.1 Station Platforms

Factors relating to station platforms include, but are not limited to:

- **Number of platforms and the different train lines operating from those platforms:** Some platforms support services from multiple train lines and delays to services on one line can result in a significant build-up of crowds on the platform and the need to temporarily close the platform, impact services on the other lines.

- **Platform access points and their locations:** Platforms can be accessed from a concourse, via overhead or underground walkways, or straight from the street and a platform can have one or many access points, which will impact the way customers are distributed on the platform.
- **Platform vertical transport:** The number of stairs, escalators and lifts servicing a platform will dictate the number of resources required to control access to the platform. For example, to prevent customers from accessing the platform, while a resource would be required to close and police stairs leading to a platform, a resource would likely not be required to police an escalator whose direction is reversed.
- **Platform shape, size and capacity:** The capacity of a platform – the number of customers that can be safely accommodated on the platform – depends on the type (wing or island) and size of the platform. Other considerations to determining a platform's capacity are the Site Incident Management Plan (SIMP) and Fire & Life Safety (F&LS) requirements – importantly, platform and concourse occupancy thresholds defined in CMPs must not breach limits specified in F&LS requirements. (For a quantitative measure of crowding, refer to *Appendix A – Fruin Levels of Service*.)
- **Customer targeted platform(s):** Customers target different platforms in the AM peak versus the PM peak. For example, in the AM peak customers typically target platforms with services heading into the City while in the PM peak they target platforms with services to the suburbs.

5.2.2 Station Layouts

Some station layouts provide opportunities to help deal with the challenges crowds at stations present. Unfortunately, the layouts at others stations can hinder attempts to manage crowds. Factors relating to the station layout include, but are not limited to:

- **Station design:** Typically station designs and layouts differ, present their own challenges and require their own unique action plan. Managing the flow of customers accessing platforms directly from the streets is very different to that at stations where customers access the platforms via overhead or underground walkways. Also, managing customers at a station fitted with Opal gates is different to managing those at a station with Opal readers.
- **Concourse design and space:** The size and shape of paid and unpaid concourse areas, the number and location of Opal gates and the facilities and amenities in the concourse will need to be studied to understand the challenges they present and the action plan that will be required to address those challenges.
- **Location and number of station entries:** Some stations in the Sydney Trains network, such as Town Hall, Wynyard and Parramatta, have entrances and concourse areas connected to other buildings, shopping malls and/or entities. Again, these will need to be studied to understand the impacts – positive and negative – this can have on crowding and to understand how to communicate effectively with their management when initiative parts of a CMP which rely on collaboration by and/or impact on those entities.

5.2.3 Customer Corraling Areas

When crowds build during service disruptions or degraded mode operation, it may be necessary to create corraling areas to hold customers in certain locations in order to prevent crowding in other areas and/or to mitigate the potential risk of injuries.

Depending on the station design and layout, customer corraling areas could be created in, but are not limited to:

- **The paid concourse:** to limit access to already crowded platforms by customers entering or interchanging at the station;
- **The unpaid concourse:** to limit access to an already crowded paid concourse (if there is a paid concourse) or to already crowded platforms (if there isn't a paid concourse); and/or
- **Outside the station:** to control access to an already crowded station.

When determining the feasibility of creating customer corraling areas, in addition to deciding on the location, consideration should be given to the equipment required to form the corraling area, such as barricades, and the availability of staff to install and manage the corraling areas.

5.2.4 Station Resources and Staffing Levels

The effectiveness of a CMP relies on how our people are utilised, their level of training and their ability to quickly switch from BAU to degraded mode operation.

During planning, it is important to identify which roles must continue to perform their assigned duties and which roles can be redirected to perform other duties. Consideration should also be given to the availability of staff to perform the tasks required to transition from BAU to degraded mode operation.

In order to ensure a smooth transition and eliminate confusion, it is essential to clearly explain what is required of each role, pre-, during and post transition.

5.2.5 Equipment

The following equipment is typically utilised to be able to effectively manage a station as part of a CMP:

- Digital signs (where available)
- Visual management screens
- Directional signs
- Sign frames for corflute signs/porters, cable ties and other sign fixing tools
- Barricading
- Portable PA systems and/or Mobile PA
- 2-way radios

It is important that a station regularly checks and maintains its equipment.

