



DLDS ANALYTICS : February Report 2018



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%**.





Performance Benchmarking

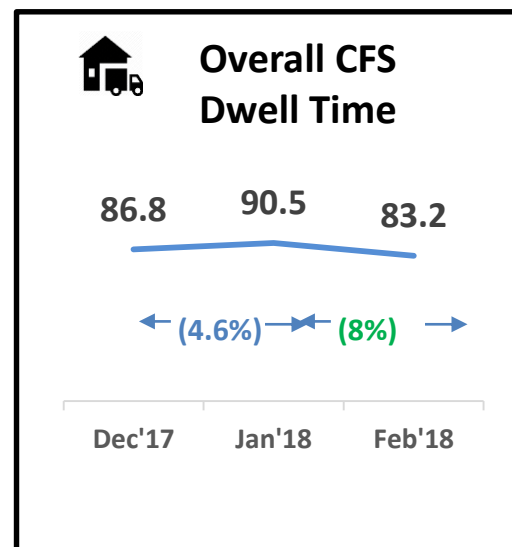
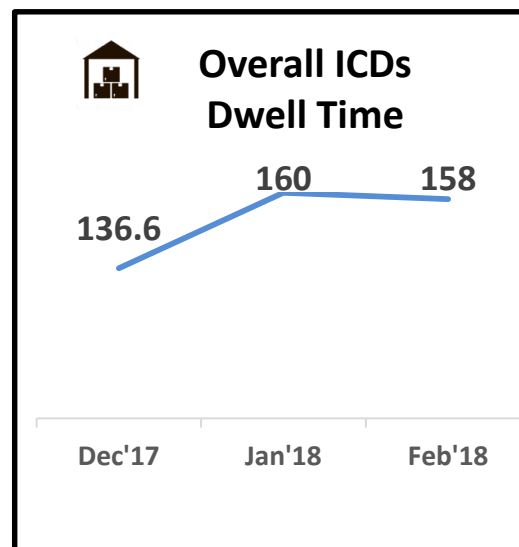
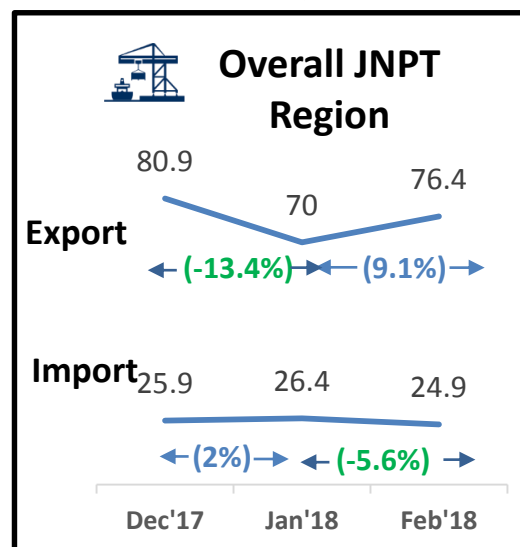


Performance Index



Container Clearance Time analysis

With help of above activities below results have been achieved :



