



## 'Do More with Less' with Fleet Optimisation

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# About BC Sands



Established in 1984.  
Privately owned Australian  
company. \$25 million  
business

Aim: Sydney's premium quality building & landscape  
supplier. We pride ourselves on always bringing our  
customers the best – on time and in full!



Sell landscaping  
and building  
supplies including; a  
ggregates; cement;  
bricks; blocks;  
flashing; etc.

BC Sands delivers uglies...Bricks,  
blocks, turf, reinforcing mesh, bulk  
bags of sand, firewood as well as  
tipper loads of sand & gravels

Two yards, 30  
vehicles

- 4 based at Brookvale
- 26 based at Taren Point

Up to 150 deliveries  
and pickups per day

- Deliveries >90%
- Pick-ups <10%

# Define What Success Looks Like

Any investment in sustainability needs to lead to a cost reduction or be cost neutral

DEFINE WHAT SUCCESS LOOKS LIKE

More capacity with the existing fleet

Reduce emissions

Stop allocator burn out

Eliminate Paper

Manage the fleet transparently

Improve customer service without blowing out costs

# Our Fleet

Lots of truck types, abilities, shapes and sizes:

- Small / medium / large
- Cranes
- Tippers
- Flatbeds

Flexible but problematic!



# Tippers



# Long Reach Crane Trucks

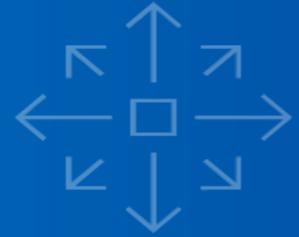


# A Bit of Everything Else ...



The Journey to  
Optimisation

The Challenges We Faced



# Problems We Faced

- There is only so much an allocator can keep in his/ her head
- Only so much an allocator can do... do we hire a second allocator?
- Staff turnover and loss of knowledge within BC Sands



# Problems We Faced

- Very manual process
- Paper based process
- Sales struggled to know what could fit on a load



## Problems We Faced - Easy Load



# Problems We Faced - Fiddly Load



# Problems We Faced - Ugly Load



# Problems We Faced



The landscaping and building supplies industry is competitive – we needed a point of difference

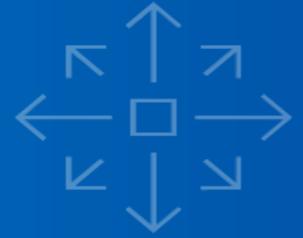


# Three Types of Optimisation to Solve



- How orders are taken
- How loads are planned
- How routes are planned

# The Journey to Optimisation



# End to End Solution



## Service Fleet

- Depot Location
- Fleet size
- Capabilities
- Achievable Road Speeds

## Service Policy Operations Policy

- Customer Priority Rules
- Scheduling objectives
- Chain of Responsibility
- Delivery Rules

## Dispatched Routes

- Planned customer delivery and sequence
- Time and Distance

## Mobile Devices

- Actual delivery data
- Delivery schedule adjusted dynamically
- Sign on Glass

## Customer Data

- Site restrictions
- Order Date
- Order Product and Volume
- Customer Type
- Customer Priority
- Service Type



## Map Data

- Road network
- Road Classification
- Urbanisation Rules



## Reporting

- KPI analysis
  - Efficiency
  - Effectiveness
- "Cost to Serve"
- Actual Vs Planned

# Planning Orders – Customer Service



The customer service team provide a delivery window to customers 'real time' by assigning orders to a route while the customer is on the phone

Please enter booking requirements

**Order summary**

Order:

To MAIANBAR, AkPe Matthews

No crane required for this order

Client has crane or fork?

Minimum reach:

Order priority:

Default priority is 1000. Large loads and important deliveries can go to 10,000

**Order requirements**

Any truck. No width or height restriction

**OR**

**Please tick ALL trucks able to access the job site**

3 ton tipper

Narrow small crane

Wide small crane

**Delivery instructions:**

last drop has to be as late as possible as customer is getting home at 10 call 0408238789 when arrivg to guide

Bulk bags on pallets?

Trailer / Truck and Dog?

Sydney Metro cert.

Arrive empty to customer?