5.2.6 Availability of Alternative Modes of Transport

An option during degraded mode working is to steer customers to other modes of transport, such as Buses, Metro, Light Rail and Ferry, so it is important to identify alternative modes and services. It will also help to have draft announcement scripts to be used by our frontline people to inform and direct customers wishing to use alternative transport modes.

5.3 CMP Creation Process

The following is the recommended process for the creation of station Customer Management Plans (CMP). As every station has its unique operational environment, consideration should be given to all or some of the steps in the following process subject to the relevance of the steps to their station.

5.3.1 Initiation

- **Create Working Group:** As described in §4.3, *Who is to be involved in the development, review or update of a CMP?*, the CAM will engage the Customer Readiness team who will establish a working group consisting experienced Station Duty Managers, HSRs and SCOOs, Safety and Human Factors Professionals and Wayfinding.
- **Collect Supporting Data:** Collect and share relevant data regarding station patronage, Opal gates and/or readers' usage, platform trains per hour, train loading and any other information to help in providing an accurate description of the station operational environment.
- **Obtain Station Diagram:** Obtain clear and updated diagrams and plans for the station concourse and platforms to use them for the CMP.
- **Current BAU Challenges:** Discuss with the working group and describe the current station operation challenges facing the team during the different peak periods.
- **Degraded Mode Challenges:** Discuss and identify with the working group the most common and challenging degraded mode scenarios.

5.3.2 Design & Action Plan

- **Identifying The CMP Challenges:** Using the “**Key Challenges for CMPs**” as a guideline, clearly describe and illustrate on the diagrams how each key challenge impacts the station environment and whether it presents a challenge.
- **Defining The CMP Challenges:** Considering the “**Factors Influencing a CMP**” as a guideline, clearly *describe* and illustrate on the diagrams how each factor is/will influence the strategy of managing and dealing with those challenges.
- **Management Strategy:** Brainstorm for a comprehensive customer management strategy to effectively operate the station and control crowding on the platforms and concourse. The strategy is required to:
 - Identify **Crowd Control Points:** where you can stop or reduce the flow of customers passing through the control point. For example:
 - **Platform Entry:** by barricading entrances and stairs and reversing escalators leading to the platform.
 - **Opal Gates** (where applicable): by configuring Opal gates to reduce the flow of customers accessing the paid area.
 - **Station Entry:** by barricading or closing the access points (such as closing shutters if available) to prevent customers from entering the station.
 - Identify **Corralling Areas:** where you can get customers to wait in order to gain access to a particular area of the station. Some stations can create corralling areas in different parts inside and outside the station. For example:
 - **Paid Area:** When closing entry to the platform due to overcrowding, you may be able to corral customers in the paid area, particularly customers interchanging between platforms.
 - **Unpaid Area:** When closing access to the Opal gates due to overcrowded platforms and concourses.
 - **Outside the station:** When closing the station due to overcrowded platforms, paid area and unpaid area.
- **First CMP Draft:** Using text and diagrams, transfer the decided customer management strategy into a CMP document. It is recommended to create three main sections:
 1. **Introductory Information:** This section gives information regarding the purpose of the document, the intended audience, station operation environment and any relevant information and data.
 2. **The CMP Scenario:** Whether it is for the BAU or degraded mode, this section should clearly stipulate and give all details relating to the time of the day or peak period, the situation for which the CMP is been created for, the challenge the team will face.
 3. **The Action Plan:** How the agreed management strategy will be translated into actions taken by the staff. This will include, but is not limited to, what will be the trigger point and how to initiate the CMP, what actions each staff member will be required to perform, what equipment they will use, how they will communicate and how all actions will integrate to effectively implement the strategy.
- **Final CMP Draft:** Upon completing the first CMP draft by the working group, the following steps should be followed:
 - **Feedback Collection:** The working group should seek feedback from all the station staff. This could be done by conducting a series of team briefings or sharing the draft CMP with the staff via emails. Staff should be given enough time to study and understand the CMP and provide feedback. All feedback should be acknowledged and considered for the development of the Final CMP Draft.