Dwell Time

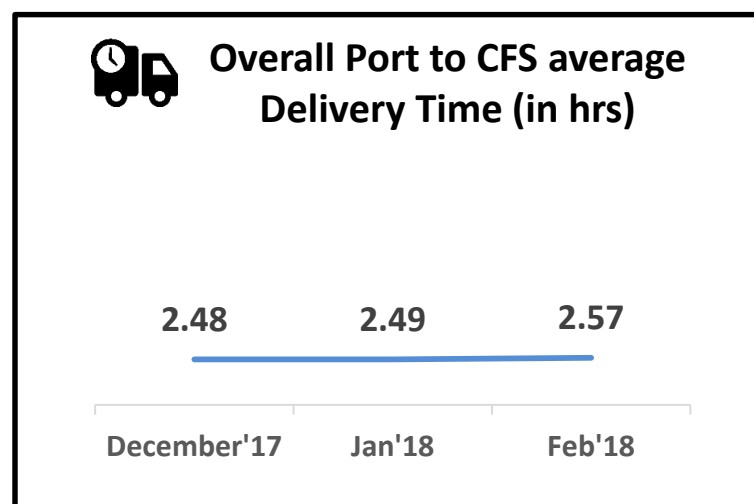
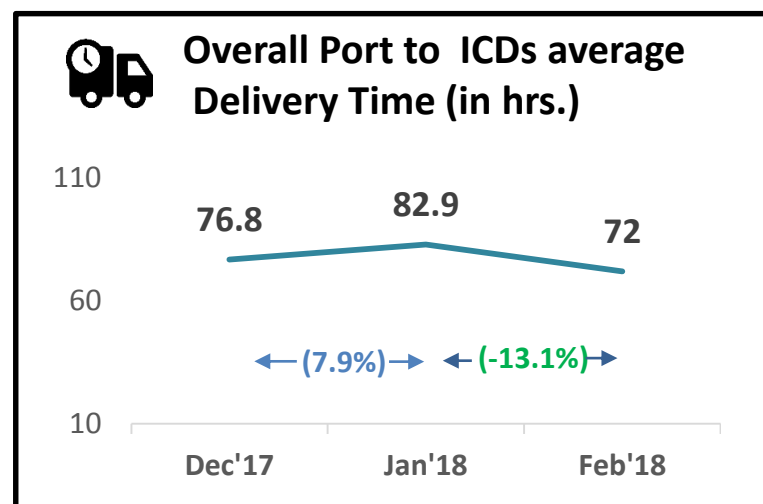
- 5.6% improvement in JNPT region import cycle dwell time performance in February'18 month as compared to the previous month
- 8% improvement in overall CFS dwell time performance as compared to the previous month