Net weight (kgs):

Net volume (m3):

Net pallets:

Net bulk bags:

Net loose:

Truck requirements:

Order restrictions:

Add to order:

Ok to leave if no-one to sign?

Winch required?

Specific truck:

Truck type:

Start date:

End date:

**Multi-day or urgent orders**

Start time each day:

End time each day:

*Time window NOT guaranteed!*

**Available ( guaranteed ) timeslots in order of most profitable first:**

Pickup	Start time	End time	Same address	Delivery bucket	Profitability	Best truck
100-TarenPoint	29/08/2023 7:00 AM	29/08/2023 4:00 PM	YES	ALLDAY	990	34
100-TarenPoint	29/08/2023 7:00 AM	29/08/2023 2:00 PM		TRADE	990	34
100-TarenPoint	29/08/2023 10:00 AM	29/08/2023 2:00 PM		OFFPEAK	929	34
100-TarenPoint	29/08/2023 12:00 PM	29/08/2023 4:00 PM		PM	929	34
100-TarenPoint	29/08/2023 7:00 AM	29/08/2023 7:15 AM		FIRST	606	31

Start time:

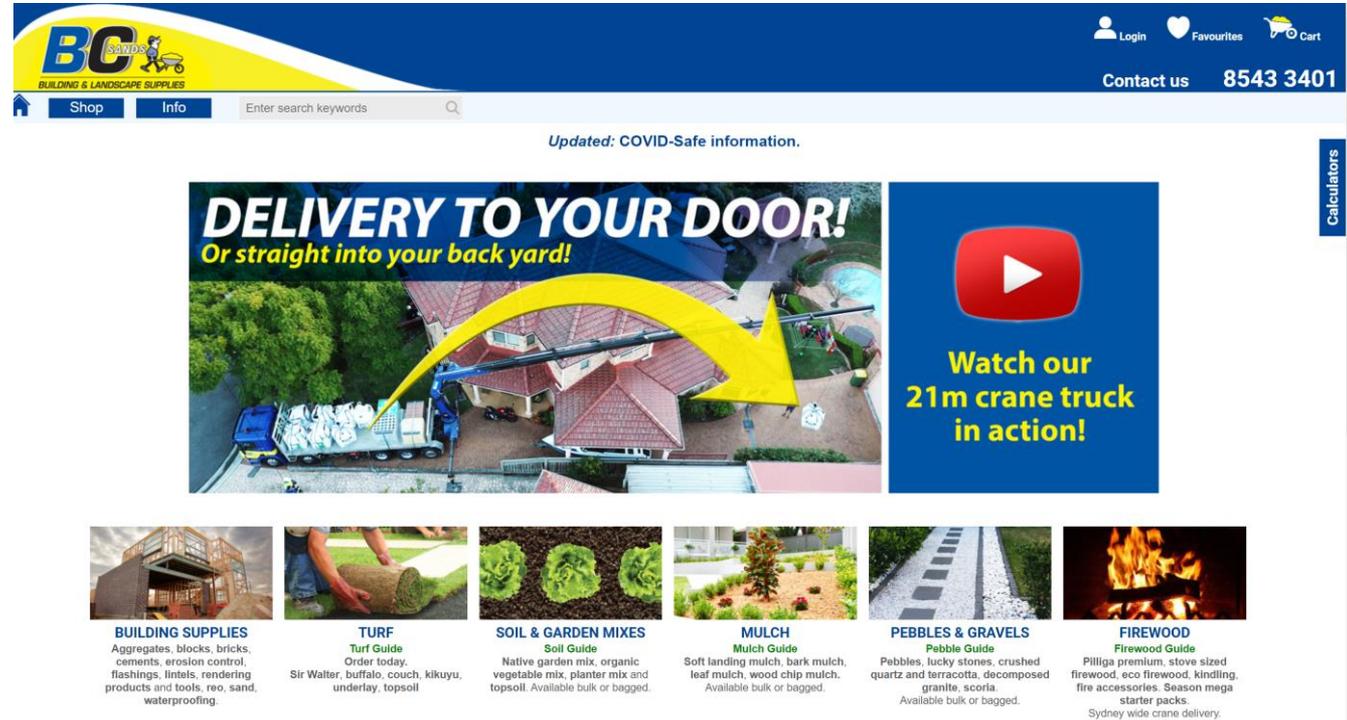
End time:

