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Logistics Redefined

DLDS's Logistics Databank Project(LDB) is currently providing visibility services for more than 70% of India's Container Volume and achieved yet another milestone when it **crossed 7 million mark** in providing EXIM Containers Visibility across the western corridor of India ,through a single window(www.ldb.co.in).

Pan India launch of DMICDC's Logistics Databank Operations was announced on 18th Dec 2017, this will enable in bringing Visibility & Transparency across the Indian Supply Chain and reduce the Container Transportation time and the costs.

LDB service went live across ICD Tughlakabad from 11th March 2018 which will provide visibility of the EXIM container movement.

Launch of LDB mobile App for android users, is enabling the stakeholders in tracking the EXIM Containers movement across the western corridor.

Since the commencement of the Operations, DLDS Analytics reports have been able to bring in visibility to the stakeholders enabling them in improvising the key performance Indicators across JNPT as below:

• Port Dwell Time Improvement of **42.86%** for Import bound Containers and **15%** improvement in Dwell time of Export bound Containers.

• Dwell time of ICDs & CFSs in western corridor has improved by **26.7%.**

• The LDB Congestion Analysis helped in reducing the transit time between Ports to CFS by around **12%.**
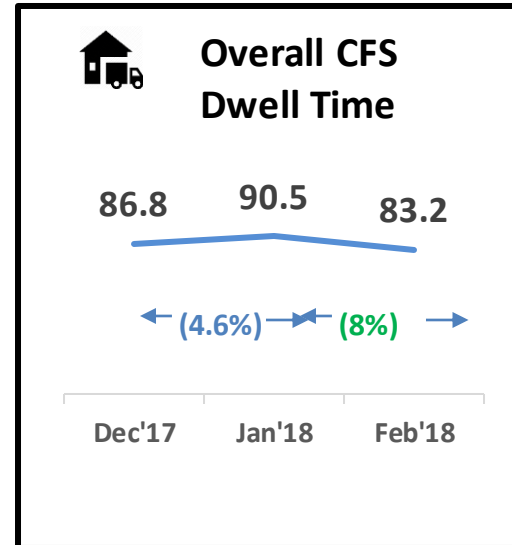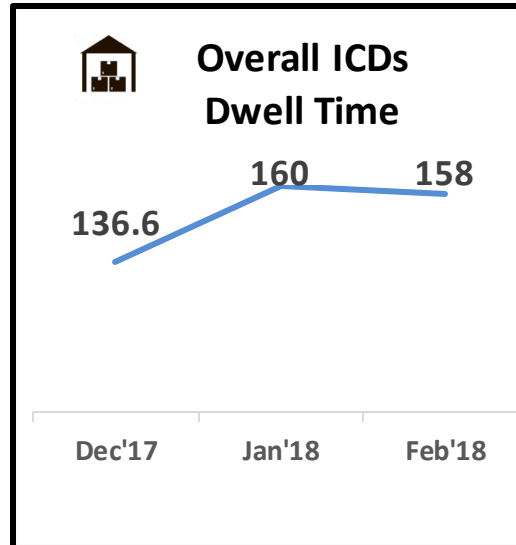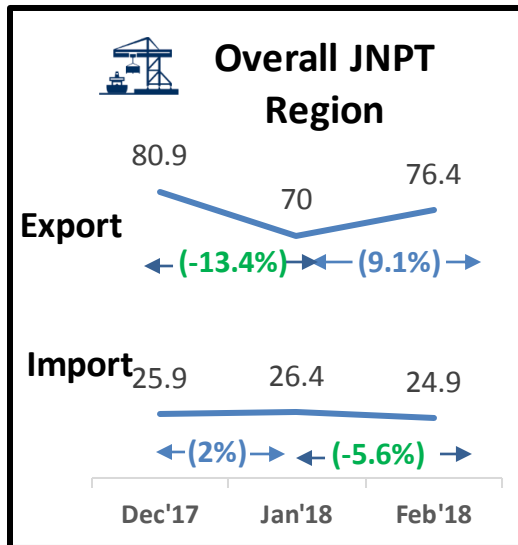
LDB Performance trend across JNPT Region (Jan 2018- Feb 2018)

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| Performance Benchmarking | Performance Index | Container Clearance Time analysis |

With help of above activities below results have been achieved :

Overall JNPT Region

Export
80.9
70
76.4
← **(-13.4%)** → ← **(9.1%)** →

Import 25.9
26.4
24.9
← **(2%)** → ← **(-5.6%)** →

Dec'17   Jan'18   Feb'18

Overall ICDs Dwell Time

136.6
160
158

Dec'17   Jan'18   Feb'18

Overall CFS Dwell Time

86.8
90.5
83.2
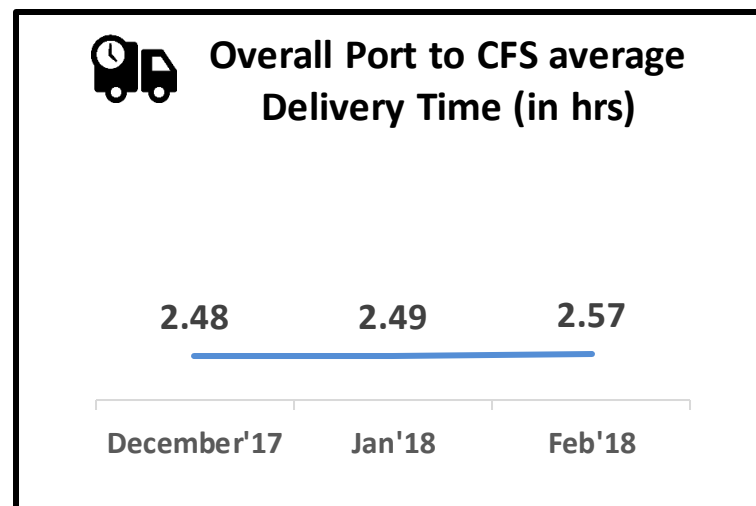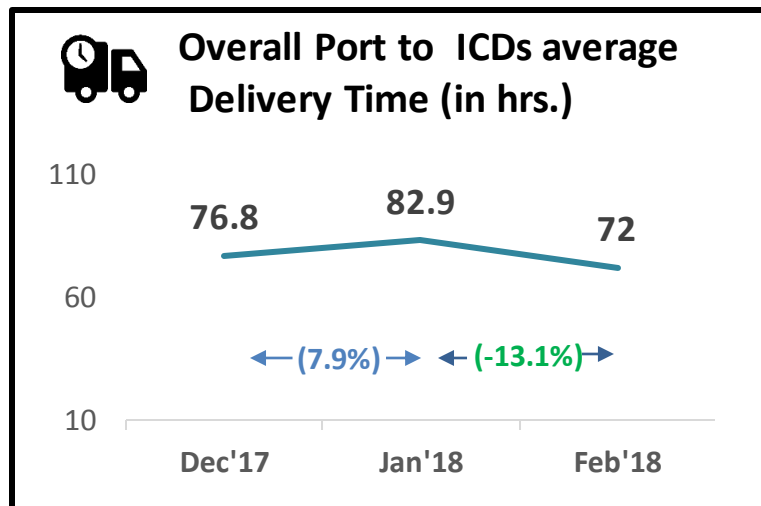← **(4.6%)** → ← **(8%)** →

Dec'17   Jan'18   Feb'18

Dwell Time
- **5.6%** improvement in JNPT region import cycle dwell time performance in February'18 month as compared to the previous month

- **8%** improvement in overall CFS dwell time performance as compared to the previous month

| Congestion Analysis | Bottleneck Identification |

Overall Port to ICDs average Delivery Time (in hrs.)

110

76.8
82.9
72

60

← **(7.9%)** → ← **(-13.1%)** →

10

Dec'17   Jan'18   Feb'18

Overall Port to CFS average Delivery Time (in hrs)

2.48
2.49
2.57

December'17   Jan'18   Feb'18

Transit Time Reduction
- **13.1% improvement in overall Port to ICDs average delivery time in February'18 as compared to the previous month**

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LDB coverage

9 Port Terminals

11 Inland container Depots

46 Container Freight Stations

19 Toll Plazas

APSEZ, Mundra	
Terminal Name	AICTPL
	ACMT
	MICTPL
	AMCT

APSEZ

Adani Hazira Port

APM Terminals Pipavav (GPPL)

JNPT

JNPT, Mumbai	
Terminal Name	GTI
	JNPCT
	NSICT
	NSIGT
	BMCTPL

DMIC Region (Western Corridor)

Eastern Corridor

Southern Corridor

Haldia-Kolkata Port Trust (BKCT, HICT)

Vishakhapatnam Port (VCTPL)

Krishnapatnam Port (KPCT)

Kattupalli Port (KICT)
Ennore Port (KPL)
Chennai Port (CCTL, CITPL)

Cochin Port (ICTT)

Tuticorin Port (TCT, DBGT)

Ports where LDB service is Operational

Ports/Terminals to be extended with LDB Service

Key Findings- Feb 2018

- **Carbon Emission Reduction**
- **Mixed Container Analysis**
- **Increase in JNPCT Dwell Time**
- **Truck v/s Train Traffic across Port Terminals**

Carbon Emission reduction

Carbon Emission reduction around JNPT Port region

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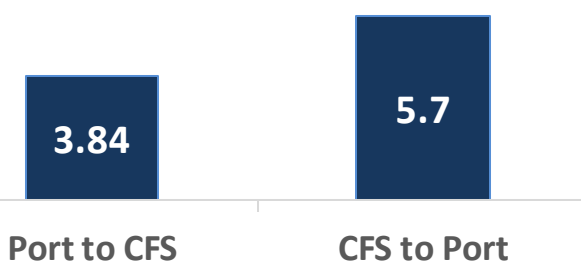DMICDC LOGISTICS DATA SERVICES LTD

Congestion analysis has helped in reducing the transit time between JNPT port and surrounding CFS, this has enabled in reducing the carbon emission index.
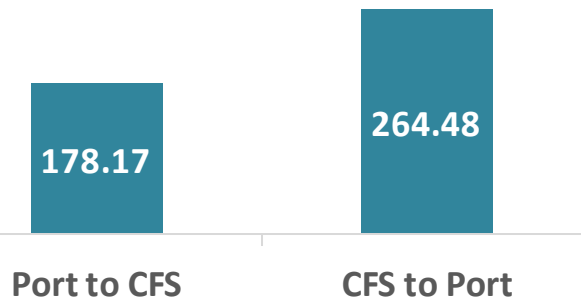
Pre-Scenario

Transit Time (Feb'17)

Average Transit Time (in hrs)

Port to CFS	CFS to Port
3.84	5.7

Results in

CO2 emission (Feb'17)

CO2 emission per litre per truck (in kg CO2/ltr)

Port to CFS	CFS to Port
178.17	264.48

Decrease in Transit between JNPT port and surrounding CFS has caused reduction in carbon emission by trucks
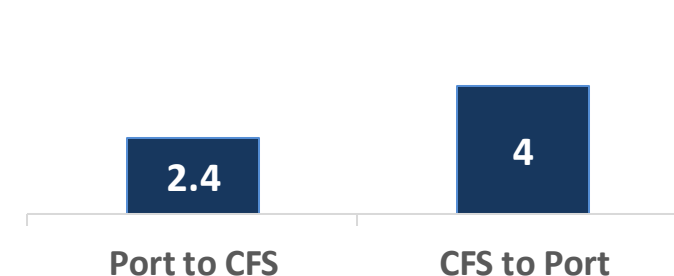
38% reduction in CO2 emission (Port to CFS)

30% reduction in CO2 emission (CFS to Port)
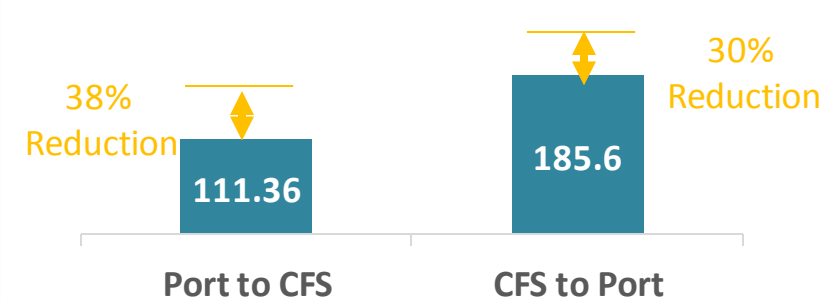
Post-Scenario

Transit Time (Dec'17)

Average Transit Time (in hrs)

| Port to CFS	CFS to Port
2.4	4

Results in

CO2 emission (Dec'17)

CO2 emission per litre per truck (in kg CO2/ltr)

38% Reduction

30% Reduction

Port to CFS	CFS to Port
111.36	185.6

Carbon Emission reduction on National Highways

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Along with measures like GST , which has resulted in reducing the transit time between Toll Plazas, DLDS Congestion Analysis is also contributing in reducing congestions through its Visbility service and helping reduce the Carbon Footprint.
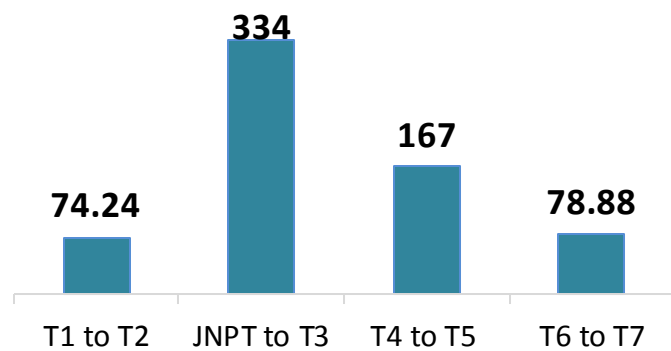
Pre-Scenario

Transit Time between Toll plazas (July'17)

Average Transit Time (in hrs)

T1 to T2	JNPT to T3	T4 to T5	T6 to T7
1.6	7.2	3.6	1.7
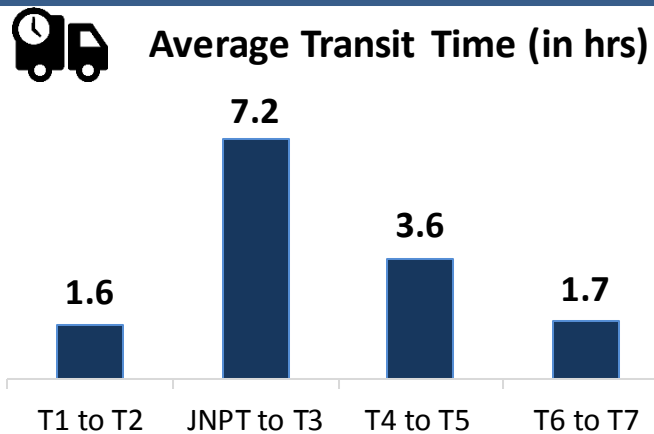
Results in

CO2 emission (July'17)

CO2 emission per litre per truck (in kg CO2/ltr)

| T1 to T2	JNPT to T3	T4 to T5	T6 to T7
74.24	334	167	78.88

Decrease in Transit between Toll plazas has caused reduction in carbon emission

19% reduction in CO2 emission (T1 to T2)

8% reduction in CO2 emission (JNPT to T3)

11% reduction in CO2 emission (T4 to T5)
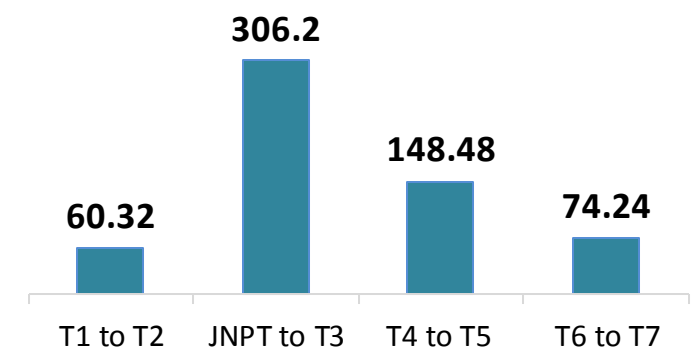
6% reduction in CO2 emission (T6 to T7)

Post-Scenario

Transit Time between Toll plazas (Nov'17)

Average Transit Time (in hrs)

T1 to T2	JNPT to T3	T4 to T5	T6 to T7
1.3	6.6	3.2	1.6
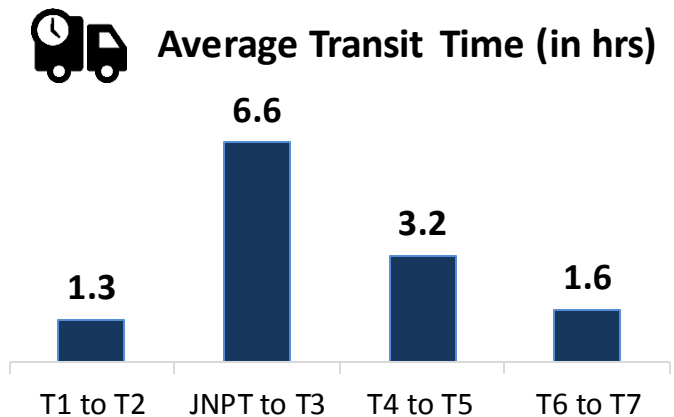
Results in

CO2 emission (Nov'17)

CO2 emission per litre per truck (in kg CO2/ltr)

T1 to T2	JNPT to T3	T4 to T5	T6 to T7
60.32	306.2	148.48	74.24

JNPT- Jawaharlal Nehru Port Trust, T – Toll plaza, names of the Toll plazas are given in annexure

JNPT
Mixed Container Movement Analysis

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Below mentioned are the train bound mixed containers (in % volume) handled by the respective terminals in import and export cycle :

Mix container across JNPT terminal out of overall train bound containers (in%)

Terminal	Value
Nava Sheva	14.00%
GTI	23%
JNPCT	39.00%
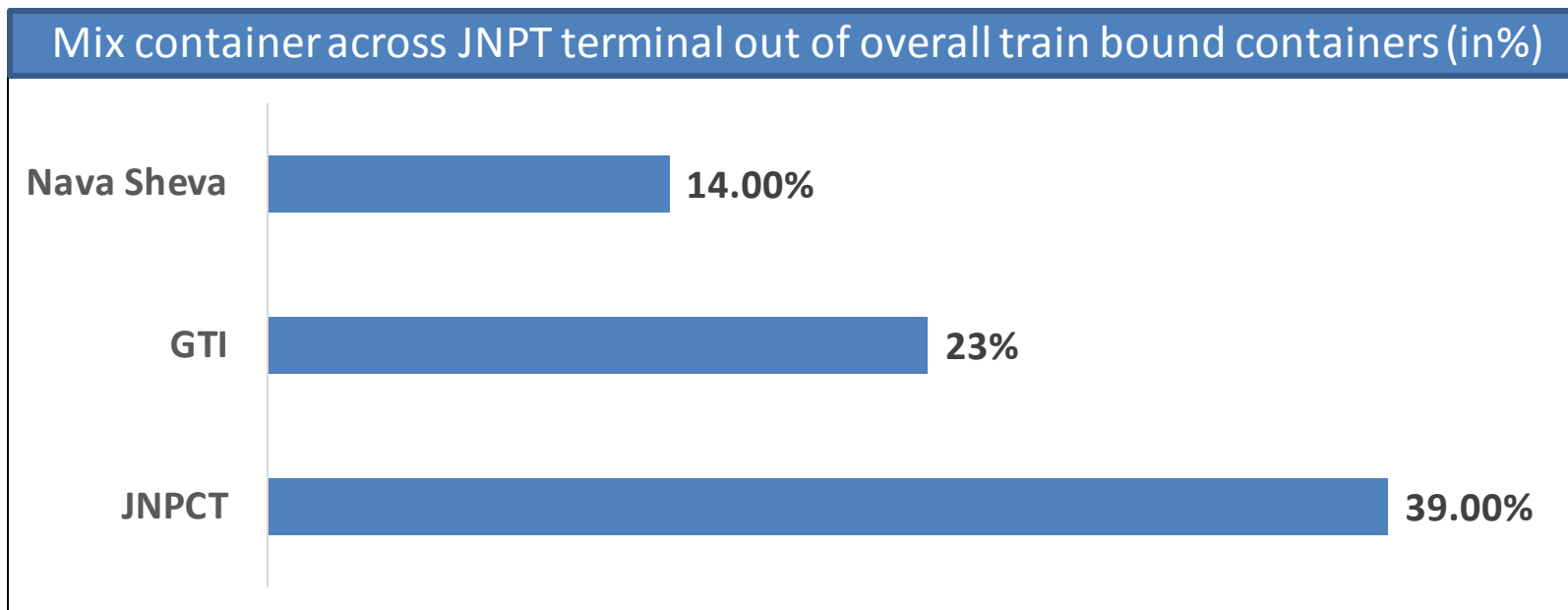
Below figure depicts the percentage of containers of other terminals landed on respective terminals