- **Final CMP Draft:** After considering the staff feedback and updating the CMP, the final draft will be reviewed by the Safety Professional and the Human Factors Specialist to ensure all risks have been identified and mitigated.
- **Health Check:** A customer management strategy and CMP health check should be conducted to ensure the effectiveness of the developed CMP.
- **Management Strategy Health Check:**
 - Have the CMP challenges been identified and defined clearly?
 - Have the impacted platforms, crowding pinch points and bottlenecks been identified?
 - Have all control points and corralling areas been identified and managed with the available resources and equipment?
 - Reconsidering the “**Key Challenges for CMPs**”, are there any other challenges arising from implementing the strategy?
 - Has the strategy been adjusted to respond to the newly identified challenges?
 - Did the final strategy provide a workable management plan to all challenges?
- **Final Draft CMP Health Check:**
 - Have you clearly described the station environment and included all relevant information and data?
 - Have you clearly described the operational challenges for the BAU and degraded mode scenarios, and explained their impact on the station during the different peak periods?
 - Have you used station diagrams to demonstrate the impact of the challenges on the station?
 - Have you visually illustrated customer flow and crossflow, crowding areas, vertical transport direction, Opal gates configuration and staff designated location?
 - Have you clearly explained the strategy the team will implement to deal with the BAU and the different degraded mode scenarios?
 - Have you used the same station diagrams to visually demonstrate the strategy control points and corralling areas, the equipment used, the changes to the vertical transport direction and Opal gates configuration, and the changes to staff designated locations and roles?
 - Have you visually illustrated the changes the strategy will bring to the customer flow and crossflow and crowding areas?
 - Have you included a list of announcements to be used by the staff in the different roles and locations?
 - Have you included required information and directional signage (including digital signage), their locations, method of displaying and who will be responsible to put them out?
 - Have you included the list of equipment used by the different roles and the storage locations?
 - For a full CMP Checklist please refer to Appendix B

6. Endorsements and Approvals

6.1 Endorsed by

Name	Title	Signature	Date
Michael Mercieca	Deputy Executive Director Customer Delivery, Region 1		
Chris Walsh	Deputy Executive Director Customer Delivery, Region 2		
Craig Cunningham	Team Manager, Safety Delivery Safety, Environment & Risk		


6.2 Approved by

Name	Title	Signature	Date
Rob Austin	A/Director Delivery Support		

Customer Management Plan Framework

6. Endorsements and Approvals

6.1 Endorsed by

Name	Title	Signature	Date
Michael Mercieca	Deputy Executive Director Customer Delivery, Region 1	Michael Mercieca 	Digitally signed by Michael Mercieca Date: 2020.12.14 08:22:14 +11'00'
Chris Walsh	Deputy Executive Director Customer Delivery, Region 2		14/12/20
Craig Cunningham	Team Manager, Safety Delivery Safety, Environment & Risk		14/12/20

6.2 Approved by

Name	Title	Signature	Date
Rob Austin	A/Director Delivery Support		16/12/2020

Glossary

Term	Definition
BAU	Business As Usual
CAM	Customer Area Manager
CMP	Customer Management Plan
F&LS	Fire and Life Safety
HSR	Health and Safety Representatives
KPI	Key Performance Indicator
Mobile PA	Mobile public announcement
NSW	New South Wales
PA system	Public announcement system
SCOO	Station Customer and Operations Officer
SDM	Station Duty Manager
SME	Subject Matter Expert
SIMP	Site Incident Management Plan

Appendix A – Fruin Levels of Service

Fruin Levels of Service (LoS) is a quantitative measure to grade the quality of traffic. This metric is leveraged internationally in pedestrian flow simulations as well as in public infrastructure design. There are multiple criteria to accommodate for a range of pedestrian traffic circumstances including not limited to walking, queuing and stairs. The gauges for each are displayed below.

Fruin Level of Service	Queuing				Walkway				Stairway			
	Density (ped/m ²)		Space (m ² /ped)		Density (ped/m ²)		Flow Rate (ped/m/min)		Density (ped/m ²)		Flow Rate (ped/m/min)	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
A		0.83	1.21			0.31		23.0		0.54		16.4
B	0.83	1.08	0.93	1.21	0.31	0.43	23.0	32.8	0.54	0.72	16.4	23.0
C	1.08	1.54	0.65	0.93	0.43	0.72	32.8	49.2	0.72	1.08	23.0	32.8
D	1.54	3.59	0.28	0.65	0.72	1.08	49.2	65.6	1.08	1.54	32.8	42.7
E	3.59	5.38	0.19	0.28	1.08	2.15	65.6	82.0	1.54	2.69	42.7	55.8
F	5.38			0.19	2.15		82.0		2.69		55.8	