- XFER
- ALLDAY
- TRADE
- AM
- PM
- 2HR

# Planning Orders – Website

Customers can order via the website and get

- Delivery time ie 7am
- Same day delivery



The screenshot shows the BC SANDS website homepage. At the top is a blue navigation bar with the BC SANDS logo on the left, and 'Login', 'Favourites', and 'Cart' icons on the right. Below the navigation bar is a search bar with the text 'Enter search keywords' and a magnifying glass icon. To the right of the search bar, it says 'Contact us 8543 3401'. Below the navigation bar, there is a banner with the text 'Updated: COVID-Safe information.' The main content area features a large image of a blue crane truck with a yellow crane arm extending over a residential house, with the text 'DELIVERY TO YOUR DOOR! Or straight into your backyard!' overlaid. To the right of this image is a blue box with a red play button icon and the text 'Watch our 21m crane truck in action!'. Below the main image are six product categories, each with a small image and a description:

- BUILDING SUPPLIES**  
Aggregates, blocks, bricks, cements, erosion control, flashings, lintels, rendering products and tools, reo, sand, waterproofing.
- TURF**  
Turf Guide  
Order today.  
Sir Walter, buffalo, couch, kikuyu, underlay, topsoil
- SOIL & GARDEN MIXES**  
Soil Guide  
Native garden mix, organic vegetable mix, planter mix and topsoil. Available bulk or bagged.
- MULCH**  
Mulch Guide  
Soft landing mulch, bark mulch, leaf mulch, wood chip mulch. Available bulk or bagged.
- PEBBLES & GRAVELS**  
Pebble Guide  
Pebbles, lucky stones, crushed quartz and terracotta, decomposed granite, scoria. Available bulk or bagged.
- FIREWOOD**  
Firewood Guide  
Pilliga premium, stove sized firewood, eco firewood, kindling, fire accessories. Season mega starter packs.  
Sydney wide crane delivery.

Calculators

# Planning Orders – Website

Reservations - Online web order

Scheduling deliveries that allows customers to request delivery windows.

Available delivery windows with tiered pricing displayed in reservations

**Preferred date**

8 January 2019  [Find available windows](#)

**Please select the delivery window that you would like to book**

**Available delivery windows**

Sort by

[Reserve selected window](#)

<input type="radio"/>	Tue, 08 Jan, 2019	07:00 - 07:15	\$82.80
<input type="radio"/>	Tue, 08 Jan, 2019	07:00 - 12:00	\$69.00
<input type="radio"/>	Tue, 08 Jan, 2019	07:00 - 14:00	\$62.10
<input type="radio"/>	Tue, 08 Jan, 2019	07:00 - 16:00	\$62.10
<input type="radio"/>	Wed, 09 Jan, 2019	07:00 - 12:00	\$69.00
<input type="radio"/>	Wed, 09 Jan, 2019	07:00 - 14:00	\$62.10
<input type="radio"/>	Wed, 09 Jan, 2019	07:00 - 16:00	\$62.10
<input type="radio"/>	Wed, 09 Jan, 2019	12:00 - 16:00	\$69.00
<input type="radio"/>	Thu, 10 Jan, 2019	07:00 - 07:15	\$82.80
<input type="radio"/>	Thu, 10 Jan, 2019	07:00 - 12:00	\$69.00
<input type="radio"/>	Thu, 10 Jan, 2019	07:00 - 14:00	\$62.10
<input type="radio"/>	Thu, 10 Jan, 2019	07:00 - 16:00	\$62.10
<input type="radio"/>	Fri, 11 Jan, 2019	07:00 - 07:15	\$82.80
<input type="radio"/>	Fri, 11 Jan, 2019	07:00 - 12:00	\$69.00
<input type="radio"/>	Fri, 11 Jan, 2019	07:00 - 14:00	\$62.10



# Self Service Kiosk

- Yardie checks the load for the next trip and gets it ready for the driver
- Driver sees which yardie picked his load and where he put it



Trucks in depots as at Tue 8, 12:13PM

Please complete loading as soon as you can ...