JNPCT		GTI		Nava Sheva	
GTI	57%	JNPCT	22%	JNPCT	47%
Nava Sheva	43%	Nava Sheva	78%	GTI	53%
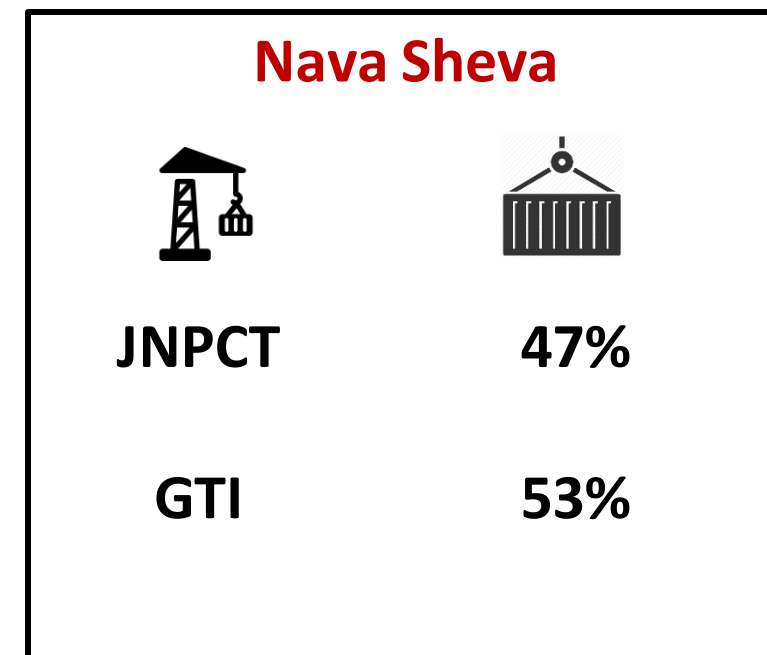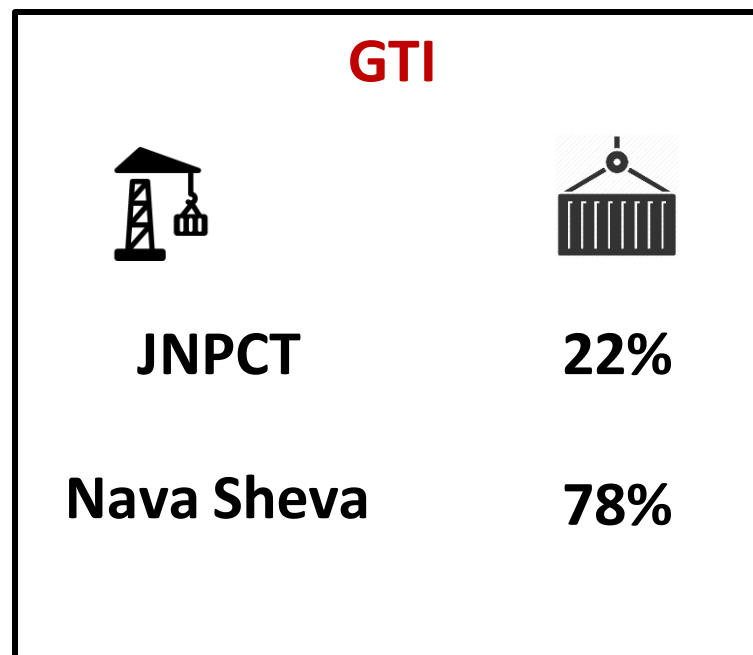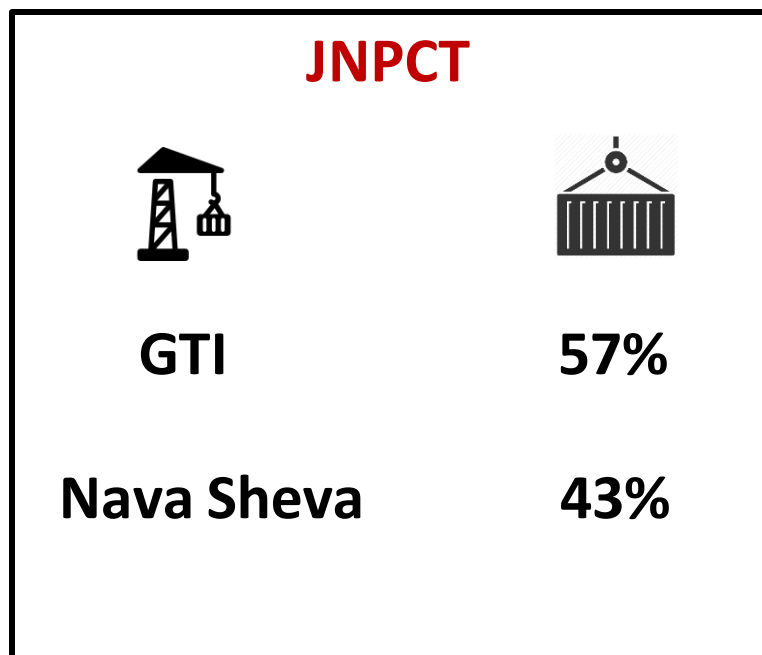
Analysis has been performed on January'18 month data

Mix container Handling time Import Cycle

Mix Container Handling Time (Hrs)

Neva Sheva	75.6
GTI	15.7
JNPCT	20.2
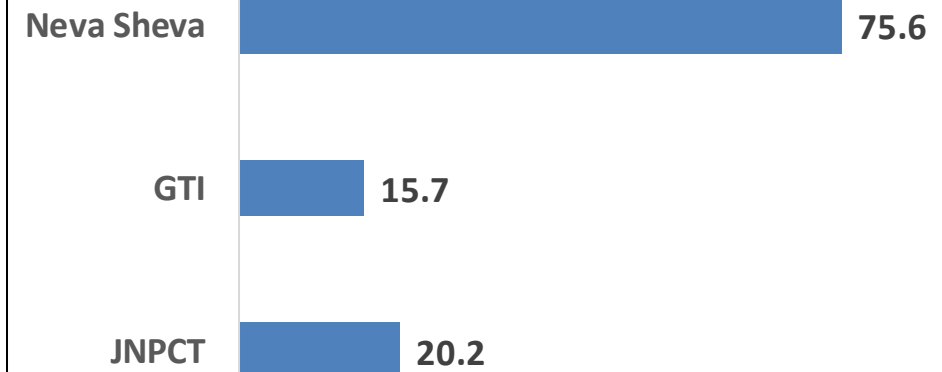
Mix containers requires additional time to process which increases the port dwell time.

Mix Container Handling Time (Hrs)

Neva Sheva	42.7
GTI	15.3
JNPCT	9
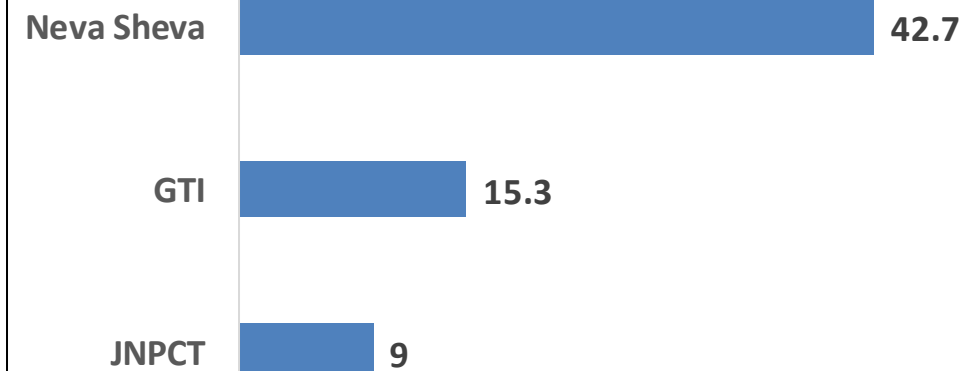
Mix container Handling time Export Cycle

Analysis has been perform on January'18 month data

Increase in JNPCT Dwell Time

JNPCT port terminal saw an increase in its Export cycle Port dwell time by around 26.8% in February 18

JNPCT port terminal has seen increase in its overall dwell time by 19.5% in February '18 as compared to January'18. This is primarily due increase in export cycle dwell time of both train and truck containers.

- **JNPCT has seen rise in its export dwell time by 26.8 %**

JNPCT Dwell time: Export Cycle (in hrs.)

26.8%

73.0 Jan'18   92.6 Feb'18

Impact
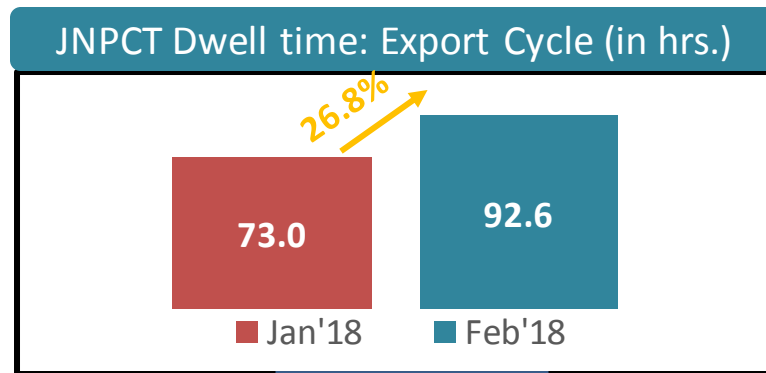
- **JNPCT has increased its overall dwell time by 19.5%**

JNPCT Dwell time: Overall (in hrs.)

19.5%

46.5 Jan'18   55.6 Feb'18

Further Analysis

JNPCT Dwell time: Export Cycle, Train (in hrs.)

42.5%

107.5 Jan'18   153.2 Feb'18

JNPCT Dwell time: Export Cycle, Truck (in hrs.)

26%

71.9 Jan'18   90.7 Feb'18
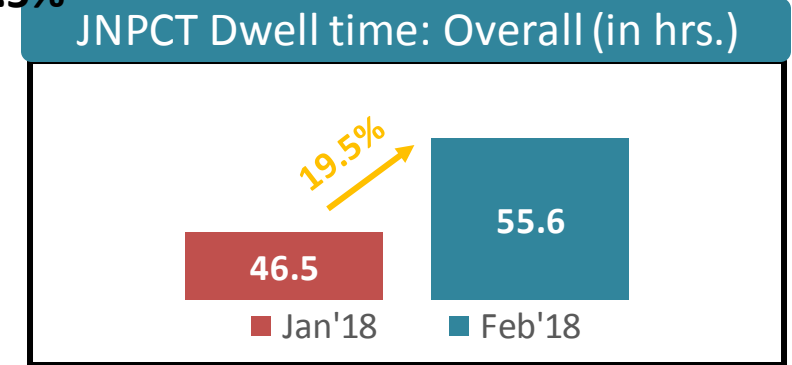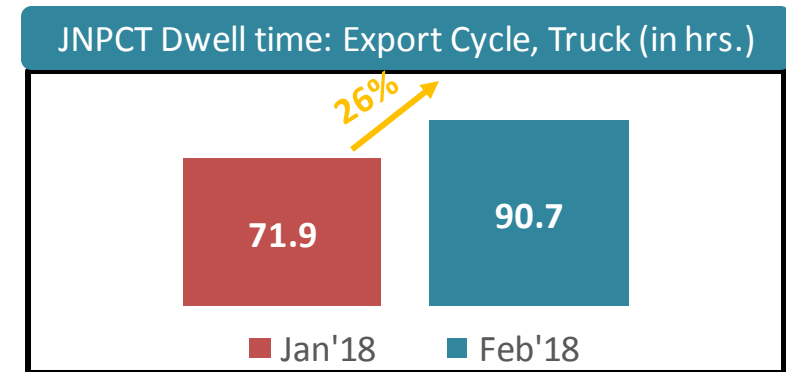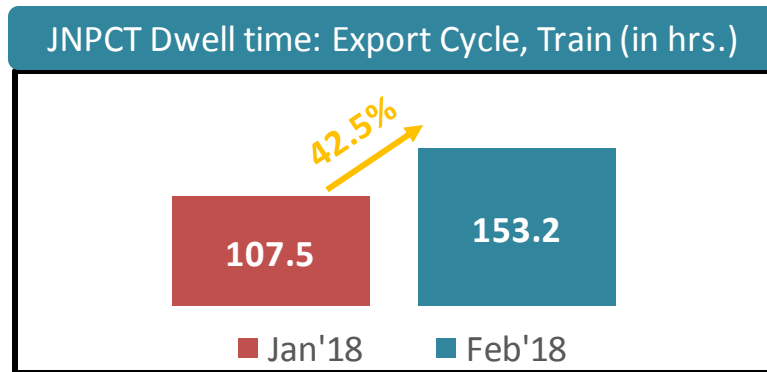
Within 5 days   More than 5 days

Within 5 days   More than 5 days

JNPCT : Export Train   38%   62%

JNPCT : Export Truck   76%   24%

Truck v/s Train traffic handled

The following table displays the container volume distribution trend on the basis of mode of transit for Import cycle (JNPT and APSEZ region)

	Month	JNPT (Volume in %)		APSEZ MUNDRA (Volume in %)	
		Truck	Train	Truck	Train
Import Cycle	Sept'17	83	17	78	22
	Oct'17	81	19	77	23
	Nov'17	82	18	82	18
	Dec'17	81	19	77	23
	Jan'18	86	14	80	20
	Feb'18	87	13	80	20
	Overall	**84%**	**16%**	**80%**	**20%**

The following table displays the container volume distribution trend on the basis of mode of transit for Export cycle (JNPT and APSEZ region)

	Month	JNPT (Volume in %)		APSEZ MUNDRA (Volume in %)	
		Truck	Train	Truck	Train
Export Cycle	Sept'17	85	15	50	50
	Oct'17	85	15	48	52
	Nov'17	87	13	66	34
	Dec'17	85	15	66	34
	Jan'18	87	13	68	32
	Feb'18	88	12	67	33
	Overall	**87%**	**13%**	**66%**	**34%**

Performance Benchmarking

Performance benchmarking for JNPT Region for month of February'18

Port Terminals

Top Performing Terminal		Low Performing Terminal	
Gateway Terminals India (GTI)	Dwell Time : **41** hrs.	Jawaharlal Nehru Port Container Terminal (JNPCT)	Dwell Time : **55.6** hrs.

Performance benchmarking for APSEZ Region for month February'18

Port Terminals

Top Performing Terminal		Low Performing Terminal	
Adani Hazira Port Private Limited (AHPPL)	Dwell Time : **53.3** hrs.	Adani International Container Terminal (AICT)	Dwell Time : **77.4** hrs.

Performance Benchmarking : Container Freight Station

Performance benchmarking for JNPT Region CFS for month of February'18

CFS

Top Performing CFS's		Low Performing CFS's	
JWR CFS, Navi Mumbai	Dwell Time : 52 hrs.	Take Care Logistics CFS	Dwell Time : 119.3 hrs.
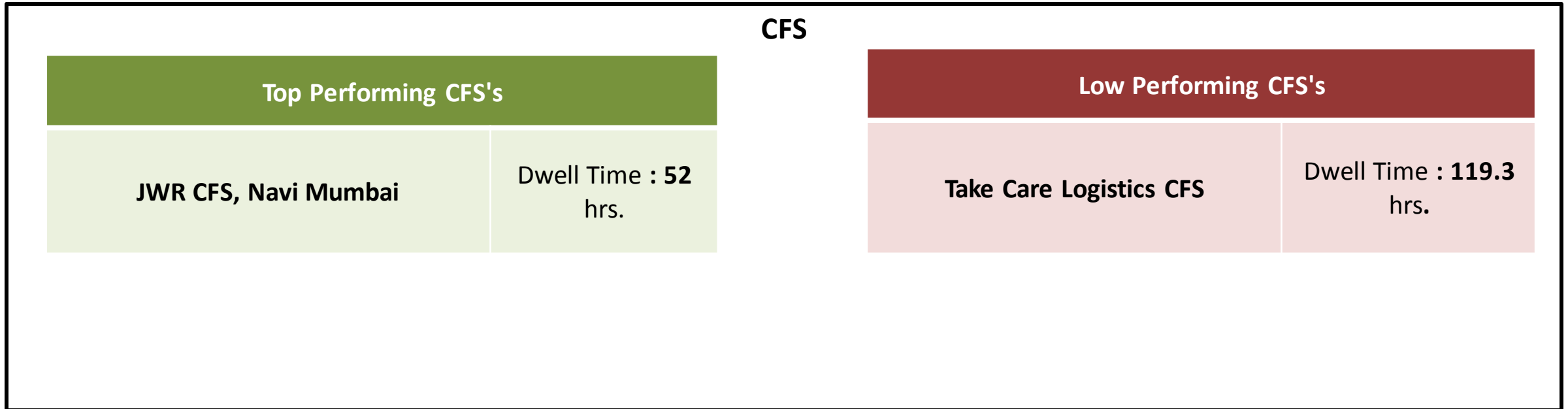
Performance benchmarking for APSEZ Region CFS for month of February'18

CFS

Top Performing CFS's		Low Performing CFS's	
Adani CFS Eximyard, Mundra	Dwell Time : 48.7 hrs.	Hind Mundra Terminals CFS, Mundra	Dwell Time : 135.3 hrs.