Congestion Analysis



Bottleneck Identification



Transit Time Reduction

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



9

Port Terminals

11

Inland container
Depots

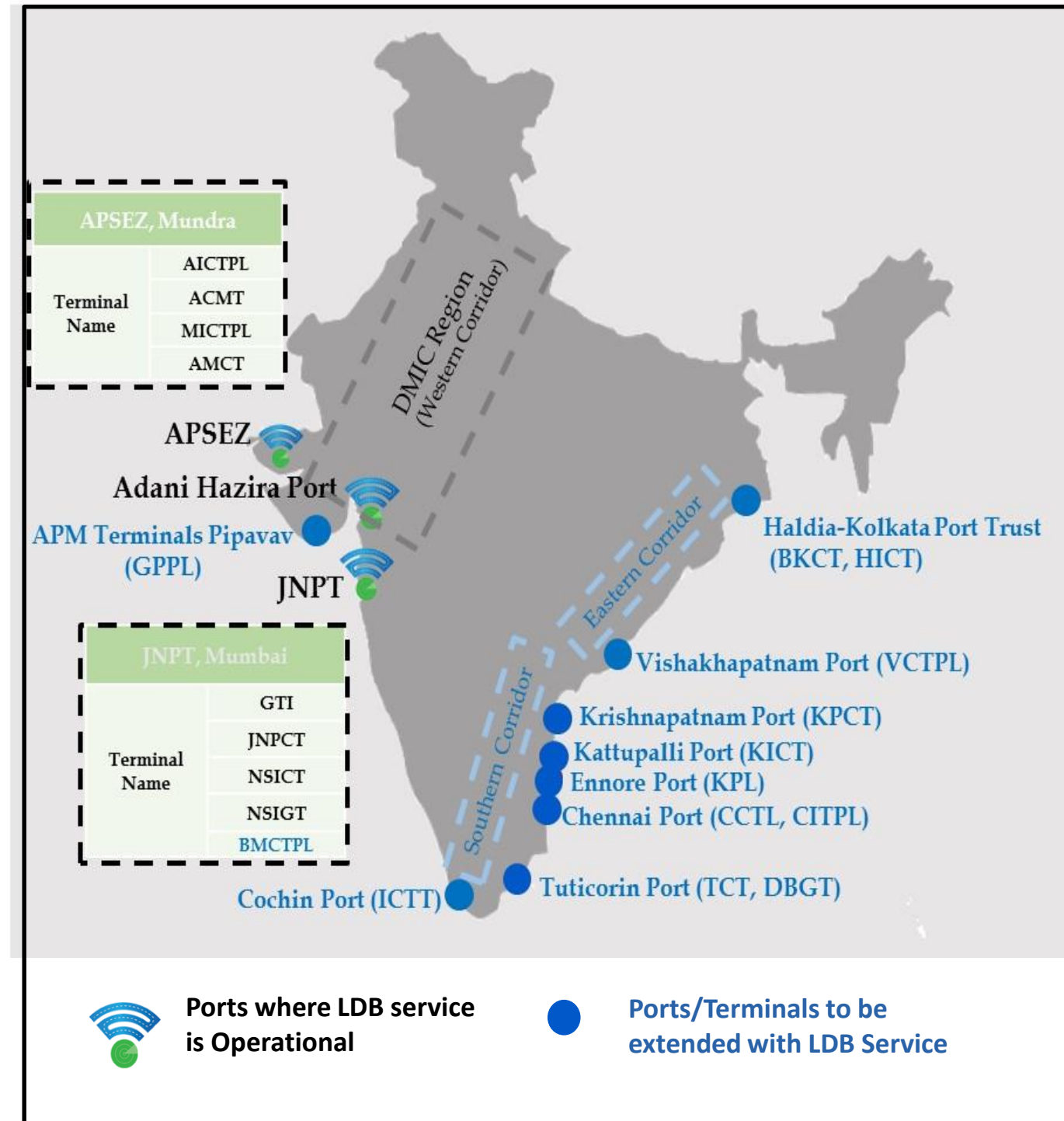
46

Container
Freight Stations

19

Toll Plazas

LDB coverage



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

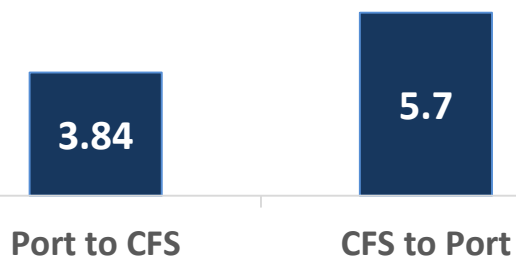


Congestion analysis has helped in reducing the transit time between JNPT port and surrounding CFS, this has enabled in reducing the carbon emission index.

Pre-Scenario

Transit Time (Feb'17)

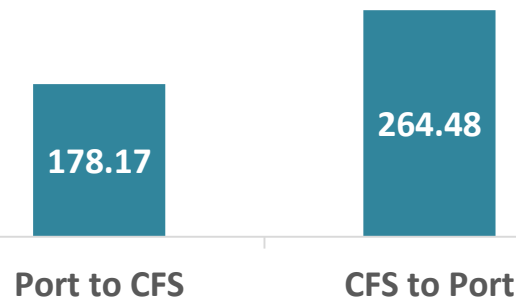
 Average Transit Time (in hrs)



Results
in

CO2 emission (Feb'17)

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



Decrease in Transit
between JNPT port
and surrounding
CFS has caused
reduction in carbon
emission by trucks



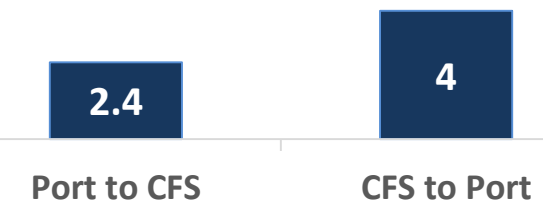
38% reduction in
CO2
emission
(Port to CFS)

30% reduction in
CO2
emission
(CFS to Port)

Post-Scenario

Transit Time (Dec'17)

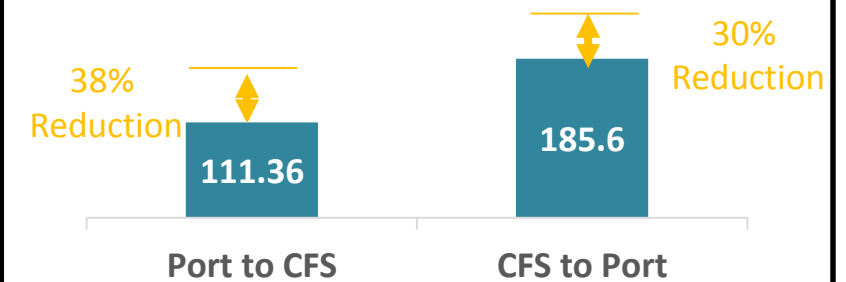
 Average Transit Time (in hrs)



Results
in

CO2 emission (Dec'17)