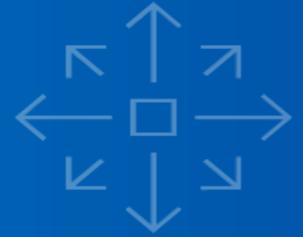
Truck	Driver	Arrived	Countdown (hh:mm)
27	Jim	Tue 8, 11:38AM	00:35
33	Dennis	Tue 8, 11:47AM	00:26
42	Greg	Tue 8, 11:50AM	00:23
81	Rod	Tue 8, 11:57AM	00:16
44	Drew	Tue 8, 12:06PM	00:07

## Rolling displays

Trucks, loads and eta to depot.  
Trucks currently in depots with a countdown of how many minutes they have been there

# The Journey to Optimisation

Was it hard?



# Problems We Faced



BC Sands' loads are complex

Conflicting commodities will not be placed on the same trip.

	NOSHARE	NO SPLIT	LOOSE	OTHER
NOSHARE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
NO SPLIT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
OTHER	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

# A Scary Journey



Fear of new technology & change



Fat fingers and hand-held devices

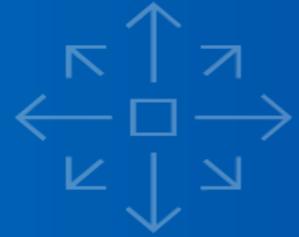


Perceived loss of control

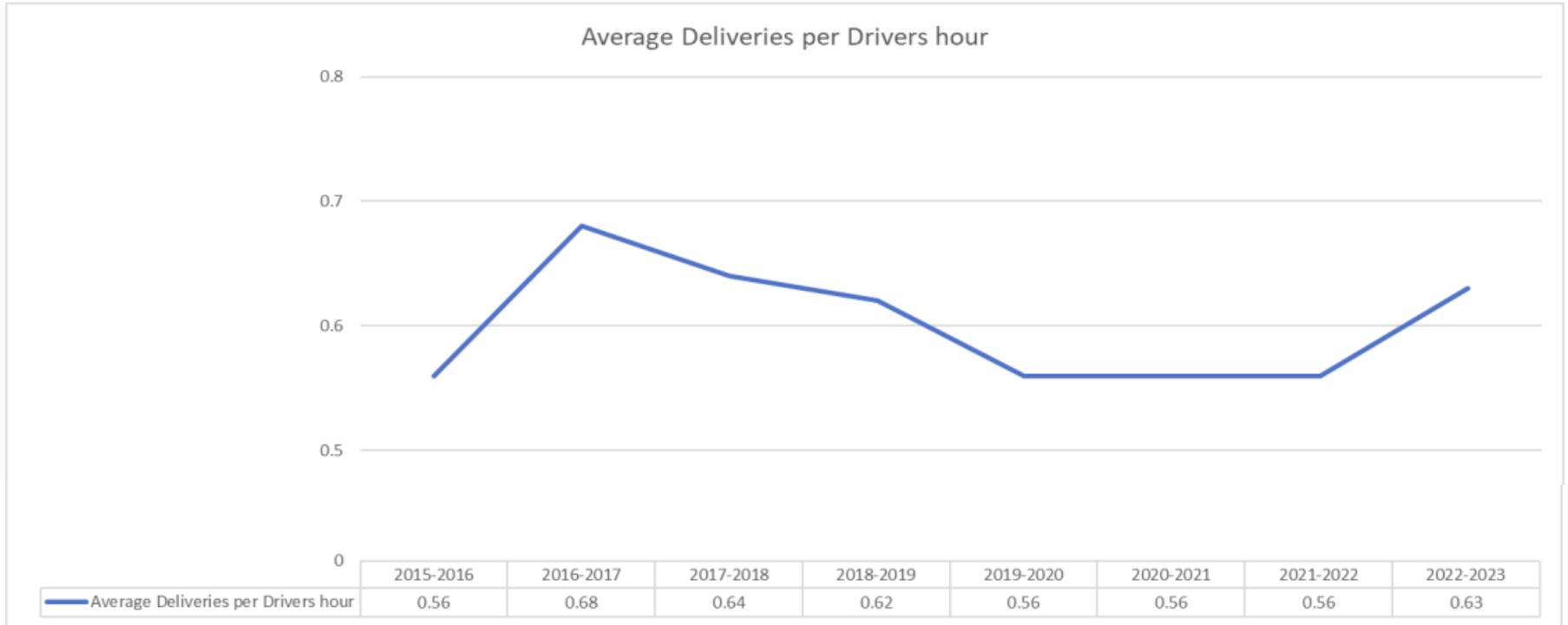
To help drivers get into the 'spirit of things' we ran a 'best delivery photo' competition. It broke down the last bits of resistance and even the customers are in the act