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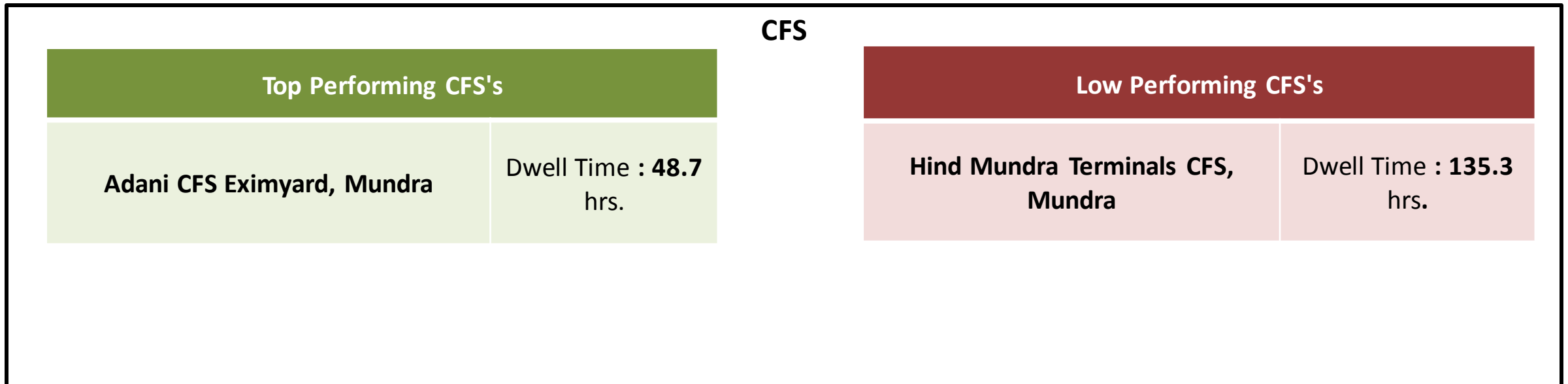
Performance benchmarking for ICDs for month of February'18

ICD

Top Performing ICD	
CMA CGM Agencies ICD, Dadri	Dwell Time : **84** hrs.

Low Performing ICD	
Allcargo Logistics Park ICD,Dadri	Dwell Time : **174.8** hrs.

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LCO performance benchmarking of western corridor

Below depicts the best performing port terminal across western corridor for month of February'18

Port Terminals				
Top Performing Terminal			**Low Performing Terminal**	
Gateway Terminals India (GTI)	Dwell Time : **41** hrs.		**Adani International Container Terminal (AICT)**	Dwell Time : **77.4** hrs.

Below depicts the best performing Container freight station (CFS) across western corridor for month of February'18

CFS				
Top Performing CFS's			**Low Performing CFS's**	
Adani CFS Eximyard, Mundra	Dwell Time : **48.7** hrs.		**Hind Mundra Terminals CFS, Mundra**	Dwell Time : **135.3** hrs.

In order to assess the relative performance Port, Container Freight Station and Inland Container Depot ,the relative dwell time as well as the volume of containers handled by them are depicted graphically in the form of an index to portray the performance of a particular organisation on the basis of these two combined factors.

The figure depicts the Frequency Index i.e. volume by dwell time performance for Port terminals across western corridor for February '18. The Quadrant II represents the high performing ports with high frequency Index i.e. high container volume at lower dwell time

| Slow Bulk Movers : consist of Ports which have catered higher container volume at higher dwell time | Star Performer: consist of Ports which have catered relatively high container volume in lower dwell time | High Potential : consist of Ports which have catered relatively lower container volume in lower dwell time | Laggard : consist of Ports which have catered relatively lower container volume at higher dwell time |

Port Terminal Performance Index : February'18

Quadrant : II
Star performer

Quadrant : I
Slow Bulk Movers

GTI

JNPCT

AMCT

MICT

AICT

NSIGT

NSICT

AHPPL

ACMTPL

Quadrant : III
High Potential

Quadrant : IV
Laggard

Container Volume — High / low

Dwell Time — High / low

The below graph depicts the Performance Index for all CFS for February'18. The Quadrant II represent the best CFS with high frequency Index i.e. high container volume at lower dwell time
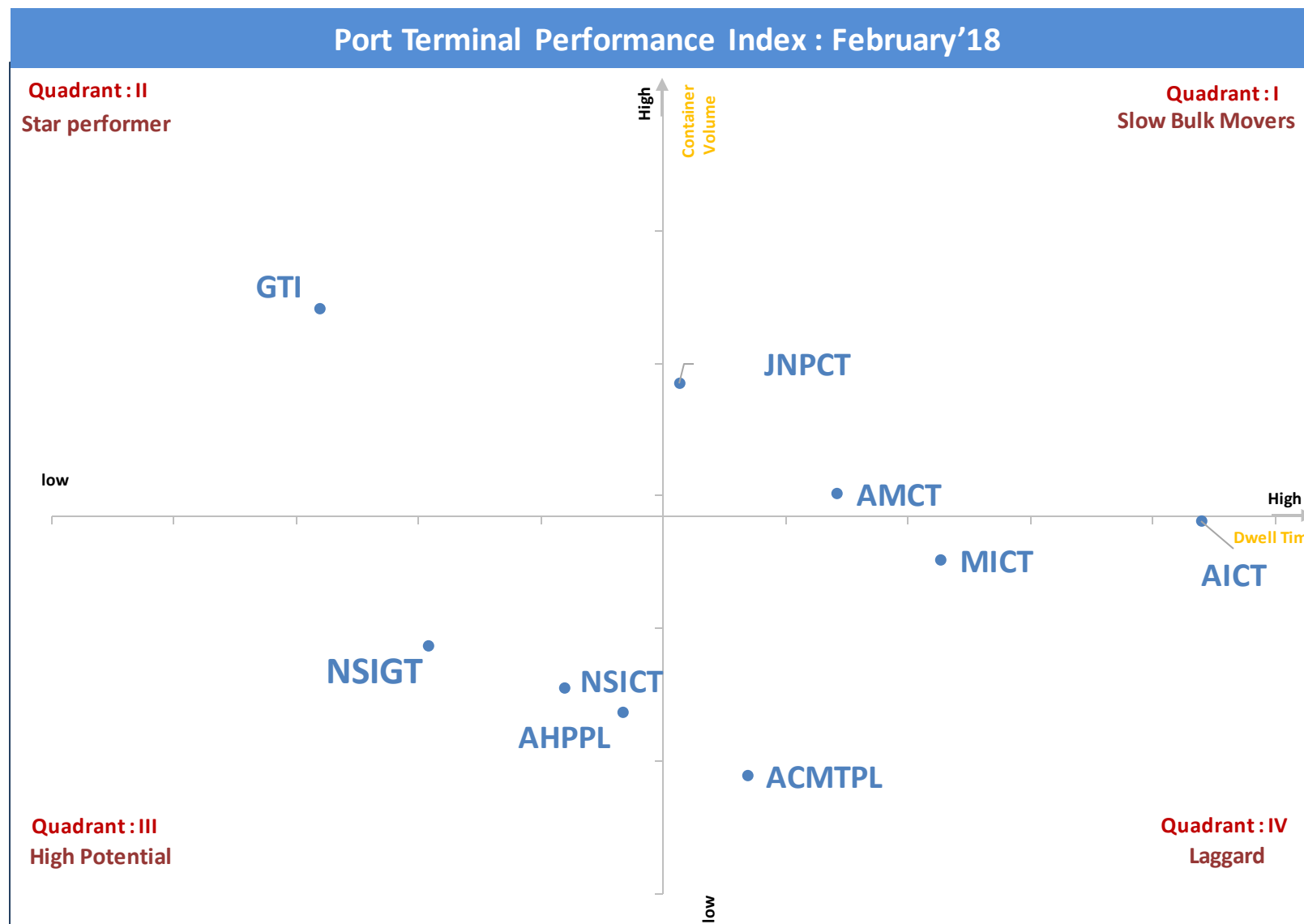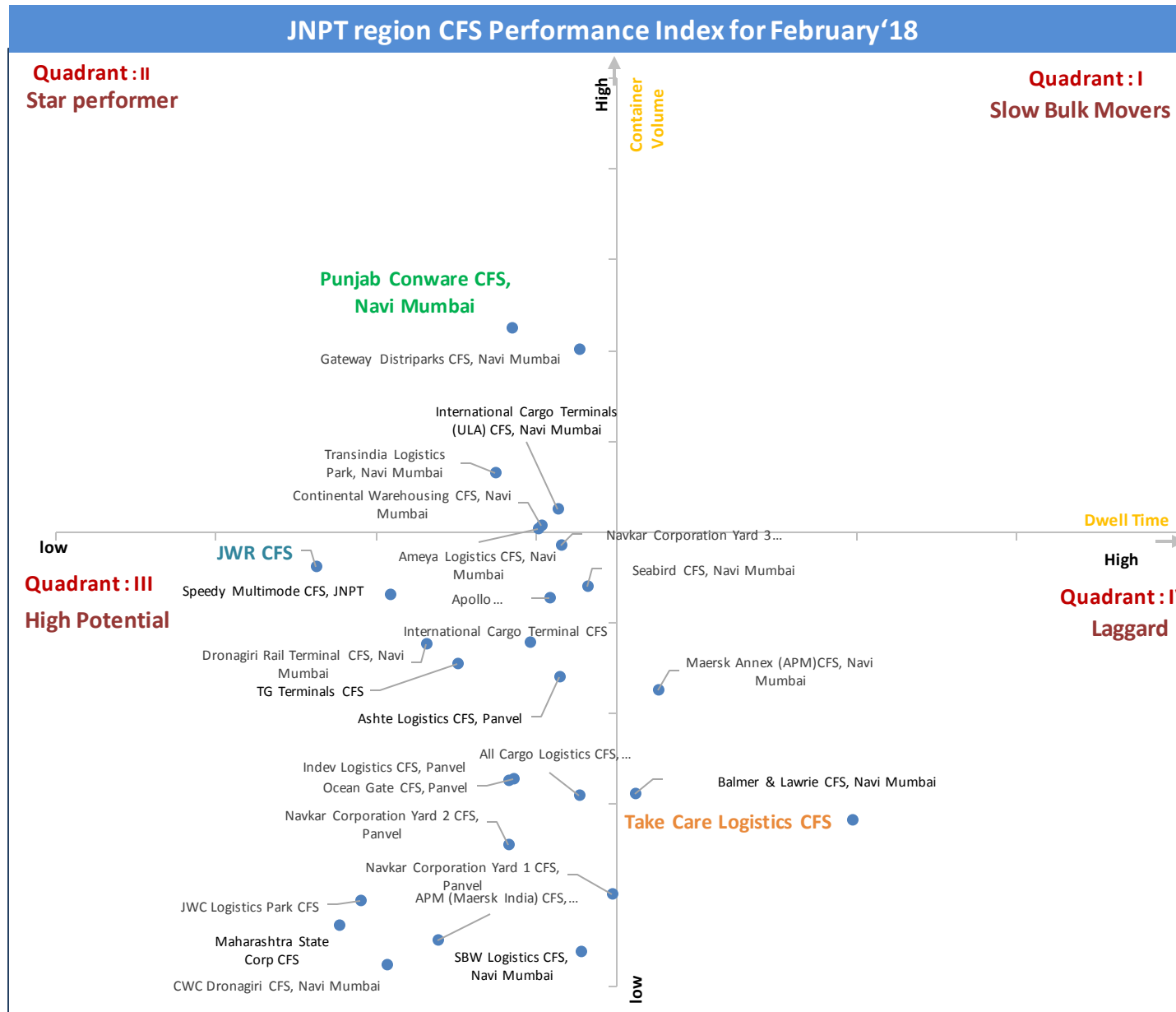
JNPT region CFS Performance Index for February'18

Quadrant : II
Star performer

Quadrant : I
Slow Bulk Movers

High — Container Volume

Punjab Conware CFS, Navi Mumbai

Gateway Distriparks CFS, Navi Mumbai

International Cargo Terminals (ULA) CFS, Navi Mumbai

Transindia Logistics Park, Navi Mumbai

Continental Warehousing CFS, Navi Mumbai

Navkar Corporation Yard 3...

Dwell Time

low

High

JWR CFS

Ameya Logistics CFS, Navi Mumbai

Seabird CFS, Navi Mumbai

Quadrant : III
High Potential

Speedy Multimode CFS, JNPT

Apollo ...

Quadrant : IV
Laggard

International Cargo Terminal CFS

Dronagiri Rail Terminal CFS, Navi Mumbai

Maersk Annex (APM)CFS, Navi Mumbai

TG Terminals CFS

Ashte Logistics CFS, Panvel

All Cargo Logistics CFS, ...

Indev Logistics CFS, Panvel

Balmer & Lawrie CFS, Navi Mumbai

Ocean Gate CFS, Panvel

Navkar Corporation Yard 2 CFS, Panvel

Take Care Logistics CFS

Navkar Corporation Yard 1 CFS, Panvel

APM (Maersk India) CFS, ...

JWC Logistics Park CFS

Maharashtra State Corp CFS

SBW Logistics CFS, Navi Mumbai

CWC Dronagiri CFS, Navi Mumbai

low

Legends

Top in category

- **Star performer**
- **Slow bulk mover**
- **High potential**
- **Laggard**

The below graph depicts the Performance Index for all CFS for month of February'18. The Quadrant II represent the best CFS with high frequency Index i.e. high container volume at lower dwell time
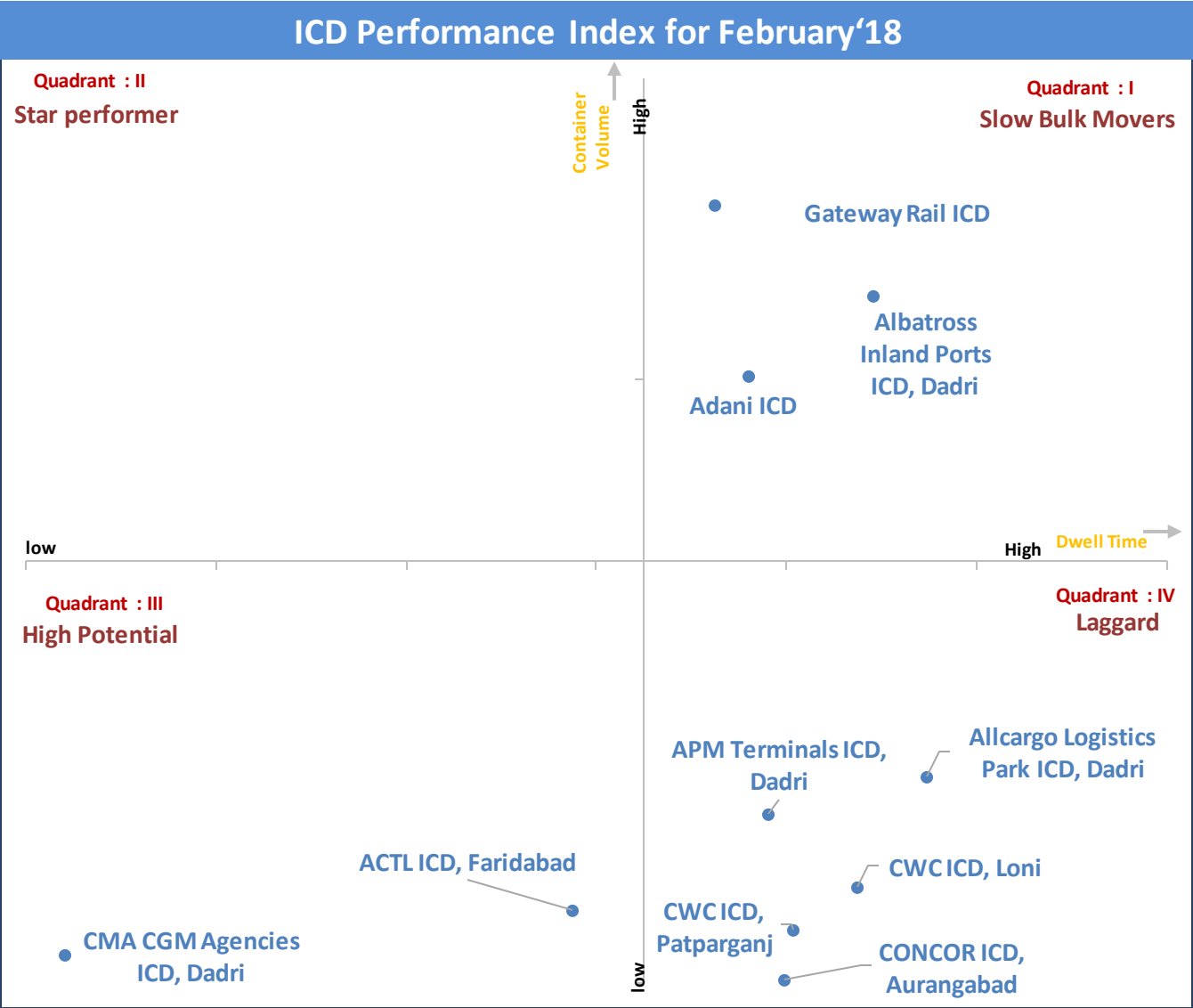
Gujrat CFS Performance Index for February'18

Quadrant : II
Star performer

Quadrant : I
Slow Bulk Movers

Container Volume — High

Saurashtra CFS, Mundra

— Adani CFS, Hazira

Seabird CFS, Hazira

Ashutosh CFS, Mundra

Dwell Time

low   High

Quadrant : III

High Potential

Hind Mundra Terminals CFS, Mundra

TG Terminals CFS, Mundra

Seabird CFS, Mundra

— Honey Comb CFS, Mundra

MICT CFS, Mundra

Transworld CFS, Mundra

Adani CFS Eximyard,...