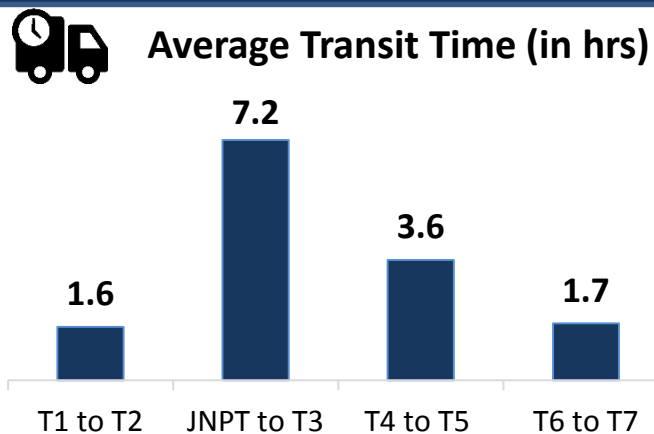
CO2 emission per litre per truck (in kg CO2/ltr)



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 Visibility service and helping reduce the Carbon Footprint.

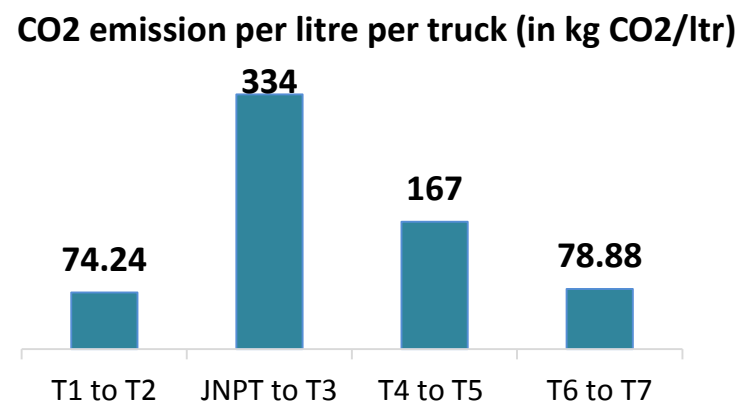
Pre-Scenario

Transit Time between Toll plazas (July'17)



Results
in

CO2 emission (July'17)



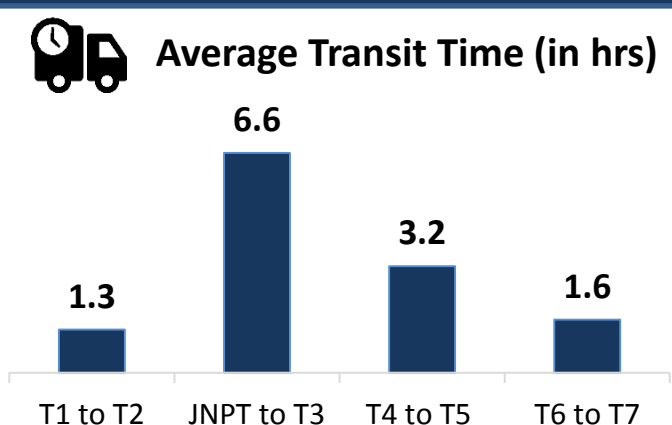
Decrease in Transit
between Toll plazas
has caused
reduction in carbon
emission



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)

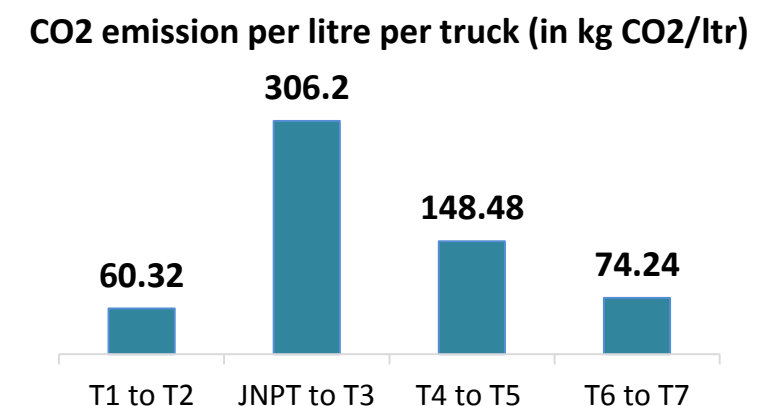
Post-Scenario

Transit Time between Toll plazas (Nov'17)