Figure 1 Fruin Level of Service for Queuing Walkway and Stairway

Appendix B – CMP Checklist

No	Item	Y or N
1.0	CMP Preparation	
	Did you prepare the station diagrams and maps?	
	Did you gather the relevant station information required for the CMP? (For example: patronage, Opal gate usage, train loadings, etc.)	
	Did you include station staff, HSRs, Safety Professional, Human Factors, Customer Readiness and SCOOs to the Working Group?	
2.0	CMP Station Environment	
	Did you provide enough information relating to the station operation, busiest hours, targeted platforms, main customer flow, and overcrowding issues?	
	Did you provide enough information relating to the station layout and infrastructure? (For example: station entrances, concourses, gate lines, vertical transport and platforms shapes and sizes)	
3.0	CMP Scenario and Challenge	
	Did you describe the BAU operation or the degraded mode what causes it?	
	Did you identify the affected platforms and described the impact on the different areas of the station?	
	Did you consider the follow-on changes which may cause additional challenges to the situation? (For example? Changes to customer flow, interchange, crowding and customer behaviour)	
	Did you identify customer crowding pinch points and bottlenecks?	
	Did you explain the risks associated with this scenario if the situation is not managed and risks are mitigated?	
4.0	Action and Management Plan	
	Did you clearly describe the trigger point for moving from BAU operation to the CMP operation?	
	Did you identify the person responsible for initiating the CMP and the communication plan the staff will follow?	
	Did you include in the communication plan who are the main stakeholders you have to inform and who will contact them? (For example: the CAM, SCOOs and Operation)	
	Did you describe how to control access to the platforms and what equipment to be used and who will be responsible to perform this task?	
	Did you describe how vertical transport will be configured and who will be responsible to perform this task?	
	Did you describe how gate lines will be configured to control the inflow of customers entering the station and who will be responsible to perform this task?	

	Did you describe how and when station entrance will be closed to prevent customers from entering the station and who will be responsible to perform this task?	
	Have you consider creating corralling areas in the paid area, unpaid area or outside the station?	
	Did you consider the required equipment to create the corralling area and the staff who will create and manage those areas?	
	Did you describe clearly who the staff that will be repositioned, what duties they will be required to perform and what equipment they will need?	
	Did you explain how you will change the available facilities to control crowds? (Digital signage, Portable PA, etc.)	
	Did you draft customer announcements to be used by platforms, crowd control and Opal gate staff?	
5.0	Other Considerations	
	Did you consider the use of external resources to assist with carrying out certain functions? (For example requesting Customer Infor to make regular announcements and display messages on the screens?)	
	Did you consider directing customers to use alternative transport?	
	Did you consider requesting security to send you police to assist with customer crowding?	
6.0	Diagrams and Maps	
	Did you use enough and easy to read diagrams for the CMP?	
	Did you illustrate on the diagrams the overcrowding areas and pinch points?	
	Did you illustrate on the diagrams the customer flow and crossflow?	
	Did you illustrate on the diagrams the vertical transport direction to control customers accessing the platform?	
	Did you illustrate on the diagrams the gate lines configuration to control customer accessing the paid area and control customer flow?	
	Did you illustrate on the diagrams the staff designated locations and where they will be relocated with a legend to explain the new duties they will have to perform?	
	Did you illustrate on the diagrams the different control points and corralling areas, including the equipment required?	
	Did you illustrate on the diagrams the information and directional signage locations? (including the digital signage)	
7.0	Required Equipment	
	Do you have enough barricades to carry out you CMP?	
	Do you have enough directional signs?	
	Do you have enough signs frames?	
	Do you need or have enough portable PA systems?	

	Do you have enough cable ties?	
	Do you need any other equipment?	

Appendix C – Station Classification Scheme

http://intranet.sydneytrains.nsw.gov.au/_data/assets/pdf_file/0011/95528/Station_Classification_Scheme_-_Volume_B.pdf



Adobe Acrobat
Document

Appendix D – CityRail Station Classification

http://intranet.sydneytrains.nsw.gov.au/_data/assets/pdf_file/0010/95527/CityRail_Station_Classification.pdf



Adobe Acrobat
Document

Appendix E – Fire and Evacuation Training – Railcorp Framework



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Document