Mundhra CFS, Mundra

All Cargo CFS, Mundra

Hind Terminal CFS, Hazira

low

Quadrant : IV
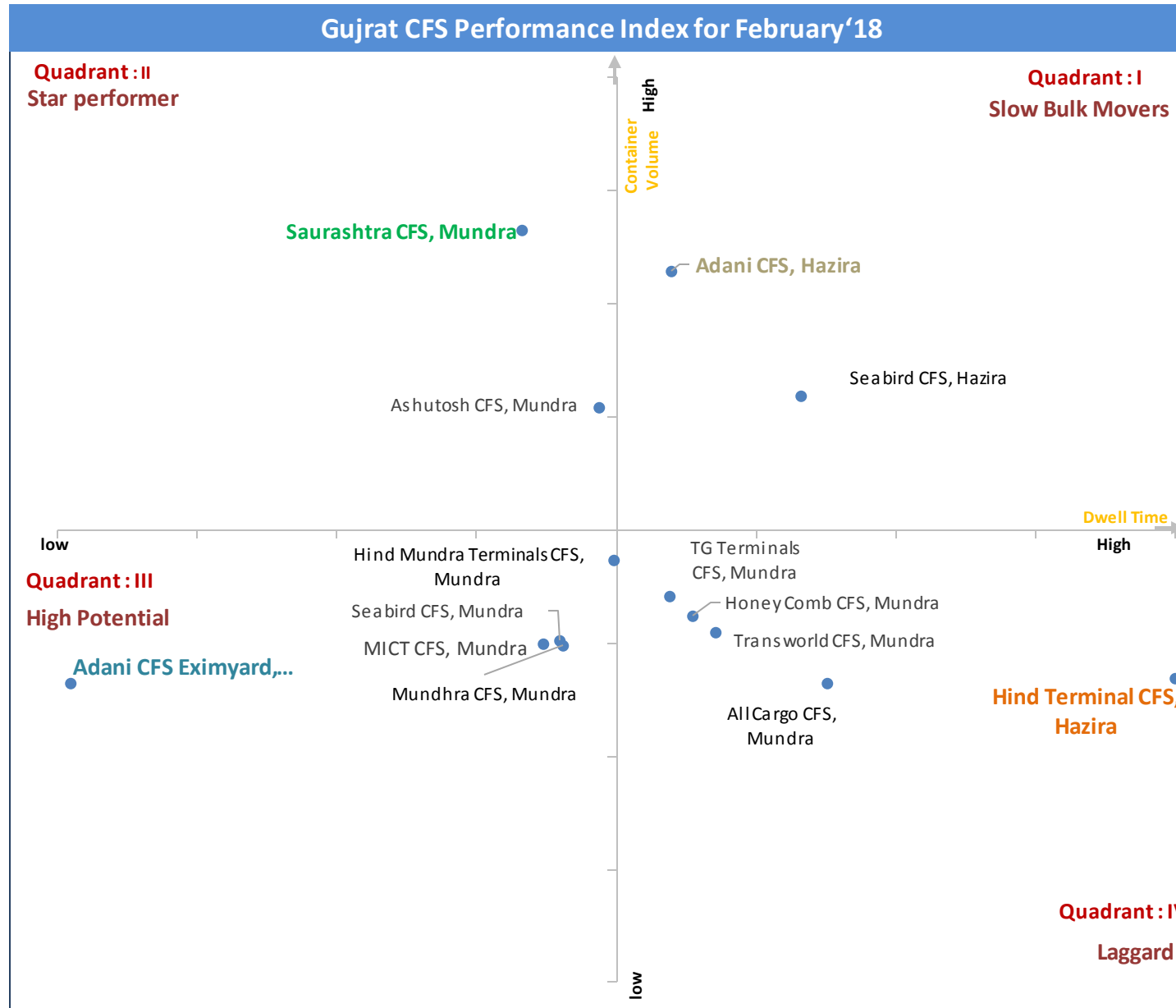
Laggard

Legends

Top in category

🟩	**Star performer**
🟫	**Slow bulk mover**
🟦	**High potential**
🟧	**Laggard**

ICDs : Performance Index

The below graph depicts the Performance Index for all ICDs for Feb'18. The Quadrant II represent the best ICD with high frequency Index i.e. high container volume at lower dwell time
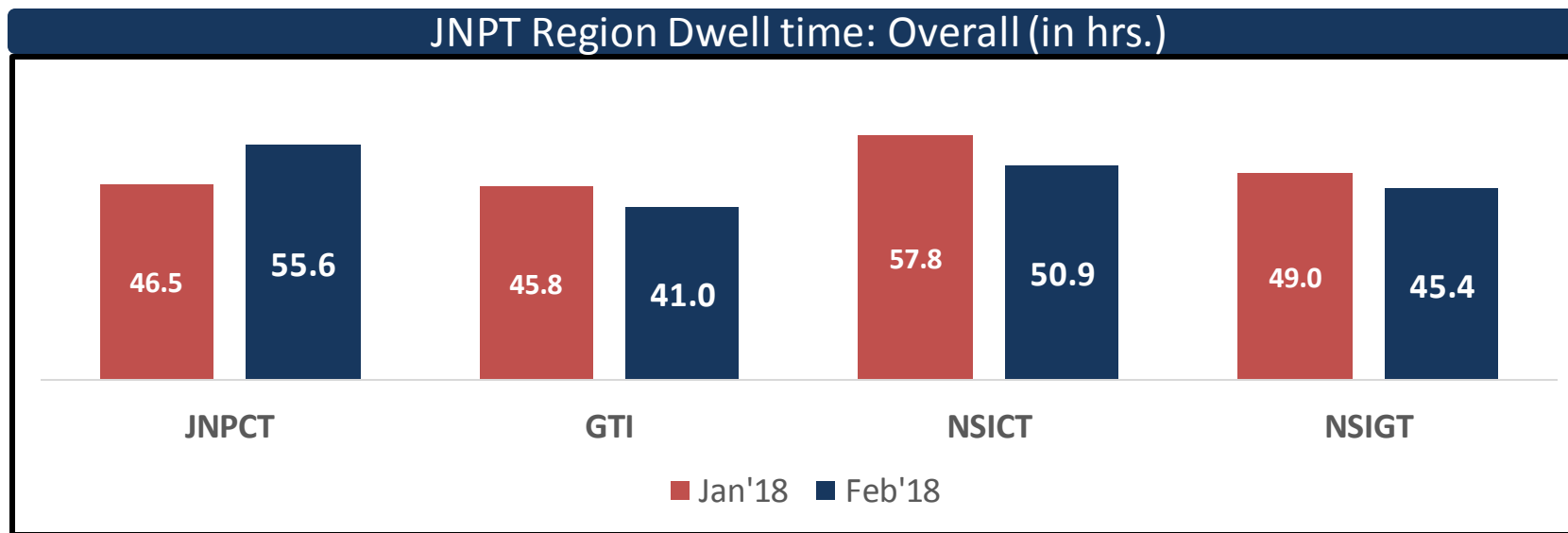
ICD Performance Index for February'18

Quadrant : II
Star performer

Container Volume — High

Quadrant : I
Slow Bulk Movers

- Gateway Rail ICD
- Albatross Inland Ports ICD, Dadri
- Adani ICD

low — High — Dwell Time

Quadrant : III
High Potential

Quadrant : IV
Laggard

- Allcargo Logistics Park ICD, Dadri
- APM Terminals ICD, Dadri
- ACTL ICD, Faridabad
- CWC ICD, Loni
- CWC ICD, Patparganj
- CMA CGM Agencies ICD, Dadri
- CONCOR ICD, Aurangabad

low

PERFORMANCE TREND METRICS

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JNPT port dwell time trend :

The below table shows the overall port dwell time (i.e. import and export cycle combine) trend of all the JNPT Port terminals for Feb'18. Port dwell time is the time duration between the entry of the container in Port terminal to the time it moves out of the Port terminal
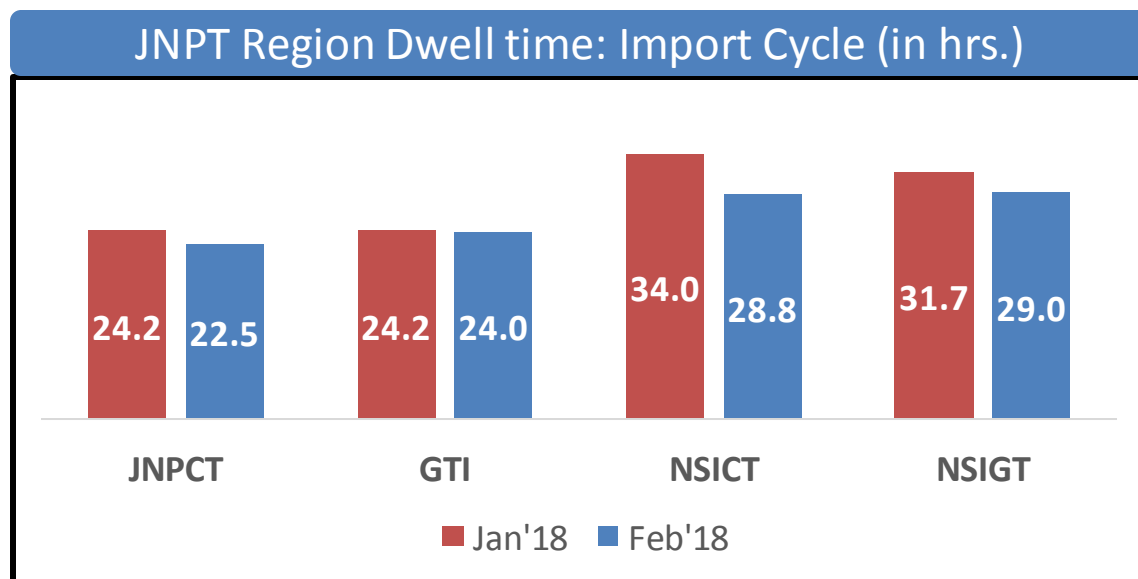
JNPT Region Dwell time: Overall (in hrs.)

	JNPCT	GTI	NSICT	NSIGT
Jan'18	46.5	45.8	57.8	49.0
Feb'18	55.6	41.0	50.9	45.4

■ Jan'18 ■ Feb'18

The overall JNPT region average dwell time for Feb'18 is 47 hrs as compared to last month Jan'18 is 48 hrs

The below tables showcase the Import and Export cycle dwell time for both rail and truck bound containers for month of Jan'18 and Feb'18
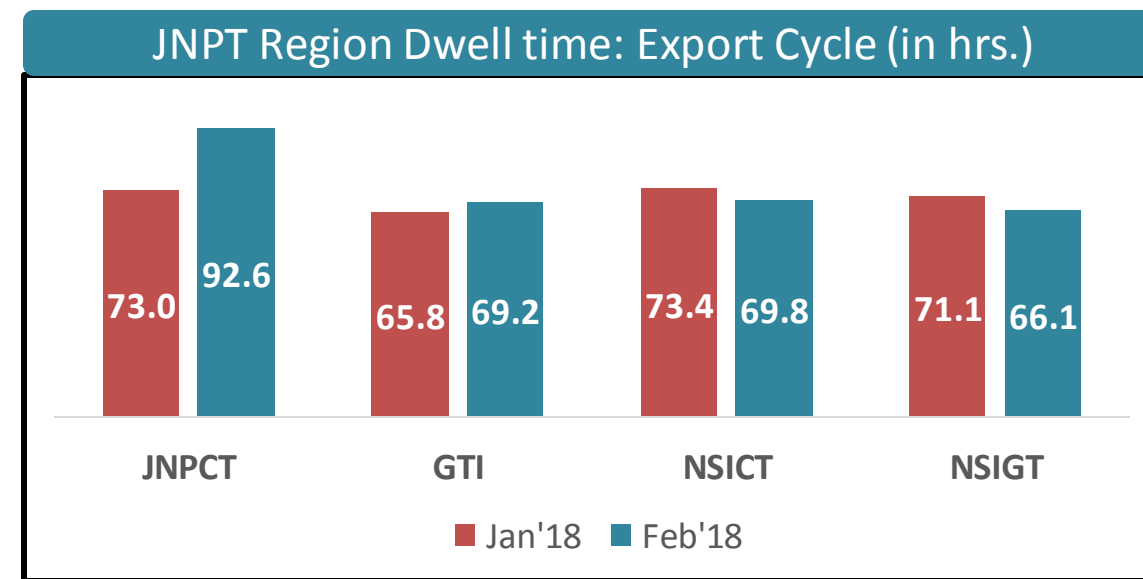
JNPT Import cycle Trend

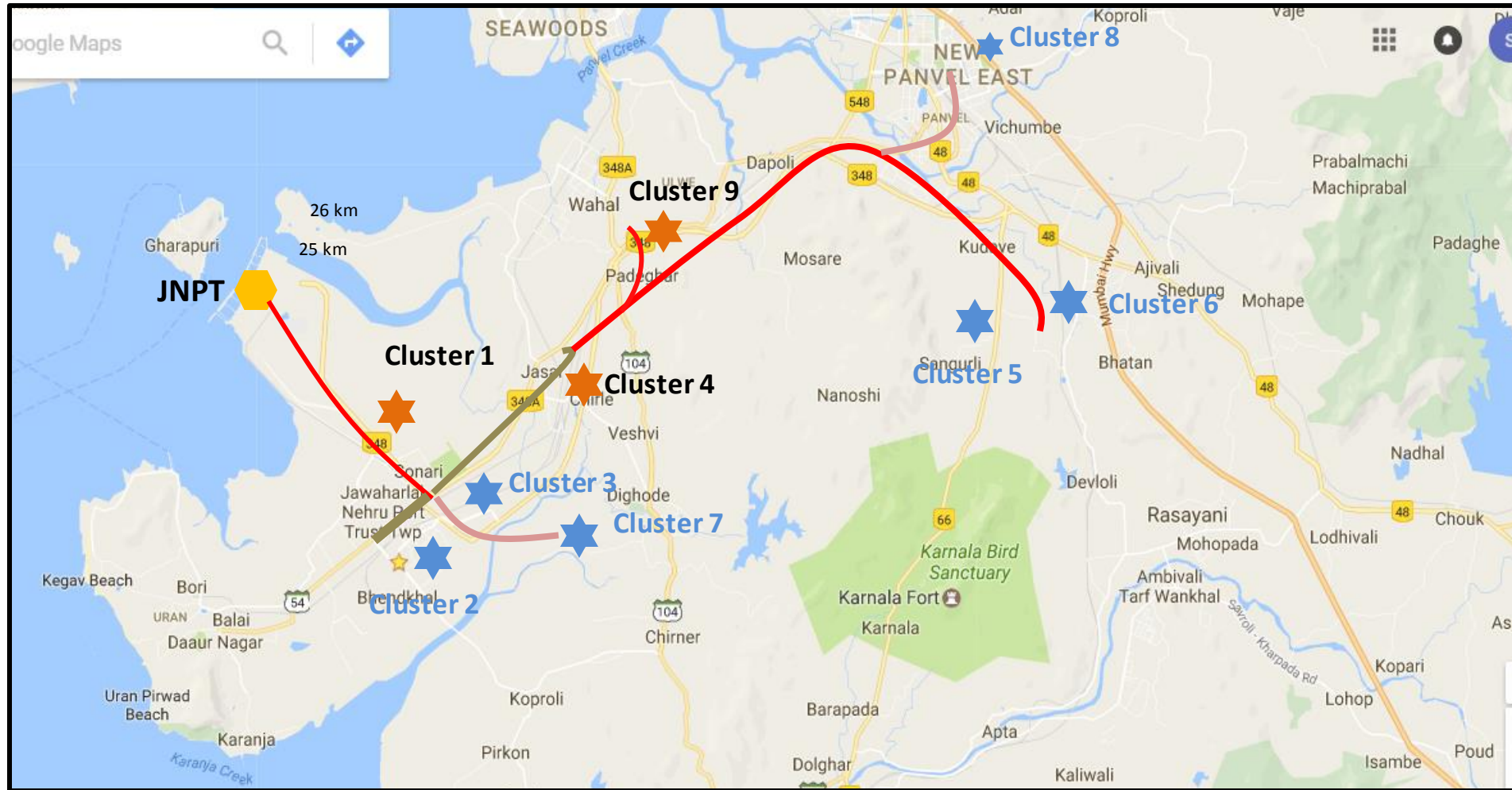**The average import cycle dwell time of JNPT region port terminals for Feb'18 is 25 hrs.**

JNPT Region Dwell time: Import Cycle (in hrs.)

	JNPCT	GTI	NSICT	NSIGT
Jan'18	24.2	24.2	34.0	31.7
Feb'18	22.5	24.0	28.8	29.0

■ Jan'18 ■ Feb'18

JNPT Export cycle Trend

The average export cycle dwell time of JNPT region port terminals for Feb'18 is 76 hrs

JNPT Region Dwell time: Export Cycle (in hrs.)

	JNPCT	GTI	NSICT	NSIGT
Jan'18	73.0	65.8	73.4	71.1
Feb'18	92.6	69.2	69.8	66.1

■ Jan'18 ■ Feb'18

TRANSIT TIME METRICS

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Congestion Analysis around Mumbai Region

Cluster 1	Cluster 2
JNPT Area	Bhendkhal area, Khopate road

Cluster 3	Cluster 4
Sonari area, JNPT road	Chirle area, JNPT road

Cluster 5	Cluster 6
Plaspa area, Coachi kanyakumari Highway	Salva aptard area, Bangalore highway

Cluster 7	Cluster 8
Patilpada area, Khopate JNPT road	Taloja, Navi Mumbai

Cluster 9
Padhegar area

Note : Please find the respective CFS in each cluster in annexure section

It is seen that Cluster 1 , 4 and 9 have congestion bottleneck

GTI Terminal

Congestion Level

Export Cycle :-

Import Cycle :-

JNPCT Terminal

Congestion Level

Export Cycle :-

Import Cycle :-

NSICT Terminal

Congestion Level

Export Cycle :-

Import Cycle :-

NSIGT Terminal

Congestion Level

Export Cycle :-

Import Cycle :-

Note : Congestion is measured w.r.t actual time taken to cover the respective distance between clusters and terminals

Legends

High Congestion

Medium Congestion

Low Congestion

Cluster with bottleneck

Cluster without bottleneck

Container movement around JNPT Port terminal region via Truck

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HEAT MAP : JNPCT Port Terminal

Heat Map : Feb '18

Region	Feb'18	Jan'18
Mumbai Region	39%	33%
Pune	27%	27%
NH8	21%	25%
NH3	3%	4%
Others	10%	10%

The heat map above depicts the movement of containers in and around the Mumbai region.

HEAT MAP : NSICT Port Terminal

Heat Map : Feb '18

Region	Feb'18	Jan'18
Mumbai Region	75%	34%
Pune	6%	27%
NH8	8%	25%
NH3	1%	4%
Others	10%	10%

The heat map above depicts the movement of containers in and around the Mumbai region.

Container Movement around JNPT region via Train

The map shows the volume wise container movement through different railway routes in export and import cycle for Feb'18

IMPORT CYCLE

Bhopal Route — 8.6%
Vadodara Route — 27.6%
Nagpur Route — 5.3%
Panvel Route — 58.5%