Results
in

CO2 emission (Nov'17)



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

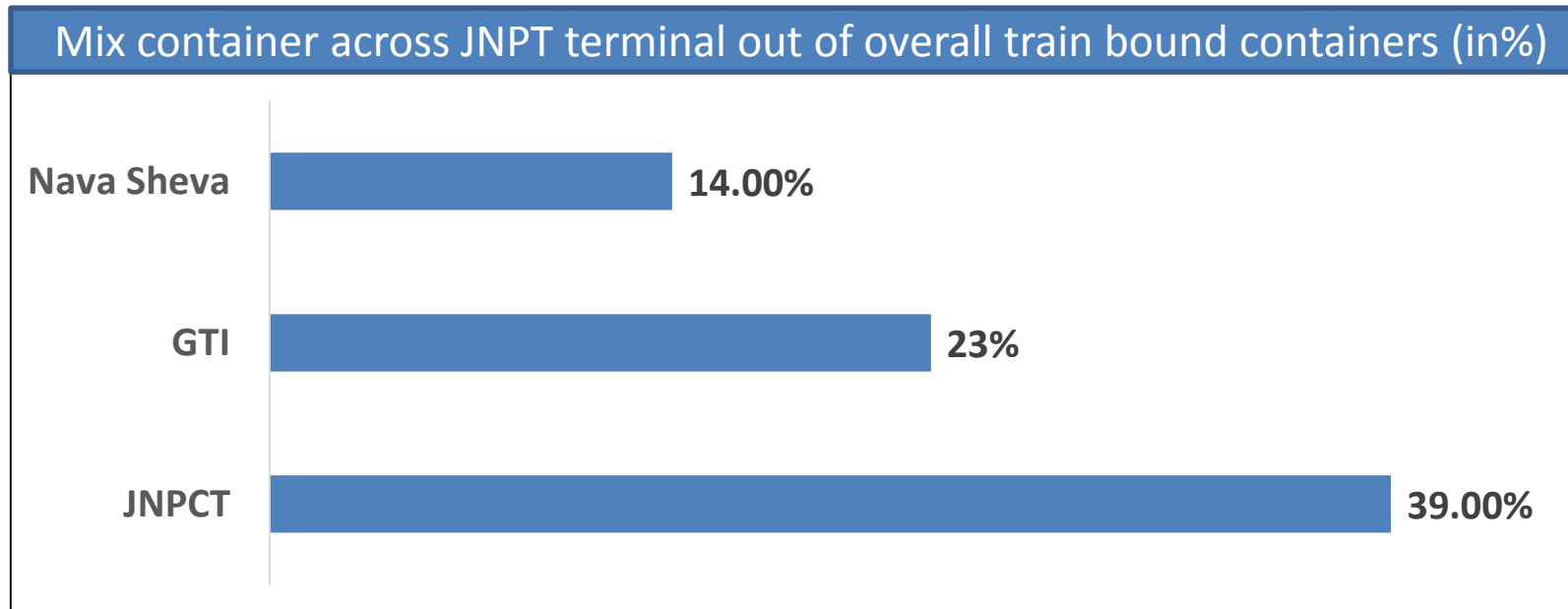


JNPT

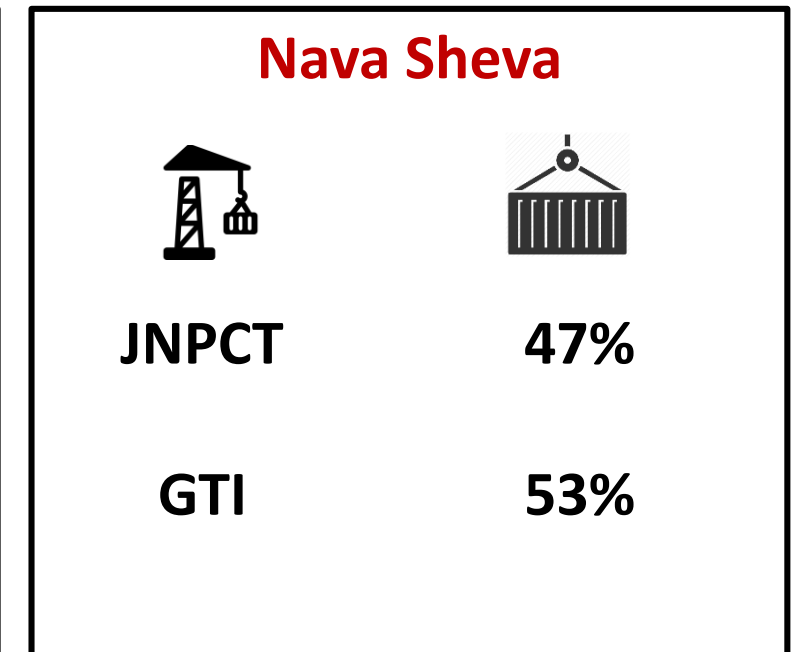
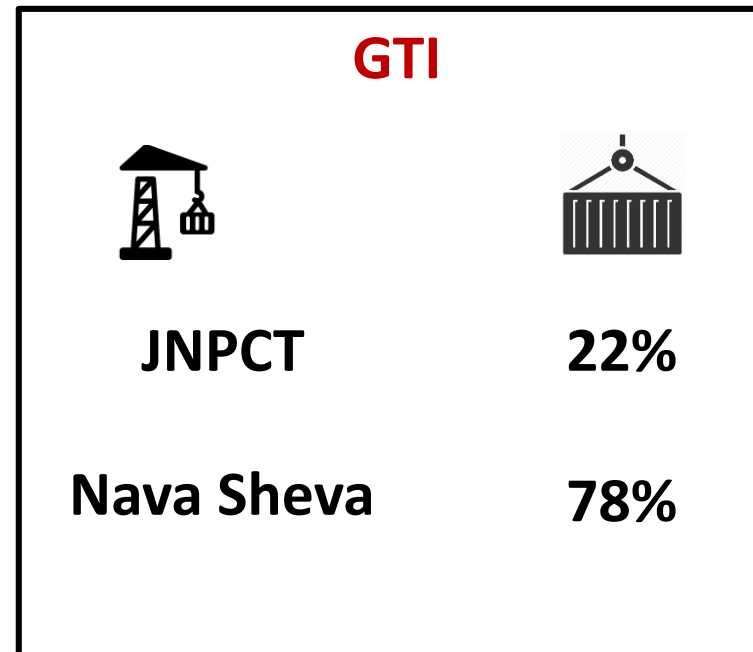