The Benefits

... so Far



# Benefits - It's in the Numbers...



BC Sands went live with Route Planner in 2015.

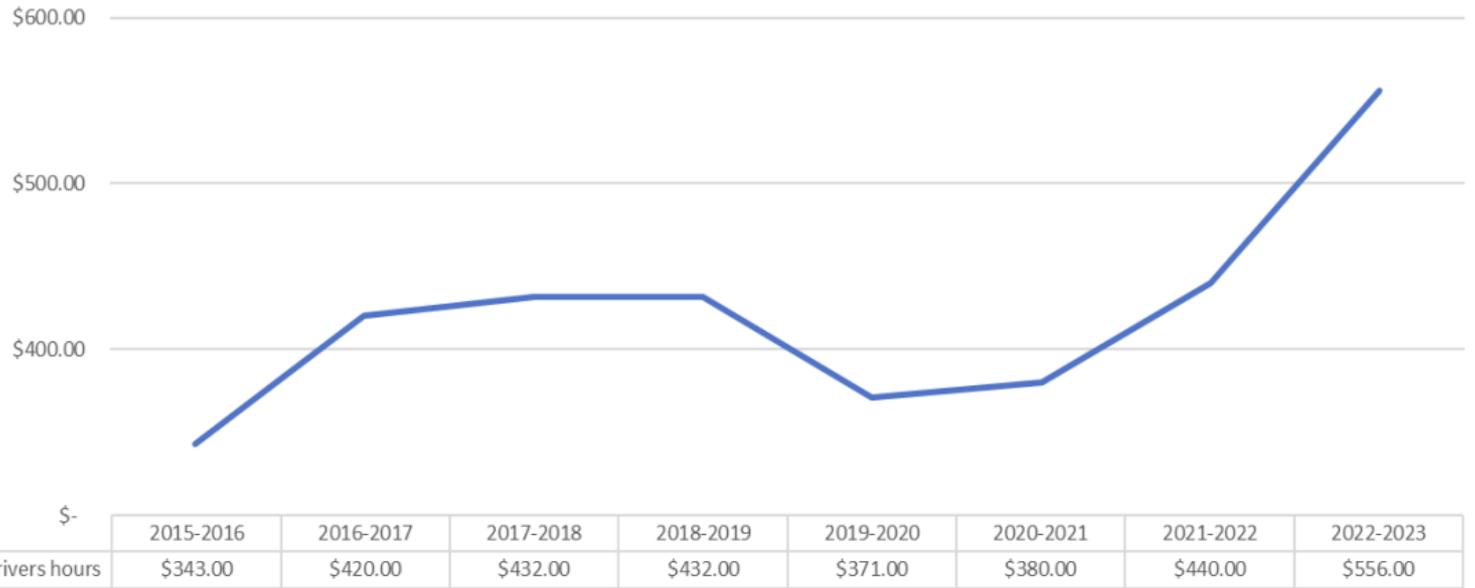
Fuel usage per delivery decreased by 18%

- Delivery value per driver hour increased 34%
- Deliveries per driver hour have increased 26%