EXPORT CYCLE

Bhopal Route — 14.5%
Vadodara Route — 21.3%
Nagpur Route — 11.9%
Panvel Route — 52.3%
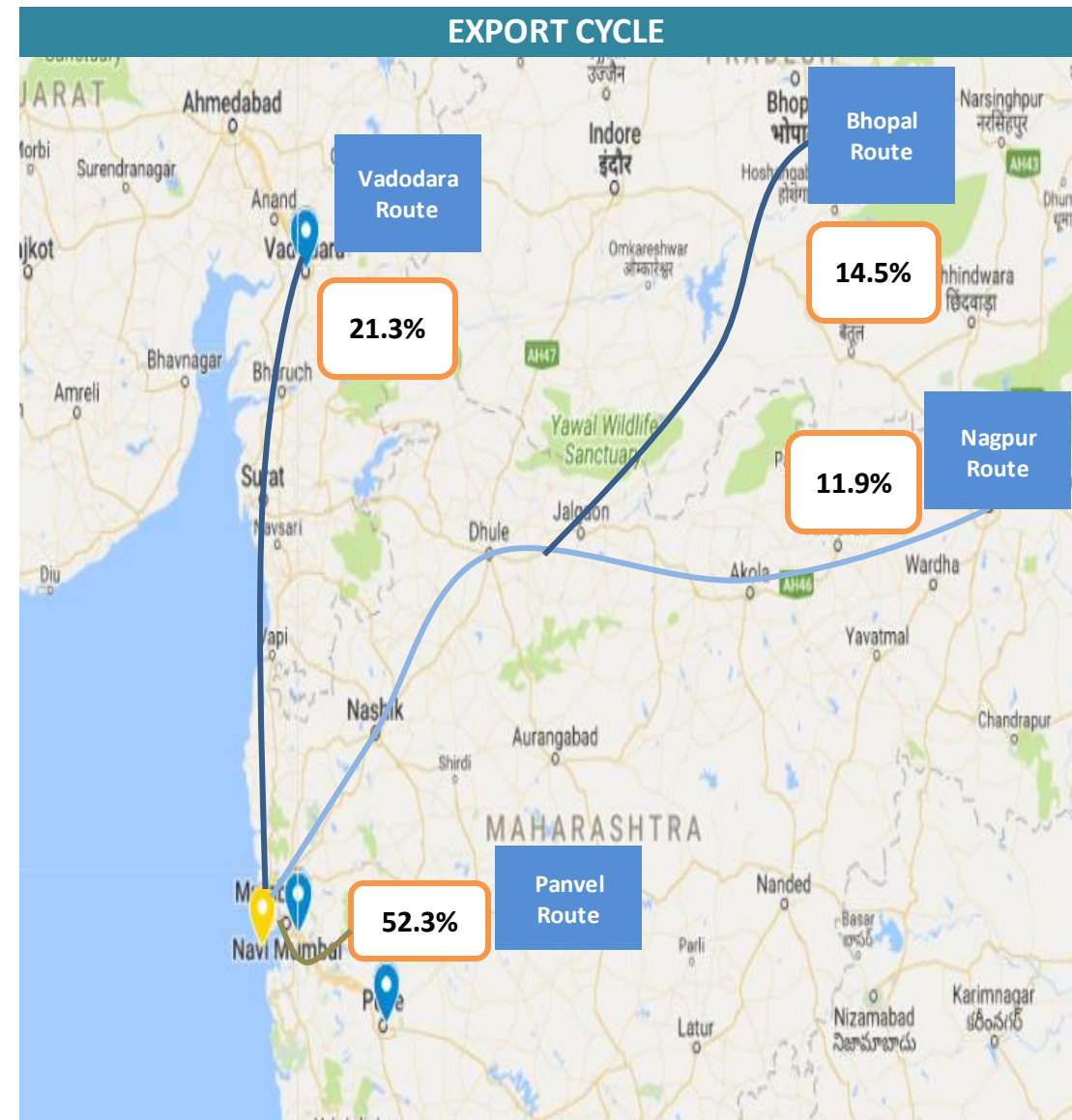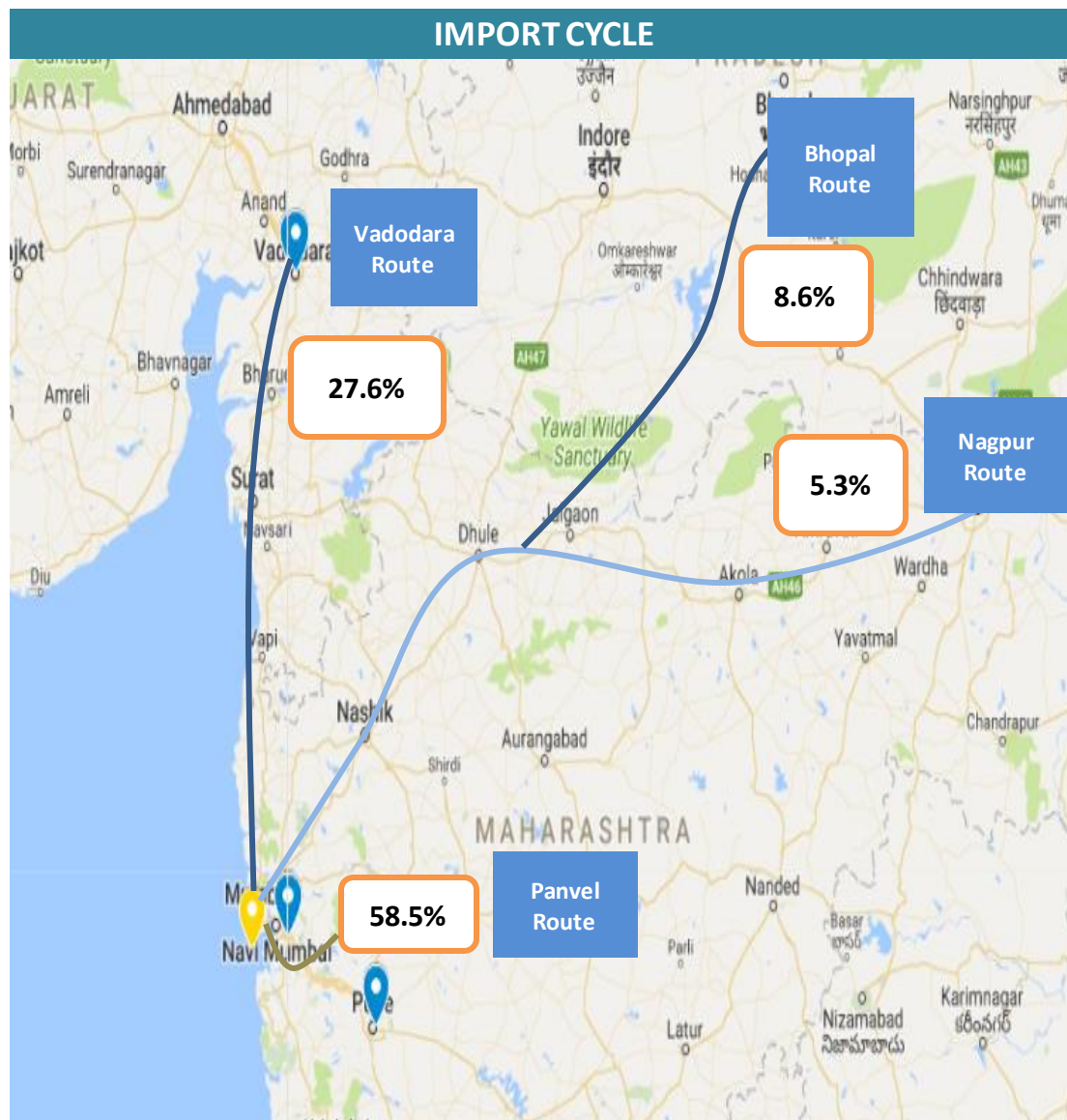
The below table shows all the toll plazas covered under DLDS connected with JNPT

Avg. Travel Time & Speed between Toll Plazas (Feb'18)					
Source	Destination Toll Plaza	Inter Distance (Km)	Avg. Travel Time (Hr)	Feb'18 Avg. Speed (Km/Hr)	Jan'18 Avg. speed (km/hr)
JNPT	Khaniwade	94	7.3	12.9	13.1
JNPT	Khalapur	60	4.1	14.8	14.6
Khaniwade	Charoti	50	1.3	38.2	35.7
Charoti	Boriach	126	4.6	27.5	27.4
Boriach	Bharthan	142	4.3	33.1	32.3
Bharthan	Kishangarh	686	31.6	21.7	22.2
Bharthan	Vasad	60	1.5	39.2	40
Kishangarh	Daulatpura	128	3.1	41.2	41.3

Map
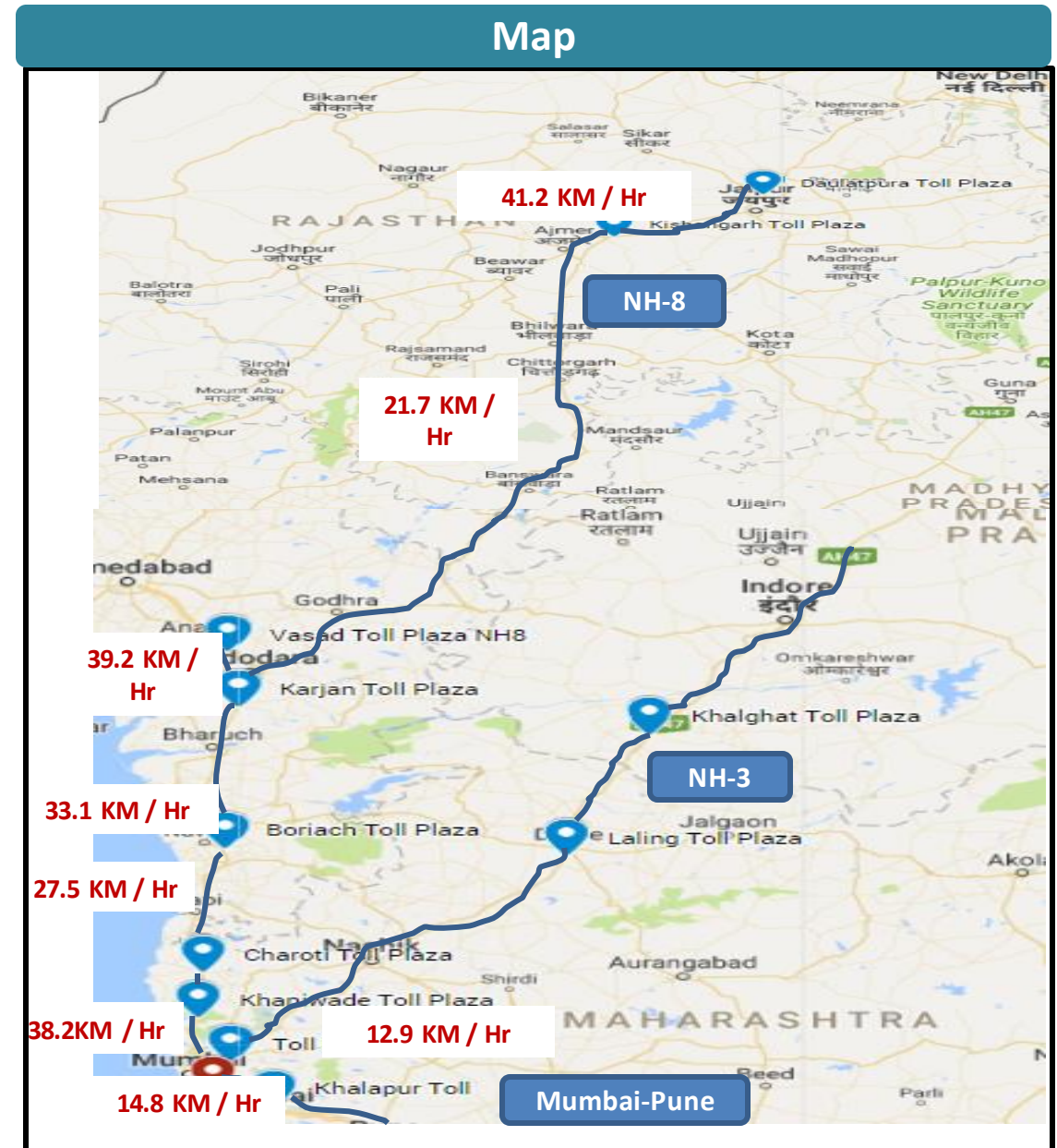
The below table shows all the toll plazas covered under DLDS in **Mundra region**.

Avg. Travel Time & Speed between Toll Plazas (Feb'18)					
Source	Destination Toll Plaza	Inter Distance (Km)	Avg. Travel Time (Hr)	Avg. Speed Feb'18 (Km/Hr.)	Avg. Speed Jan'18 (Km/Hr.)
MICT	Mokha	28	1.2	**22.6**	**23.3**
Mokha	Makhel	150	6.1	**24.8**	**22.7**
Mokha	Surajbari	115	4.9	**23.5**	**24.5**

Map
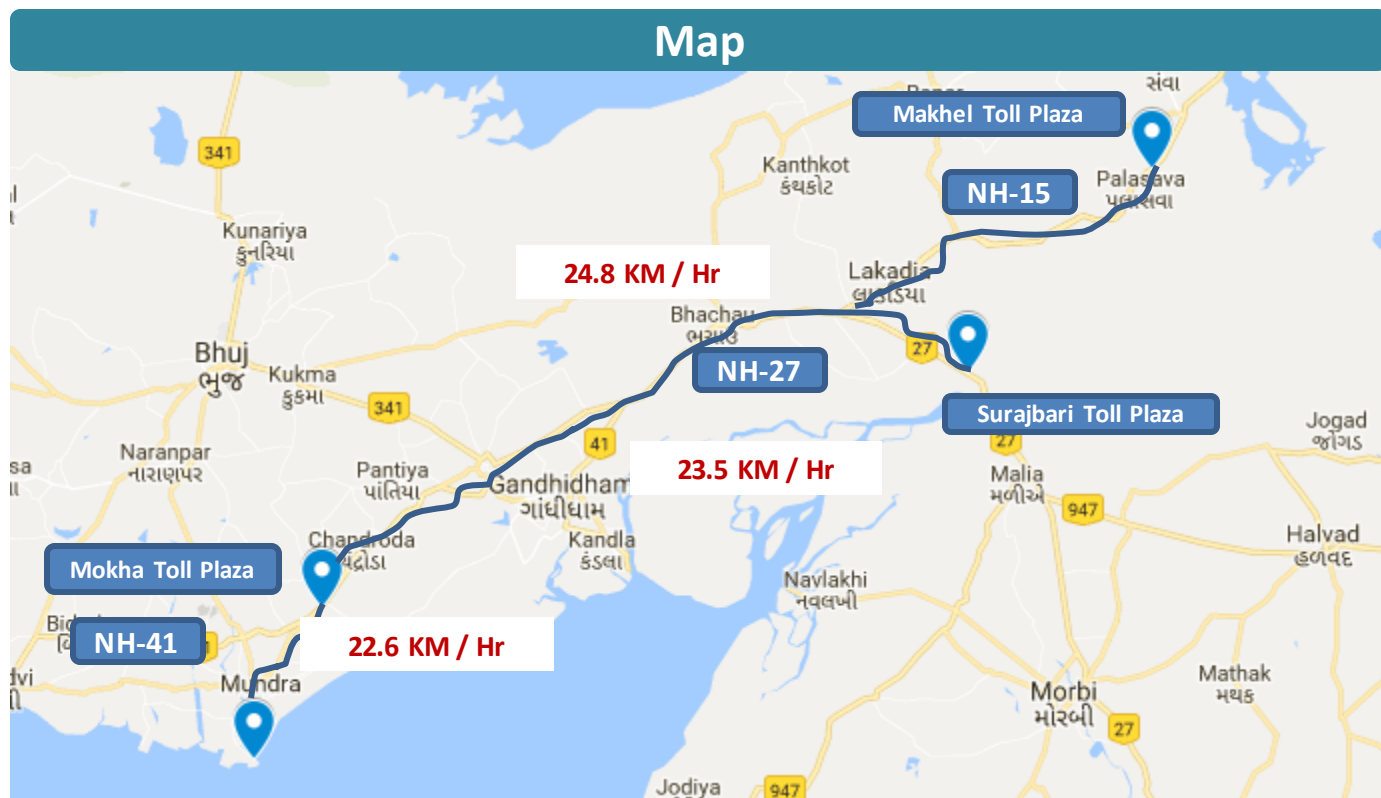
ANNEXURE

JNPT REGION :
TRADE PERFORMANCE

PORT IMPORT via TRAIN

The Port Dwell time data for train movement in import cycle is depicted below. Port dwell time is the time duration between the entry of the container in Port terminal to the time it moves out of the Port terminal

Port	Jan'18 (in Hrs)	Feb'18 (in Hrs)
GTI	62.9	45.8
JNPCT	60.2	54.8
NSICT	68.4	49
NSIGT	77.3	61

IMPORT CYCLE - PORT DWELL TIME(IN HOURS) (TRAIN)

Jan'18 Feb'18

	GTI	JNPCT	NSICT	NSIGT
Jan'18	62.9	60.2	68.4	77.3
Feb'18	45.8	54.8	49	61

Container Volume Handled : Day wise (via train)

Port Terminals	Port Handling limit		Within 5-8 days	More than 8 days
	Within 2 days	Within 2-5 days		
GTI :	53%	32%	5%	10%
JNPCT:	44%	36%	9%	11%
NSICT:	49%	25%	9%	17%
NSIGT:	40%	31%	10%	19%

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PORT IMPORT via TRUCK

The Port Dwell time data for Truck movement in import cycle is depicted below. Port dwell time is the time duration between the entry of the container in Port terminal to the time it moves out of the Port terminal

Port	Jan'18(in Hrs)	Feb'18(in Hrs)
GTI	19.4	21.6
JNPCT	22.1	20.3
NSICT	32.1	28.3
NSIGT	28.5	26.4

IMPORT CYCLE - PORT DWELL TIME(IN HOURS) (Truck)

Jan'18 Feb'18

	GTI	JNPCT	NSICT	NSIGT
Jan'18	19.4	22.1	32.1	28.5
Feb'18	21.6	20.3	28.3	26.4

Container Volume Handled : Day wise (via truck)

Port Terminals	Port Handling limit		Within 5-8 days	More than 8 days
	Within 2 days	Within 2-5 days		
GTI :	84%	15%	1%	0%
JNPCT:	87%	13%	0%	0%
NSICT:	73%	24%	2%	1%
NSIGT:	79%	18%	1%	2%

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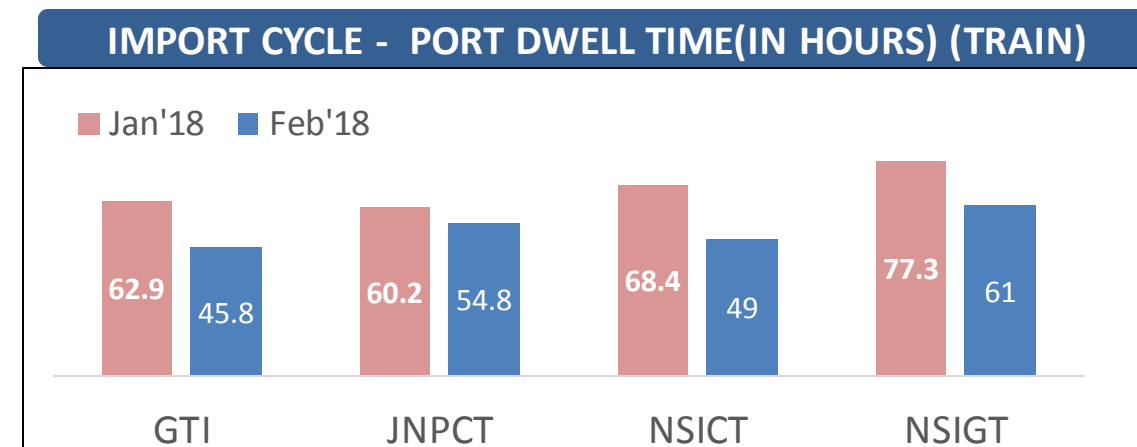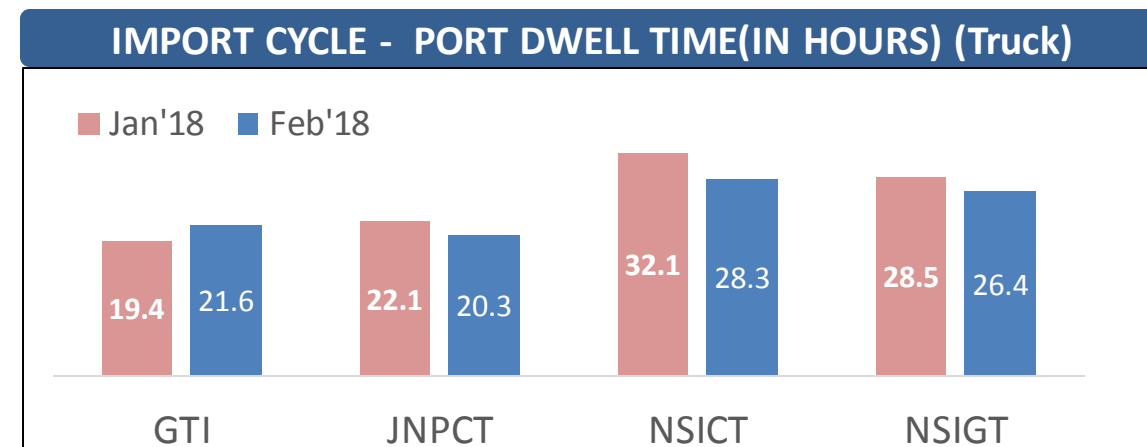
PORT EXPORT via TRAIN

The Port Dwell time data for train movement in Export cycle is depicted below. Port dwell time is the time duration between the entry of the container in Port terminal to the time it moves out of the Port terminal

Port	Jan'18 (in Hrs)	Feb'18 (in Hrs)
GTI	98.7	101.7
JNPCT	107.5	153.2
NSICT	68.3	113.9
NSIGT	66.3	98.5

Export CYCLE - PORT DWELL TIME(IN HOURS) (TRAIN)