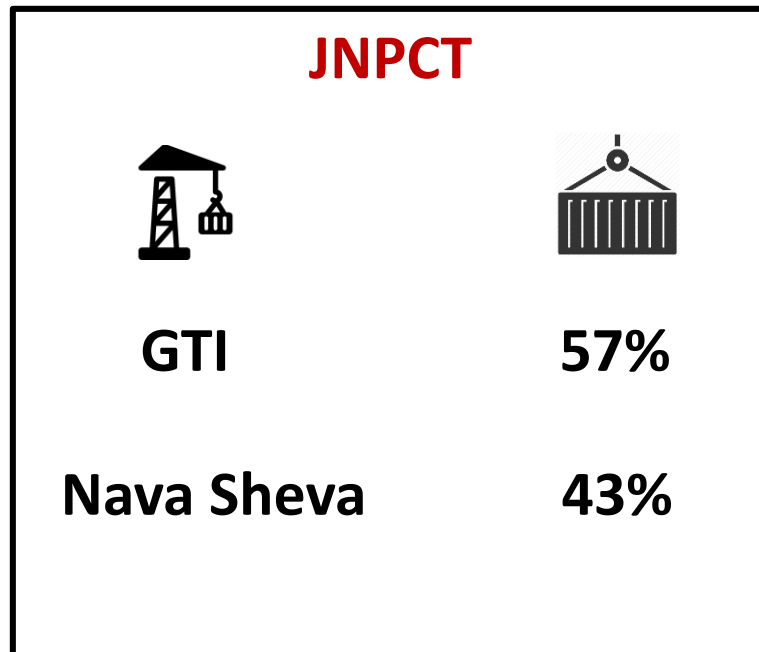
Mixed Container Movement Analysis



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



Below figure depicts the percentage of containers of other terminals landed on respective terminals