# Benefits - It's in the Numbers...



Average Delivery value per drivers hours



# Benefits: Focus on Truck Utilisation



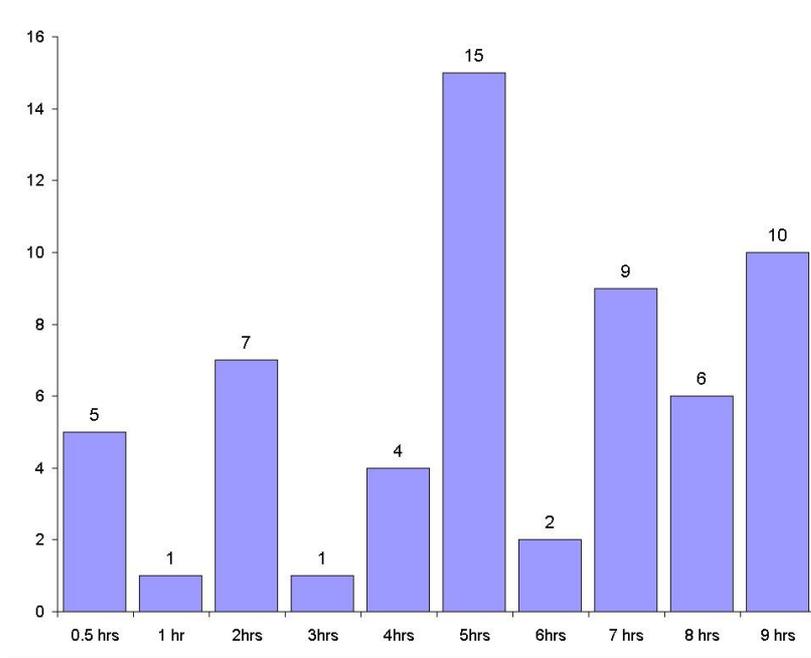
## Truck Utilisation Colour Coded Grid

Select display date:  Truck type:

Refresh  Exit

Truck	06:00 - 06:30	06:30 - 07:00	07:00 - 07:30	07:30 - 08:00	08:00 - 08:30	08:30 - 09:00	09:00 - 09:30	09:30 - 10:00	10:00 - 10:30	10:30 - 11:00	11:00 - 11:30	11:30 - 12:00	12:00 - 12:30	12:30 - 13:00	13:00 - 13:30	13:30 - 14:00	14:00 - 14:30	14:30 - 15:00	15:00 - 15:30	15:30 - 16:00	16:00 - 16:30	
20	Taren Point	13% - 600kgs	Taren Point	65% - 2000kgs	Taren Point	Taren Point	97% - 3000kgs	97% - 3000kgs	MASCOT	MASCOT	97% - 3000kgs	97% - 3000kgs	97% - 3000kgs	65% - 2000kgs	Taren Point	Taren Point	69% - 2150kgs	63% - 2150kgs				
21		Taren Point	Taren Point	83% - 2000kgs	83% - 2000kgs	83% - 2000kgs	33% - 1000kgs	33% - 1000kgs	MASCOT	MASCOT	100% - 3000kgs	100% - 3000kgs	100% - 1615kgs	Taren Point	Taren Point	Taren Point	100% - 1615kgs	100% - 1615kgs				
22	ARCHIVED																					
24								65% - 2000kgs	65% - 2000kgs	8571% - 3000kgs	8571% - 3000kgs	8571% - 3000kgs	8571% - 3000kgs	8571% - 3000kgs	8571% - 3000kgs	8571% - 3000kgs	8571% - 3000kgs	8571% - 3000kgs	8571% - 3000kgs	0% - 0kgs	0% - 0kgs	
25			Taren Point	65% - 2638.0206kgs	65% - 2638.0206kgs	65% - 2638.0206kgs	Taren Point	Taren Point	Taren Point	63% - 5000kgs	63% - 5000kgs	63% - 5000kgs	29% - 2000kgs	Taren Point	Taren Point	73% - 2950.5kgs	73% - 2950.5kgs	29% - 2060.5kgs				
26	Taren Point	87% - 6000kgs	87% - 6000kgs	87% - 6000kgs	87% - 6000kgs	75% - 4595kgs	Taren Point	75% - 4595kgs	75% - 4595kgs	38% - 3000kgs	38% - 3000kgs	Taren Point	Taren Point	44% - 3000kgs	44% - 3000kgs	Taren Point						
27	Taren Point	63% - 4326kgs	63% - 4326kgs	63% - 4326kgs	19% - 1536kgs	19% - 1536kgs	0% - 0kgs	MASCOT	MASCOT	73% - 5000kgs	29% - 2000kgs	29% - 2000kgs	Taren Point	44% - 3466.5kgs	44% - 3466.5kgs	18% - 1466.5kgs	15% - 1221.5kgs	MASCOT	75% - 6000kgs	75% - 6000kgs	CHIFLEY	
28	Taren Point	86% - 5323.15kgs	86% - 5323.15kgs	86% - 5323.15kgs	75% - 6000kgs	75% - 6000kgs	MASCOT	75% - 6000kgs	53% - 4215kgs	Taren Point	53% - 4215kgs	53% - 4215kgs	MASCOT	44% - 3000kgs	7% - 580kgs	Taren Point	7% - 580kgs	Taren Point				
29										128% - 6000kgs												
30		100% - 5000kgs	100% - 5000kgs	Taren Point	44% - 2225kgs	78% - 4000kgs	78% - 4000kgs	78% - 4000kgs	78% - 4000kgs	78% - 4000kgs	78% - 4000kgs	78% - 4000kgs	78% - 4000kgs	78% - 4000kgs	78% - 4000kgs	Taren Point	69% - 3500kgs	43% - 2200kgs	Taren Point			
31		Taren Point	100% - 6461kgs	100% - 6461kgs	100% - 6461kgs	20% - 1536kgs	20% - 1536kgs	33% - 2000kgs	Taren Point	Taren Point	100% - 6000kgs	100% - 6000kgs	100% - 6000kgs	67% - 4000kgs	MASCOT	67% - 4000kgs	67% - 4000kgs	MASCOT	50% - 3865kgs	50% - 3865kgs	17% - 1240kgs	
32						Taren Point	60% - 4056.334kgs	60% - 4056.334kgs	60% - 4056.334kgs	60% - 4056.334kgs	4% - 325kgs	4% - 325kgs	Taren Point	4% - 325kgs	Taren Point	Taren Point	8% - 619.6kgs					
33	Taren Point	98% - 5000kgs	Taren Point	100% - 3137.5kgs	Taren Point	62% - 3140.3507kgs	62% - 3140.3507kgs	Taren Point	83% - 4250kgs	Taren Point	78% - 4000kgs	Taren Point	Taren Point	78% - 4000kgs	Taren Point	98% - 5000kgs	98% - 5000kgs	Taren Point	39% - 2000kgs	0% - 0kgs	KURNELL	
34																						
35	ARCHIVED																					
40		99% - 15000kgs	99% - 15000kgs	99% - 15000kgs	99% - 15000kgs	99% - 15000kgs	99% - 15000kgs	99% - 15000kgs	79% - 12000kgs	79% - 12000kgs	79% - 12000kgs	79% - 12000kgs	Taren Point	Taren Point	79% - 12000kgs	99% - 15000kgs	99% - 15000kgs	99% - 15000kgs	99% - 15000kgs	99% - 15000kgs		
41		99% - 15000kgs	99% - 15000kgs	99% - 15000kgs	Taren Point	99% - 15000kgs	99% - 15000kgs	99% - 15000kgs	99% - 15000kgs	99% - 15000kgs	Taren Point	99% - 15000kgs	99% - 15000kgs	99% - 15000kgs	0% - 0kgs	0% - 0kgs						

# Benefits - Differential Pricing Driving Utilisation Improvements



“I don’t care what it costs to get it to me” Customers happy to pay premium pricing

Carrot or stick?

Incentive for customers to select a wide time window

Or

Pay the premium for a two hour time window

Marketing approach:

Accounts tell ops – (get yourself organized and save \$\$\$)

# Benefits for BC Sands

Promised 10% emissions,  
fuel and labour savings!  
(What have we achieved)

Ability to grow - do more  
with less (massive growth  
potential, extra depots)



- Minimised errors -  
right product is loaded  
onto the right truck and less  
returned loads
- Understand your business  
... know and monitor key  
metrics

# Questions

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