Legend: ■ Jan'18 ■ Feb'18

	GTI	JNPCT	NSICT	NSIGT
Jan'18	98.7	107.5	68.3	66.3
Feb'18	101.7	153.2	113.9	98.5

Container Volume Handled : Day wise (via train)

Port Terminals	Port Handling limit		Within 5-8 days	More than 8 days
	Within 2 days	Within 2-5 days		
GTI :	16%	46%	31%	7%
JNPCT:	5%	33%	30%	32%
NSICT:	12%	42%	35%	11%
NSIGT:	17%	47%	32%	4%

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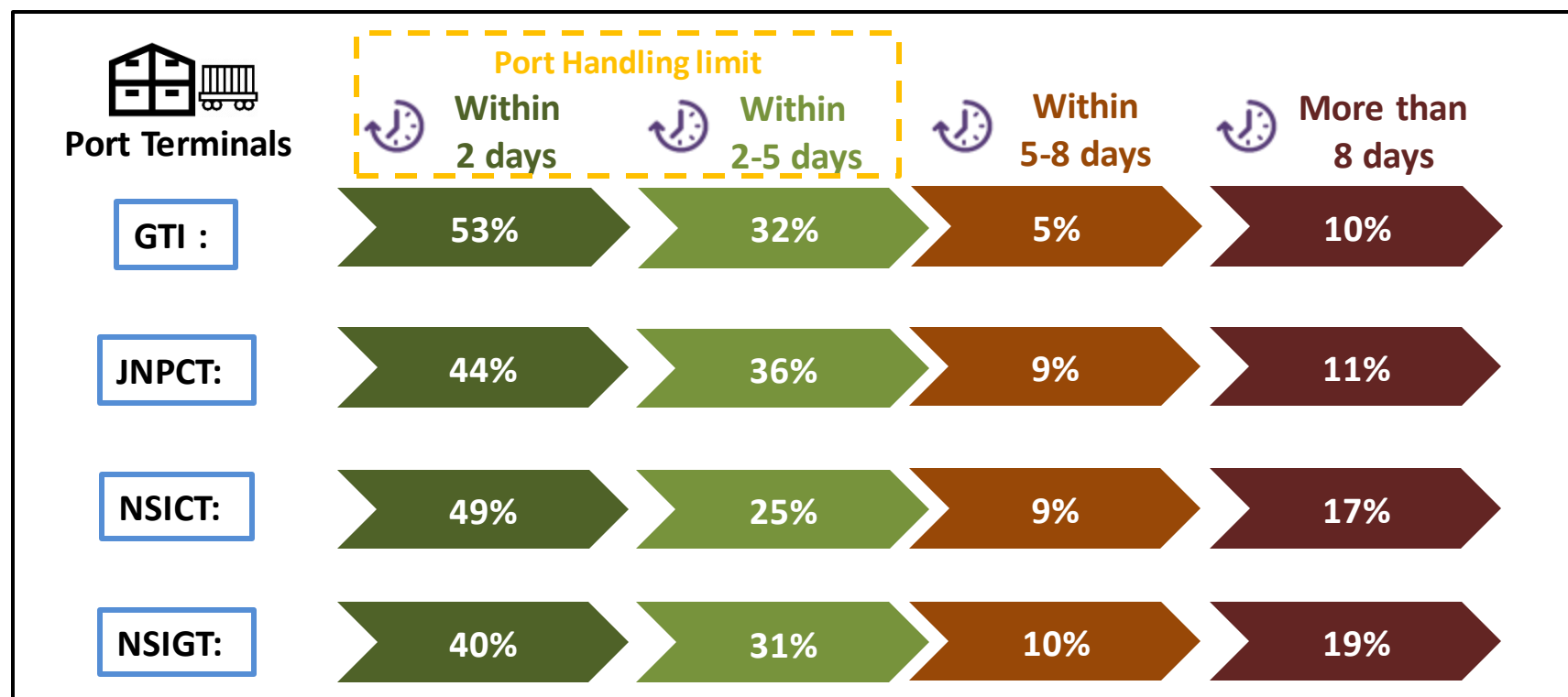DMICDC LOGISTICS DATA SERVICES LTD
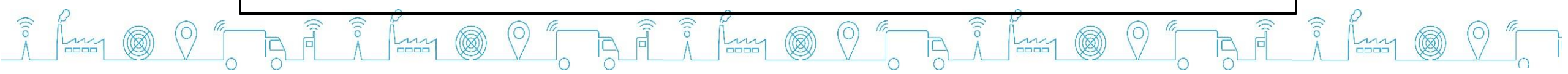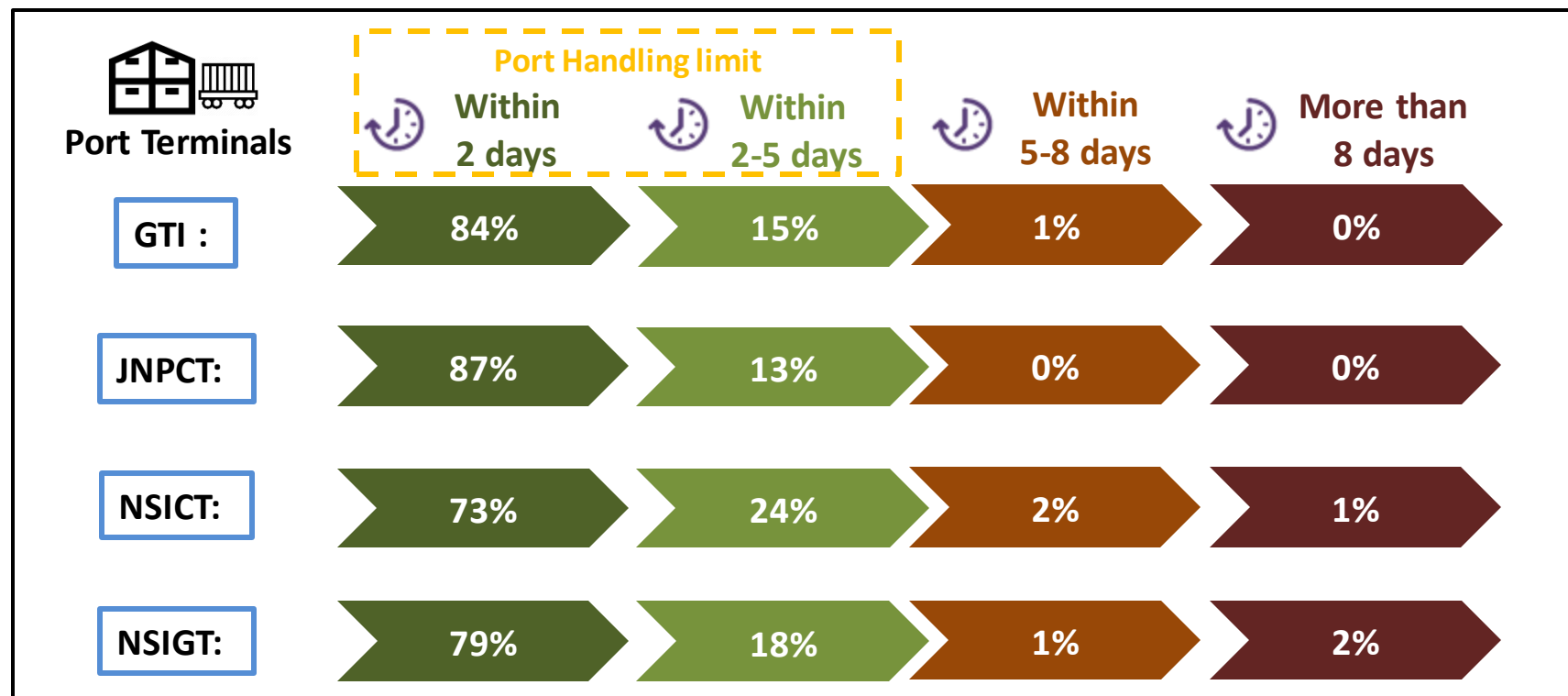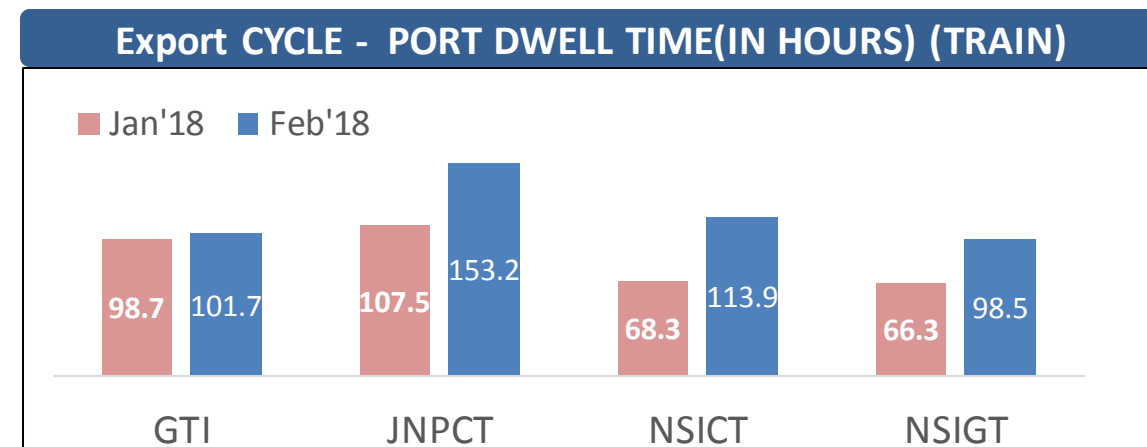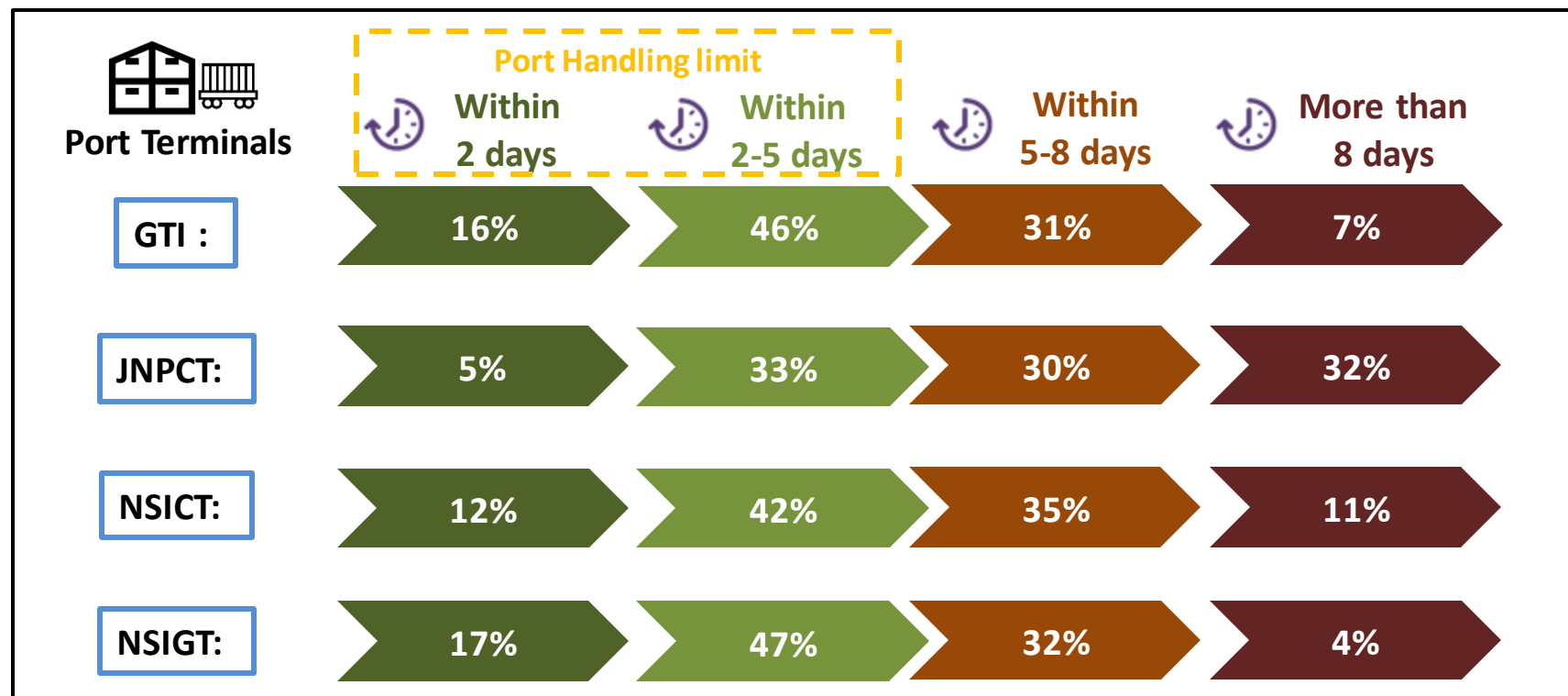
PORT EXPORT via TRUCK

The Port Dwell time data for Truck movement in Export cycle is depicted below. Port dwell time is the time duration between the entry of the container in Port terminal to the time it moves out of the Port terminal

Port	Jan'18 (in Hrs)	Feb'18 (in Hrs)
GTI	63.4	67.1
JNPCT	71.9	90.7
NSICT	68.3	64.1
NSIGT	66.3	61.5

Export CYCLE - PORT DWELL TIME(IN HOURS) (Truck)

■ Jan'18 ■ Feb'18

	GTI	JNPCT	NSICT	NSIGT
Jan'18	63.4	71.9	68.3	66.3
Feb'18	67.1	90.7	64.1	61.5

Container Volume Handled : Day wise (via truck)

Port Terminals	Port Handling limit — Within 2 days	Within 2-5 days	Within 5-8 days	More than 8 days
GTI :	26%	71%	2%	1%
JNPCT:	10%	66%	22%	2%
NSICT:	34%	60%	5%	1%
NSIGT:	35%	61%	3%	1%

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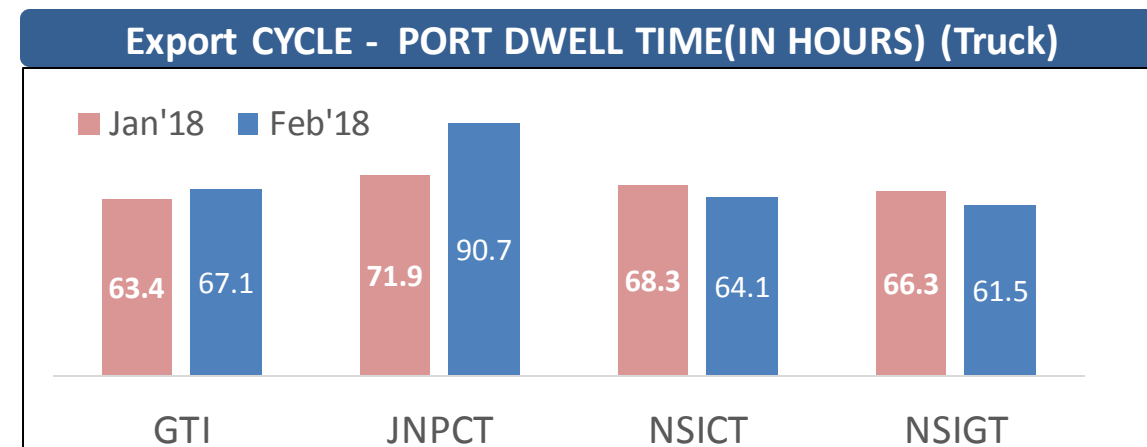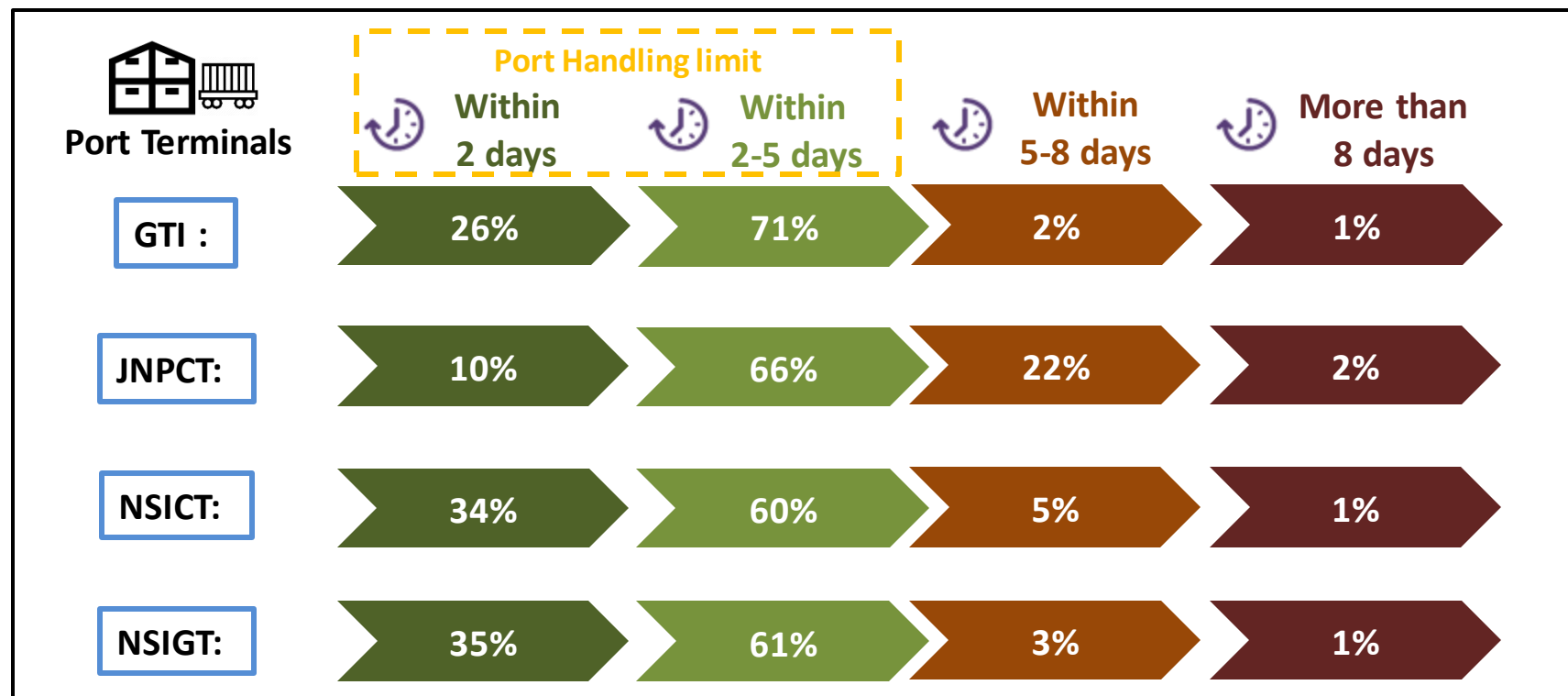
Container Handling time : Import Cycle

Container handling time in import cycle refers to the time taken by container to reach 1st railway station (i.e. JNPT railway station) from the moment they have been cleared from Port (i.e. Port Out). The below data is for month of Feb'18