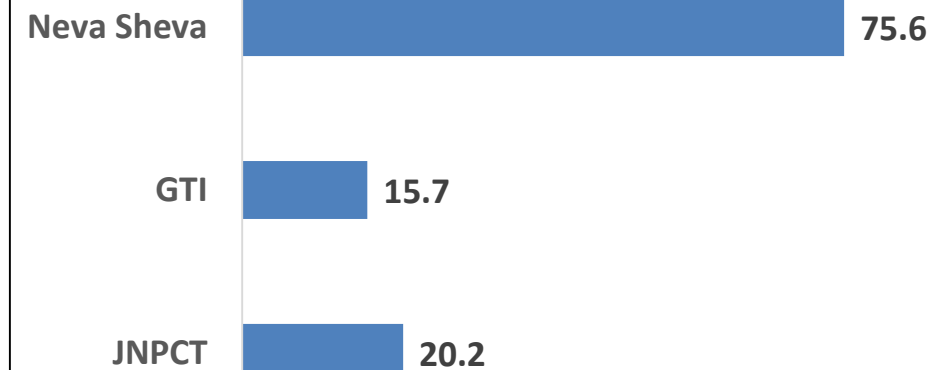


Analysis has been performed on January'18 month data



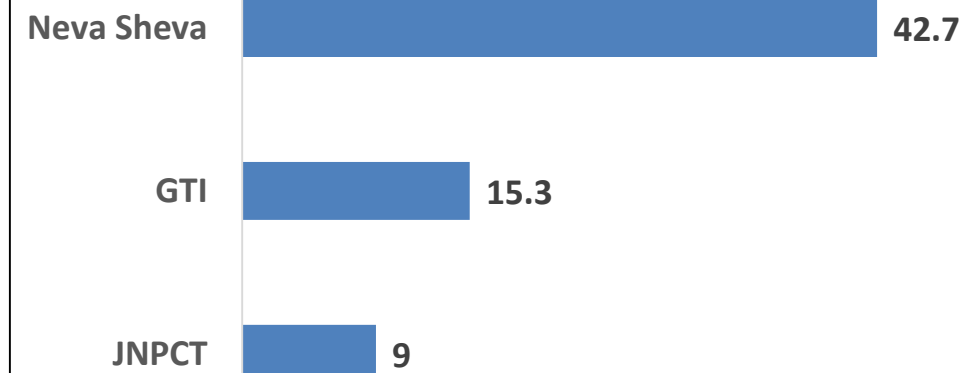
Mix container Handling time Import Cycle

Mix Container Handling Time (Hrs)



Mix containers requires additional time to process which increases the port dwell time.

Mix Container Handling Time (Hrs)



Mix container Handling time Export Cycle

Analysis has been performed on January'18 month data

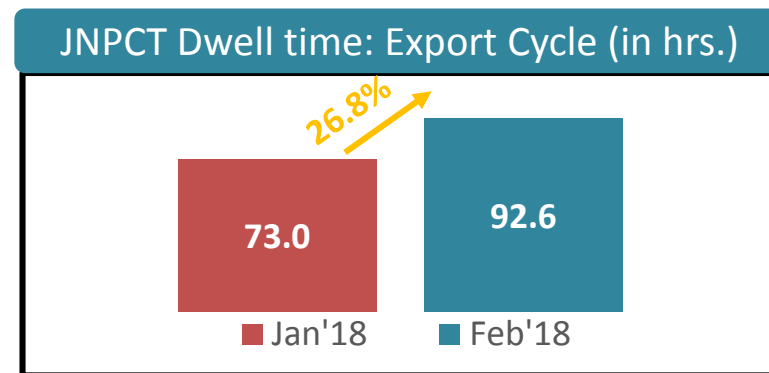




JNPCT port terminal saw an increase in its Export cycle Port dwell time by around 26.8% in February 18

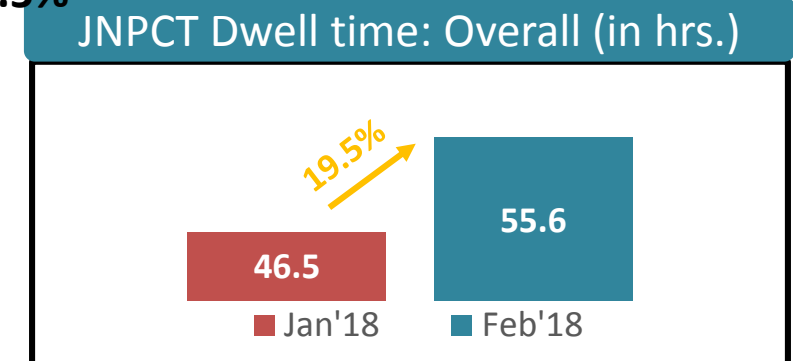
JNPCT port terminal has seen increase in its overall dwell time by 19.5% in February '18 as compared to January'18. This is primarily due increase in export cycle dwell time of both train and truck containers.