GTI	Terminal Gate	Import Cycle	10 hrs	Railway Siding Out
JNPCT	Terminal Gate	Import Cycle	4 hrs	Railway Siding Out
NSICT	Terminal Gate	Import Cycle	8 hrs	Railway Siding Out
NSIGT	Terminal Gate	Import Cycle	9 hrs	Railway Siding Out
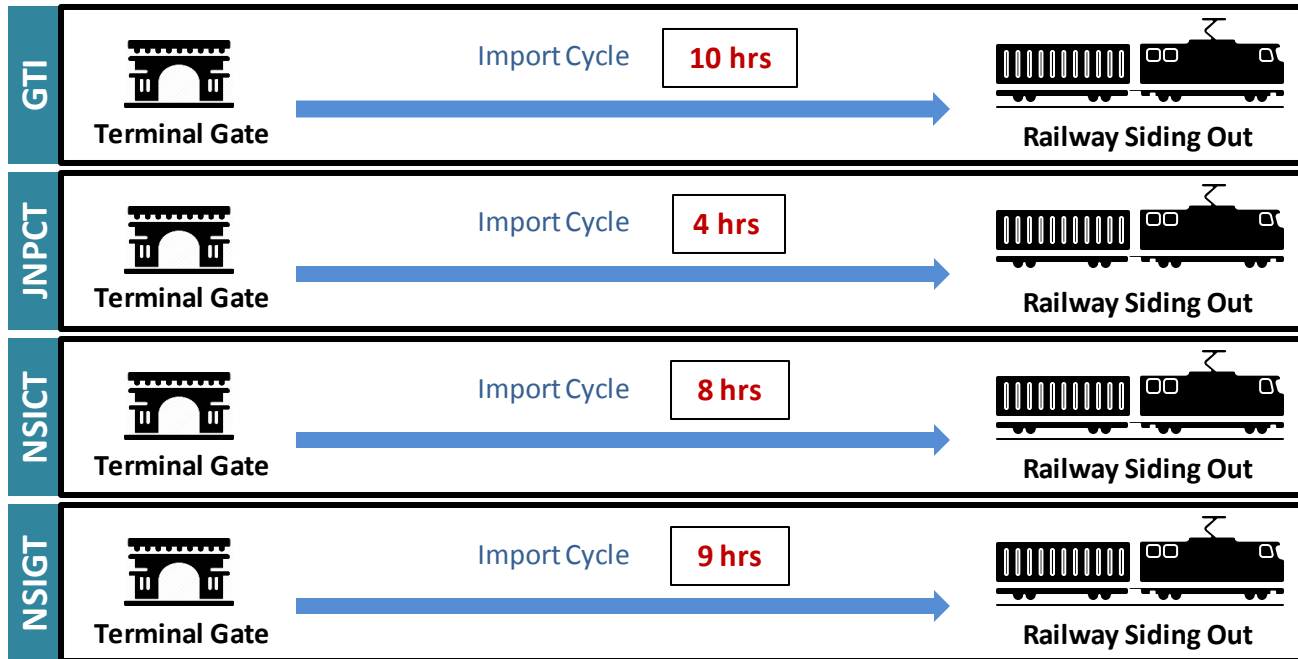
Container Handling time : Export Cycle

Container handling time in export cycle refers to the time taken by container to reach Port terminal (i.e. Port In) from last railway station (i.e. JNPT railway station). The below data is for month of Feb'18

GTI	Terminal Gate	Export Cycle	12 hrs	Railway Siding Out
JNPCT	Terminal Gate	Export Cycle	10 hrs	Railway Siding Out
NSICT	Terminal Gate	Export Cycle	11 hrs	Railway Siding Out
NSIGT	Terminal Gate	Export Cycle	10 hrs	Railway Siding Out

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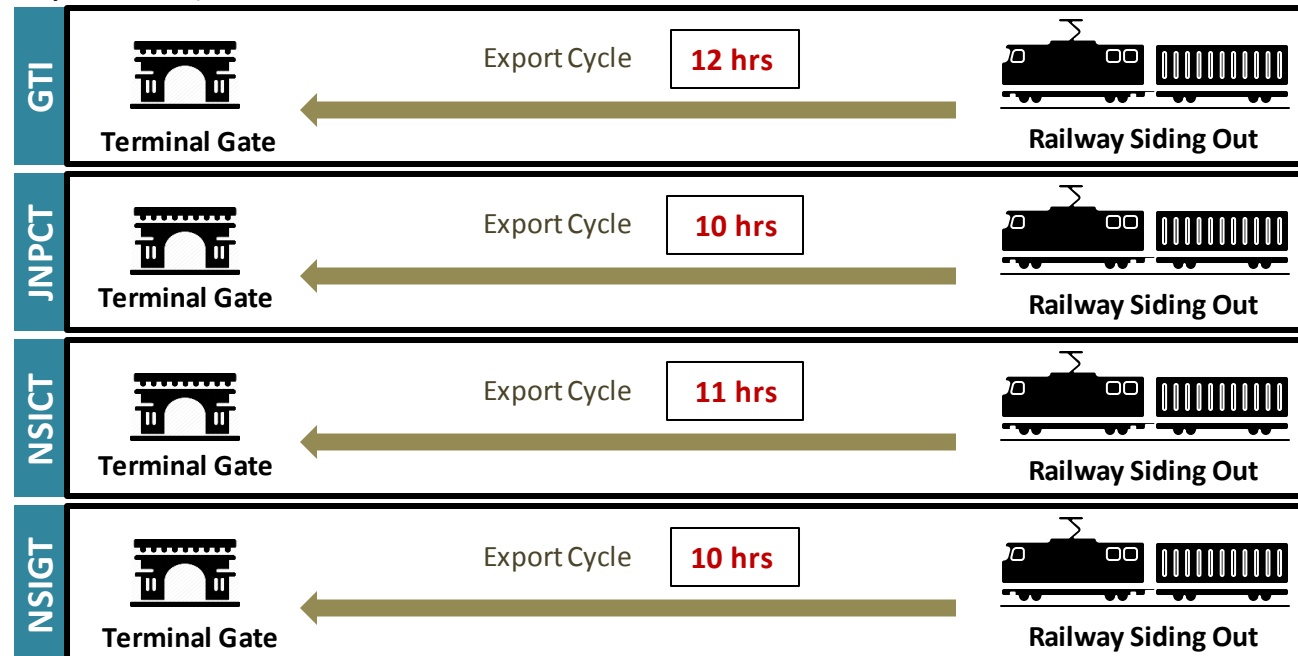
ICD DWELL TIME ANALYSIS

The table below depicts the dwell of all ICDs for month of Jan'18 and Feb'18.

Dwell Time (in Hrs)		
ICD	**Jan'18**	**Feb'18**
Allcargo Logistics Park ICD, Dadri	161.2	174.8
Albatross Inland Ports ICD, Dadri	155.8	169.1
CMA CGM Agencies ICD, Dadri	87.6	84.0
APM Terminals ICD, Dadri	173.3	158.1
ACTL ICD	155	137.5
CWC Loni	158.3	167.5
CWC ICD, Patparganj	166.7	160.6
CONCOR ICD	193.4	159.7

Top Performing ICD	
CMA CGM Agencies ICD, Dadri	84 hrs.

Low Performing ICD	
Allcargo Logistics Park ICD, Dadri	174.8 hrs.

ICD – DWELL OVERVIEW (FEB' 18)   (IN HRS)

Avg- 158 hrs.

ICD	Feb'18
Allcargo Logistics Park ICD, Dadri	174.8
Albatross Inland Ports ICD, Dadri	169.1
ACTL ICD, Faridabad	137.5
CWC ICD, Patparganj	160.6
CWC ICD, Loni	167.5
CONCOR ICD, Aurangabad	159.7
Adani ICD	156.0
Gateway Rail ICD	152.4
CMA CGM Agencies ICD, Dadri	84.0
APM Terminals ICD, Dadri	158.1

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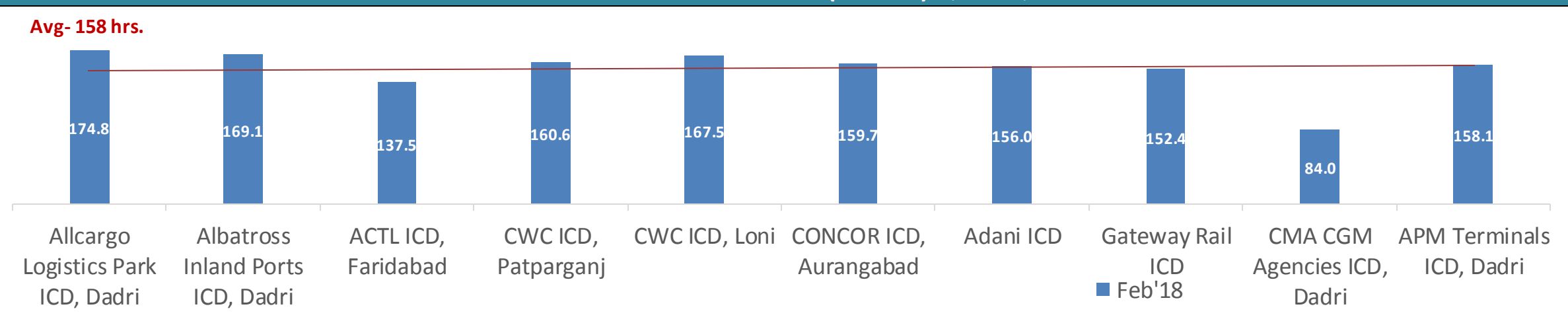
Transit Time Analysis

Below table shows the average delivery time of ICD in import cycle i.e. Port out to ICD in via rail transportation

ICD- AVG DELIVERY TIME PORT OUT TO ICD IN (TRAIN)	
Region	**Feb'18**
NCR region	3.4 days
Aurangabad	2.4 days

Below table shows the average delivery time of ICD in export cycle i.e. ICD out to port in via rail transportation

ICD- AVG DELIVERY TIME ICD OUT TO PORT IN (TRAIN)	
Region	**Feb'18**
NCR region	2.9 days
Aurangabad	4.4 days

LEAD TIME ANALYSIS

Below table shows the average lead time of ICD in import cycle i.e. Port in to ICD out via train. The ICD's in NCR region have low dwell time as compare to Aurangabad region, thus making the lead time for the Aurangabad region higher as compare to NCR region

ICD- AVG LEAD TIME (TRAIN)	
Region	**Feb'18**
NCR region	12.8 days
Aurangabad	13.4 days

Calculation :

Port Dwell Time + Port to ICD Delivery Time + ICD Dwell Time = Avg. Lead Time from Port to ICD

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CFS DWELL TIME ANALYSIS

Below table shows the dwell time for the respective CFS's .

CFS Dwell Time (in hrs)					
CFS	**Jan'18**	**Feb'18**	**CFS**	**Jan'18**	**Feb'18**
All Cargo Logistics CFS, Navi Mumbai	84.3	85.2	International Cargo Terminals (ULA) CFS, Navi Mumbai	101.1	82.6
Ameya Logistics CFS, Navi Mumbai	98.5	80.2	JWC Logistics Park CFS	85.6	57.9
APM (Maersk India) CFS, Navi Mumbai	85.2	67.7	Maersk Annex (APM)CFS, Navi Mumbai	97.3	95.2
Apollo Logisolutions CFS, Panvel	89.8	81.6	Maharashtra State Corp CFS	71.5	55.2
Ashte Logistics CFS, Panvel	93.8	82.7	Navkar Corporation Yard 1 CFS, Panvel	94.5	89.5
Balmer & Lawrie CFS, Navi Mumbai	94.1	92.2	Navkar Corporation Yard 2 CFS, Panvel	87.3	76.5
Continental Warehousing CFS, Navi Mumbai	91.8	80.6	Navkar Corporation Yard 3 CFS, Panvel	85.3	83
CWC Dronagiri CFS, Navi Mumbai	76.2	61.3	Ocean Gate CFS, Panvel	98.3	77
CWC Hind Terminal CFS, Navi Mumbai	90.2	87.9	Punjab Conware CFS, Navi Mumbai	83.7	76.8
Dronogiri Rail Terminal CFS, Navi Mumbai	77.3	66.2	SBW Logistics CFS, Navi Mumbai	84.3	85.4
Gateway Distriparks CFS, Navi Mumbai	90.9	85.2	Seabird CFS, Navi Mumbai	92.9	86.3
Indev Logistics CFS, Panvel	98.8	76.5	Speedy Multimode CFS, JNPT	81.0	61.6
			Transindia Logistics Park, Navi Mumbai	83.6	74.8
International Cargo Terminal CFS	90.1	79	Take Care Logistics CFS	123.3	119.3
TG Terminals CFS	65.5	70.1	JWR CFS	54	52.3

CFS – DWELL OVERVIEW   (IN HRS)

Average: 83.2 hrs.

| 85.2 | 80.2 | 67.7 | 81.6 | 82.7 | 92.2 | 80.6 | 61.3 | 87.9 | 66.2 | 85.2 | 76.5 | 79 | 82.6 | 57.9 | 95.2 | 55.2 | 89.5 | 76.5 | 83.0 | 77.0 | 76.8 | 85.4 | 86.3 | 61.6 | 74.8 | 119.3 | 70.1 | 52.3 |

All Cargo…, Ameya…, APM…, Apollo…, Ashte…, Balmer &…, Continental…, CWC…, CWC Hind…, Dronogiri…, Gateway…, Indev…, Internation…, Internation…, JWC…, Maersk…, Maharashtr…, Navkar…, Navkar…, Navkar…, Ocean Gate…, Punjab…, SBW…, Seabird…, Speedy…, Transindia…, Take Care…, TG…, JWR CFS

■ Feb'18

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Below table shows the top performing CFS's

Top Performing CFS's w.r.t Dwell time (Feb 2018)	
JWR CFS, Navi Mumbai	Dwell Time : 52.3 Hrs
Maharashtra State Corp CFS	Dwell Time : 55.2 Hrs

Below table shows the low performing CFS's

Low Performing CFS's w.r.t Dwell time (Feb 2018)	
Take Care Logistics CFS, Navi Mumbai	Dwell Time : 119.3 Hrs
Maersk Annex (APM)CFS, Navi Mumbai	Dwell Time : 95.2 Hrs

CFS - AVERAGE DELIVERY TIME - GTI TO ALL CFS's IN MUMBAI

Below table shows the average delivery time in import cycle from GTI to all the CFS's

AVERAGE DELIVERY TIME (In Hrs)- GTI TO ALL CFS IN MUMBAI	
CFS	**Feb'18**
Jawaharlal Nehru Port CFS (Speedy Multimode Ltd CFS)	1.8
Balmer & Lawrie & Co. Ltd.,CFS	2.0
Gateway Distriparks Ltd	3.1
APM (Maersk India Pvt. Ltd)CFS	2.0
Continental Warehousing (Nhava Sheva) Ltd.	1.8
Seabird Marine Services Pvt Ltd.	3.3
JWC Logistics Park Ltd CFS	3.4
Ameya Logistics Pvt. Ltd.	2.6
Ashte Logistics Pvt. Ltd.	3.3
NAVAKAR CORPORATION LTD.,YARD-1 CFS	3.2
Apollo Logisolutions Ltd.	4.8
Ocean Gate Container Terminals Pvt. Ltd.CFS	2.9
Indev Logistics Pvt. Ltd.CFS	4.2
Transindia Logistics Park Pvt, Ltd CFS	2.6
All Cargo Logistics Ltd., CFS	1.8
Vaishno Logistics Yard CFS	3.7
NAVKAR CORPORATION LTD.,YARD-II CFS	2.6
PUNJAB CONWARE (PW)	2.1
DRONAGIRI RAIL TERMINAL	2.2
CWC LOGISTIC PARK - Opr.Hind Trmnl.	1.7
NAVKAR CORPORATION LTD.YARD-III CFS	3.0
International Cargo Terminals & Infrastructure Private Limited-CFS	3.1
Maersk Annex (APM)CFS	2.8
International Cargo Terminal CFS	2.1
SBW Logistics CFS , Navi Mumbai	4.1
JWR CFS	4.7

CFS - AVERAGE DELIVERY TIME - JNPCT TO ALL CFS's IN MUMBAI

Below table shows the average delivery time in import cycle from JNPCT to all the CFS's

AVERAGE DELIVERY TIME (In Hrs)- JNPCT TO ALL CFS IN MUMBAI	
CFS	**Feb'18**
Jawaharlal Nehru Port CFS (Speedy Multimode Ltd CFS)	1.5
Balmer & Lawrie & Co. Ltd.,CFS	1.8
Gateway Distriparks Ltd	2.7
APM (Maersk India Pvt. Ltd)CFS	1.6
Continental Warehousing (Nhava Sheva) Ltd.	1.7
Seabird Marine Services Pvt Ltd.	2.8
JWC Logistics Park Ltd CFS	3.7
Ameya Logistics Pvt. Ltd.	2.3
Ashte Logistics Pvt. Ltd.	2.8
NAVAKAR CORPORATION LTD.,YARD-1 CFS	3.1
Apollo Logisolutions Ltd.	4.1
Ocean Gate Container Terminals Pvt. Ltd.CFS	2.9
Indev Logistics Pvt. Ltd.CFS	3.4
Transindia Logistics Park Pvt, Ltd CFS	2.3
All Cargo Logistics Ltd., CFS	1.6
Vaishno Logistics Yard CFS	1.1
NAVKAR CORPORATION LTD.,YARD-II CFS	2.5
PUNJAB CONWARE (PW)	1.8
DRONAGIRI RAIL TERMINAL	1.5
MAHARASHTRA STATE WARE. CORP. CFS	1.4
CWC LOGISTIC PARK - Opr.Hind Trmnl.	1.8
NAVKAR CORPORATION LTD.YARD-III CFS	2.5
International Cargo Terminals & Infrastructure Private Limited-CFS	2.5
Maersk Annex (APM)CFS	3.3
International Cargo Terminal CFS	2.0
SBW Logistics CFS , Navi Mumbai	3.7
JWR CFS	2.6

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CFS - AVERAGE DELIVERY TIME - NSICT TO ALL CFS's IN MUMBAI

Below table shows the average delivery time in import cycle from NSICT to all the CFS's

AVERAGE DELIVERY TIME (In Hrs)- NSICT TO ALL CFS IN MUMBAI	
CFS	Feb'18
Jawaharlal Nehru Port CFS (Speedy Multimode Ltd CFS)	2.5
Balmer & Lawrie & Co. Ltd.,CFS	2.5
Gateway Distriparks Ltd	2.9
APM (Maersk India Pvt. Ltd)CFS	3.3
Continental Warehousing (Nhava Sheva) Ltd.	1.7
Seabird Marine Services Pvt Ltd.	2.8
JWC Logistics Park Ltd CFS	3.2
Ameya Logistics Pvt. Ltd.	2.4
Ashte Logistics Pvt. Ltd.	3.8
Navakar Corporation Ltd.,Yard-1 CFS	3.9
Apollo Logisolutions Ltd.	4.1
Ocean Gate Container Terminals Pvt. Ltd.CFS	2.7
Indev Logistics Pvt. Ltd.CFS	4.5
Transindia Logistics Park Pvt, Ltd CFS	2.4
All Cargo Logistics Ltd., CFS	2.3
NAVKAR CORPORATION LTD.,YARD-II CFS	4.9
PUNJAB CONWARE (PW)	1.6
Dronagiri Rail Terminal	1.8
CWC LOGISTIC PARK - Opr.Hind Trmnl.	1.7
Navkar Corporation Ltd.Yard-iii Cfs	3.2
International Cargo Terminals & Infrastructure Private Limited-CFS	3.3
Maersk Annex (APM)CFS	3.0
International Cargo Terminal CFS	2.2
SBW Logistics CFS , Navi Mumbai	9.9
JWR CFS	25.9

CFS - AVERAGE DELIVERY TIME - NSIGT TO ALL CFS's IN MUMBAI

Below table shows the average delivery time in import cycle from NSIGT to all the CFS's

AVERAGE DELIVERY TIME (In Hrs)- NSIGT TO ALL CFS IN MUMBAI	
CFS	Feb'18
Jawaharlal Nehru Port CFS (Speedy Multimode Ltd CFS)	1.6
Balmer & Lawrie & Co. Ltd.,CFS	1.7
Gateway Distriparks Ltd	2.8
APM (Maersk India Pvt. Ltd)CFS	1.8
Continental Warehousing (Nhava Sheva) Ltd.	1.7
Seabird Marine Services Pvt Ltd.	3.8
JWC Logistics Park Ltd CFS	3.2
Ameya Logistics Pvt. Ltd.	2.5
Ashte Logistics Pvt. Ltd.	3.4
Navakar Corporation Ltd.,Yard-1 CFS	3.3
Apollo Logisolutions Ltd.	4.3
Ocean Gate Container Terminals Pvt. Ltd.CFS	2.7
Indev Logistics Pvt. Ltd.CFS	4.1
Transindia Logistics Park Pvt, Ltd CFS	2.8
CWC Dronagiri CFS	28.3
All Cargo Logistics Ltd., CFS	1.7
NAVKAR CORPORATION LTD.,YARD-II CFS	9.6
PUNJAB CONWARE (PW)	1.9
DRONAGIRI RAIL TERMINAL	1.8
Maharashtra State Ware. Corp. Cfs	1.2
CWC LOGISTIC PARK - Opr.Hind Trmnl.	1.8
Navkar Corporation Ltd.Yard-iii Cfs	3.3
International Cargo Terminals & Infrastructure Private Limited-CFS	2.4
Maersk Annex (APM)CFS	3.7
International Cargo Terminal CFS	2.2
SBW Logistics CFS , Navi Mumbai	5.6
JWR CFS	25.6

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Below table shows the delivery time in export cycle from the CFS's to PORT terminals

For Feb'18				
CFS Out Port in (Export Cycle in Hrs)				
CFS	**JNPCT**	**GTI**	**NSICT**	**NSIGT**
CWC LOGISTIC PARK - Opr.Hind Trmnl.	2.3	5.2	4.3	4.4
CWC Dronagiri CFS	5.0	4.3	4.5	5.2
Jawaharlal Nehru Port CFS (Speedy Multimode Ltd CFS)	2.4	4.3	2.9	3.5
Indev Logistics Pvt. Ltd.CFS	4.9	7.5	4.7	4.1
Punjab Conware (Pw)	2.4	4.7	4.3	4.9
Transindia Logistics Park Pvt, Ltd CFS	3.4	5.2	3.3	6.0
Apollo Logisolutions Ltd.	5.7	8.5	9.9	11.6
JWR CFS	3.9	6.6	4.2	6.3
Navkar Corporation Ltd.Yard-III CFS	5.6	9.3	8.7	7.3
Ameya Logistics Pvt. Ltd.	5.8	7.6	6.8	8.4
Ashte Logistics Pvt. Ltd.	5.5	5.2	5.7	10.0
Dronagiri Rail Terminal	3.2	5.5	4.0	7.5
TG Terminals CFS	1.9	4.6	2.4	4.2
Vaishno Logistics Yard CFS	5.3	11.3	-	1.5
Navkar Corporation Ltd.,Yard-II CFS	7.0	10.5	5.8	8.2
Gateway Distriparks Ltd	2.8	6.5	4.1	7.7
All Cargo Logistics Ltd., CFS	3.9	5.5	3.6	7.3
International Cargo Terminal CFS	2.5	6.3	5.5	-
Balmer & Lawrie & Co. Ltd.,CFS	3.2	5.8	7.5	3.8
Continental Warehousing (Nhava Sheva) Ltd.	2.3	4.3	3.9	3.6
Seabird Marine Services Pvt Ltd.	1.9	6.4	5.4	5.3
Ocean Gate Container Terminals Pvt. Ltd.CFS	4.0	5.9	3.7	6.5
Maharashtra State Ware. Corp. CFS	3.2	5.9	5.1	5.8
International Cargo Terminals & Infrastructure Private Limited-CFS	4.1	5.9	6.2	3.1
APM (Maersk India Pvt. Ltd)CFS	1.7	4.3	7.2	4.1
NAVAKAR CORPORATION LTD.,YARD-1 CFS	-	5.1	-	-
SBW Logistics CFS , Navi Mumbai	10.1	11.9	14.3	15.9
JWC Logistics Park Ltd CFS	-	-	-	1.3

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Congestion Analysis around Mumbai Region

SEAWOODS

NEW PANVEL EAST

Cluster 8

Cluster 9

26 km
25 km

JNPT

Cluster 1

Cluster 4

Cluster 6

Cluster 5

Cluster 3

Cluster 7

Cluster 2

Cluster 1	Cluster 2
JNPT Area	Bhendkhal area, Khopate road

Cluster 3	Cluster 4
Sonari area,JNPT road	Chirle area , JNPT road

Cluster 5	Cluster 6
Plaspa area, Coachi kanyakumari Highway	Salva aptard area, Bangalore highway

Cluster 7	Cluster 8
Patilpada area, Khopate JNPT road	Taloja, Navi Mumbai

Cluster 9
Padhegar area

Note : Please find the respective CFS in each cluster in annexure section

It is seen that Cluster 1 , 4 and 9 have congestion bottleneck

GTI Terminal
Congestion Level
Export Cycle :-
Import Cycle :-

JNPCT Terminal
Congestion Level
Export Cycle :-
Import Cycle :-

NSICT Terminal
Congestion Level
Export Cycle :-
Import Cycle :-

NSIGT Terminal
Congestion Level
Export Cycle :-
Import Cycle :-

Note : Congestion is measured w.r.t actual time taken to cover the respective distance between clusters and terminals

Legends
High Congestion
Medium Congestion
Low Congestion
Cluster with bottleneck
Cluster without bottleneck

Base on container movement from port to CFS in Mumbai region, 29 CFS's have been grouped into 9 Clusters on the basis of their vicinity. Below table shows all the clusters and the relevant data for GTI and JNPCT terminal

CFS Cluster : GTI Terminal

- In export cycle the GTI terminal is having congestion for traffic from cluster 8, cluster 5
- In import cycle the movement of traffic towards cluster 9 is facing congestion

CFS Cluster : JNPCT Terminal

- In export cycle the JNPCT terminal is having traffic congestion from cluster 8

GTI terminal for month of Feb'18				
Clusters	No. of CFS's in Cluster	Distance from Port (Km)	Import cycle time (in Hrs)	Export cycle time (in Hrs)
Cluster 1	1	8	1.8	4.3
Cluster 2	6	13	2.1	5.8
Cluster 3	6	11	2.1	5.5
Cluster 4	1	13	3.7	11.3
Cluster 5	2	25	3.1	2.9
Cluster 6	6	25	3.3	8
Cluster 7	4	12	2.2	5.3
Cluster 8	1	34	4.1	11.9
Cluster 9	1	20	4.7	6.6

JNPCT terminal for month of Feb'18				
Clusters	No. of CFS's in Cluster	Distance from Port (Km)	Import cycle time (in Hrs)	Export cycle time (in Hrs)
Cluster 1	1	8	1.5	2.4
Cluster 2	6	13	2	2.5
Cluster 3	6	11	1.5	3.2
Cluster 4	1	13	1.1	5.3
Cluster 5	2	25	3.3	2
Cluster 6	6	25	2.9	5.6
Cluster 7	4	12	2	3.6
Cluster 8	1	34	3.7	10
Cluster 9	1	20	2.6	3.9

Export container usually aren't allowed in the port before the arrival of their respective vessel so this unplanned transportation of the export containers from the CFS's to Port can cause **bottlenecks**

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Base on container movement from port to CFS in Mumbai region, 29 CFS's have been grouped into 9 Clusters on the basis of their vicinity. Below table shows all the clusters and the relevant data for NSICT and NSIGT terminal

CFS Cluster : NSICT Terminal

- In export cycle the NSICT terminal is having congestion for traffic from cluster 8 and cluster 2
- In import cycle the movement of traffic towards cluster 9, cluster 9 is facing congestion

NSICT terminal for month of Feb'18				
Clusters	No. of CFS's in Cluster	Distance from Port (Km)	Import cycle time (in Hrs)	Export cycle time (in Hrs)
Cluster 1	1	8	2.5	2.9
Cluster 2	6	13	2.9	5.8
Cluster 3	6	11	0.8	4.5
Cluster 4	1	13	--	4.7
Cluster 5	2	25	3	1.9
Cluster 6	6	25	4	5.8
Cluster 7	4	12	2.3	3.8
Cluster 8	1	34	9.9	14.3
Cluster 9	1	20	25.9	4.2

CFS Cluster : NSIGT Terminal

- In export cycle the NSIGT terminal is having traffic congestion from cluster 8
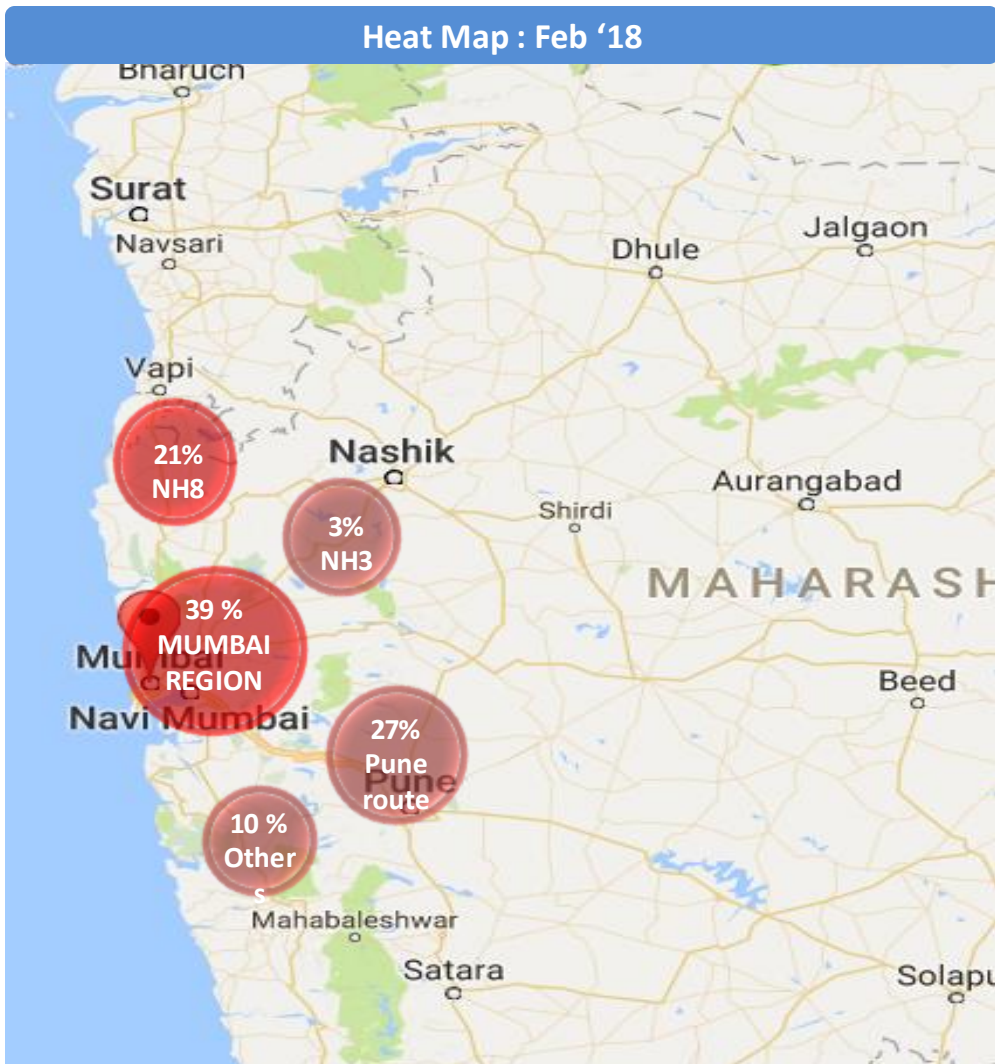- In import cycle the NSIGT terminal is having traffic congestion from cluster 9

NSIGT terminal for month of Feb'18				
Clusters	No. of CFS's in Cluster	Distance from Port (Km)	Import cycle time (in Hrs)	Export cycle time (in Hrs)
Cluster 1	1	8	1.6	3.5
Cluster 2	6	13	2.2	4
Cluster 3	6	11	1.8	5.3
Cluster 4	1	13	-	1.5
Cluster 5	2	25	2.9	3.9
Cluster 6	6	25	3.7	7.8
Cluster 7	4	12	2.1	6.6
Cluster 8	1	34	5.6	15.9
Cluster 9	1	20	25.6	6.3

Export container usually aren't allowed in the port before the arrival of their respective vessel so this unplanned transportation of the export containers from the CFS's to Port can cause **bottlenecks**

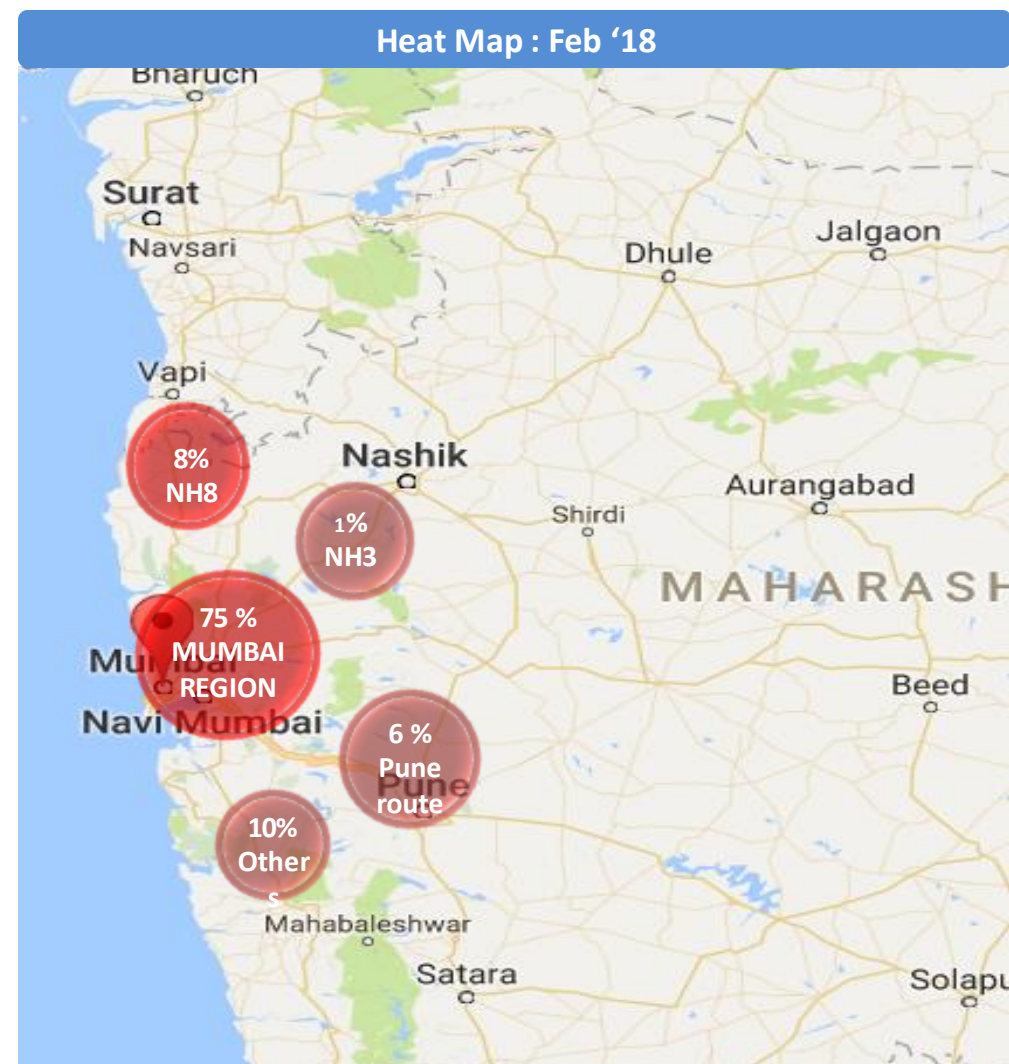# Container movement around JNPT Port terminal region via Truck

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HEAT MAP : JNPCT Port Terminal

Heat Map : Feb '18

Region	Feb'18	Jan'18
Mumbai Region	39%	33%
Pune	27%	27%
NH8	21%	25%
NH3	3%	4%
Others	10%	10%

The heat map above depicts the movement of containers in and around the Mumbai region.

HEAT MAP : NSICT Port Terminal

Heat Map : Feb '18

Region	Feb'18	Jan'18
Mumbai Region	75%	34%
Pune	6%	27%
NH8	8%	25%
NH3	1%	4%
Others	10%	10%

The heat map above depicts the movement of containers in and around the Mumbai region.

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Container Movement around JNPT region via Train

The map shows the volume wise container movement through different railway routes in export and import cycle for Feb'18

IMPORT CYCLE

Bhopal Route

Vadodara Route

8.6%

27.6%

Nagpur Route

5.3%

58.5%

Panvel Route

EXPORT CYCLE

Bhopal Route

Vadodara Route

14.5%

21.3%

Nagpur Route

11.9%

52.3%

Panvel Route

- **Carbon emission has been calculated for N3 tractor trailer (most commonly used in India) along with the support of white paper published by INTERNATIONAL COUNCIL ON CLEAN TRANSPORTATION and ECTA**
- **Fuel consumption per litre depicts the figure the truck will consumes while its ignition is turn on (truck in motion + truck waiting in queue with engine turned on)**
- **Please find toll plaza details below**

Toll plaza	Name	Toll plaza	Name
T1	Khaniwade	T4	Kishangarh
T2	Charoti	T5	Daulatpura
T3	Khaniwade	T6	Bharthan
		T7	Vasad

- ## Please find the calculations in below excel sheet

Vehicle	Gross vehicle weight (tonnes)	Axle cong	Speed	Fuel consuptio upper limit (l/100km)
N3 Tractor Trailers	40.2-49.0	6x2	40 km/hr	37.4
	40.2-49.0	6x4		43

Average fuel consumption (l/100km)
40

CFS

Import Cycle			
Average distance covered by truck around JNPT	Feb'17		Dec'17
19	3.84		2.4
Fuel consumed	**61.44**		**38.4**

Average distance covered by truck around J
19
Fuel consumed

Carbon Emission in Import cycle				
Formula	For Dieseal (Kg CO2/ltr)	Feb'17	Dec'17	**Improvement**
Carbon Emission	2.9	178.176	111.36	**38%**

Formula
Carbon Emission = fuel consumed * Fue

Toll Plaza

Toll plazas	Toll Plaza		
	erage distance covered btw toll pla	July'17	Nov'17
Khaniwade to Charoti	50	1.6	1.3
	Fuel consumed	**25.6**	**20.8**
JNPT to Khaniwade	94	7.2	6.6
	Fuel consumed	**115.2**	**105.6**
Kishangarh to Daulatpura	128	3.6	3.2
	Fuel consumed	**57.6**	**51.2**
Bharthan to Vasad	60	1.7	1.6
	Fuel consumed	**27.2**	**25.6**

Formula
Carbon Emission = fuel consumed * Fue
Khaniwade to Charoti
JNPT to Khaniwade
Kishangarh to Daulatpura
Bharthan to Vasad

Thank You !!