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

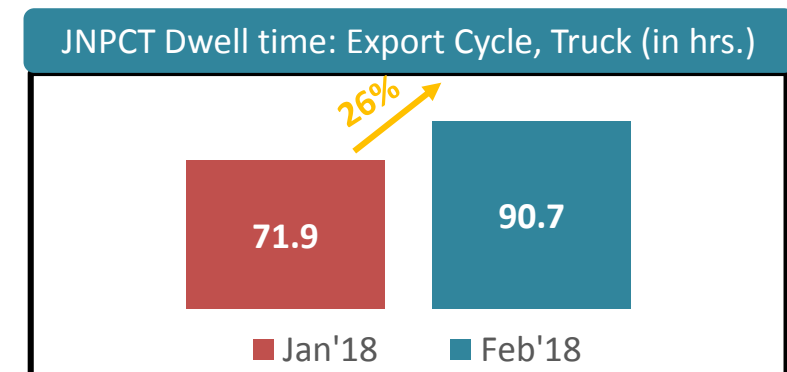
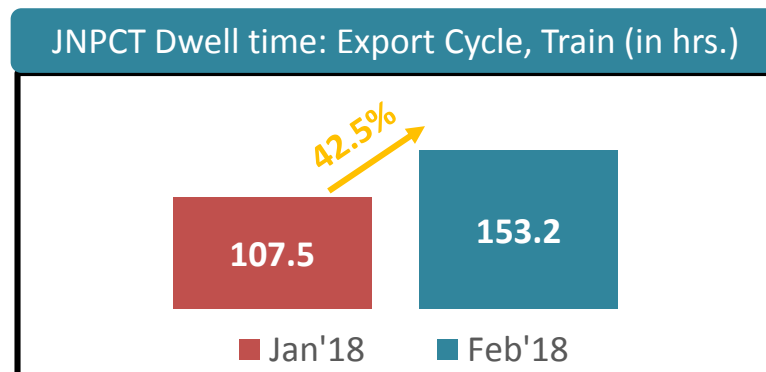


Impact

- JNPCT has increased its overall dwell time by 19.5%



Further Analysis



Within 5 days
More than 5 days

JNPCT : Export Train

38%

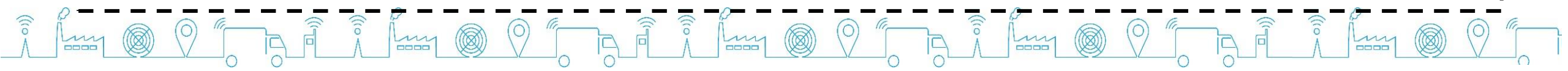
62%

Within 5 days
More than 5 days

JNPCT : Export Truck

76%

24%



Transit mode wise container volume trend

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

Import Cycle	Month	JNPT (Volume in %)		APSEZ MUNDRA (Volume in %)	
		Truck	Train	Truck	Train
	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)

Export Cycle	Month	JNPT (Volume in %)		APSEZ MUNDRA (Volume in %)	
		Truck	Train	Truck	Train
	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 for JNPT Region for month of February'18

Port Terminals

Top Performing Terminal

Gateway Terminals India (GTI)

Dwell Time : **41** hrs.

Low Performing Terminal

**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

**Adani Hazira Port Private Limited
(AHPPL)**

Dwell Time : **53.3**
hrs.

Low Performing Terminal

**Adani International Container
Terminal (AICT)**

Dwell Time : **77.4** hrs.





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

CFS

Top Performing CFS's

JWR CFS, Navi Mumbai

Dwell Time : **52**
hrs.

Low Performing CFS's

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

Adani CFS Eximyard, Mundra

Dwell Time : **48.7**
hrs.

Low Performing CFS's

**Hind Mundra Terminals CFS,
Mundra**

Dwell Time : **135.3**
hrs.





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.





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.

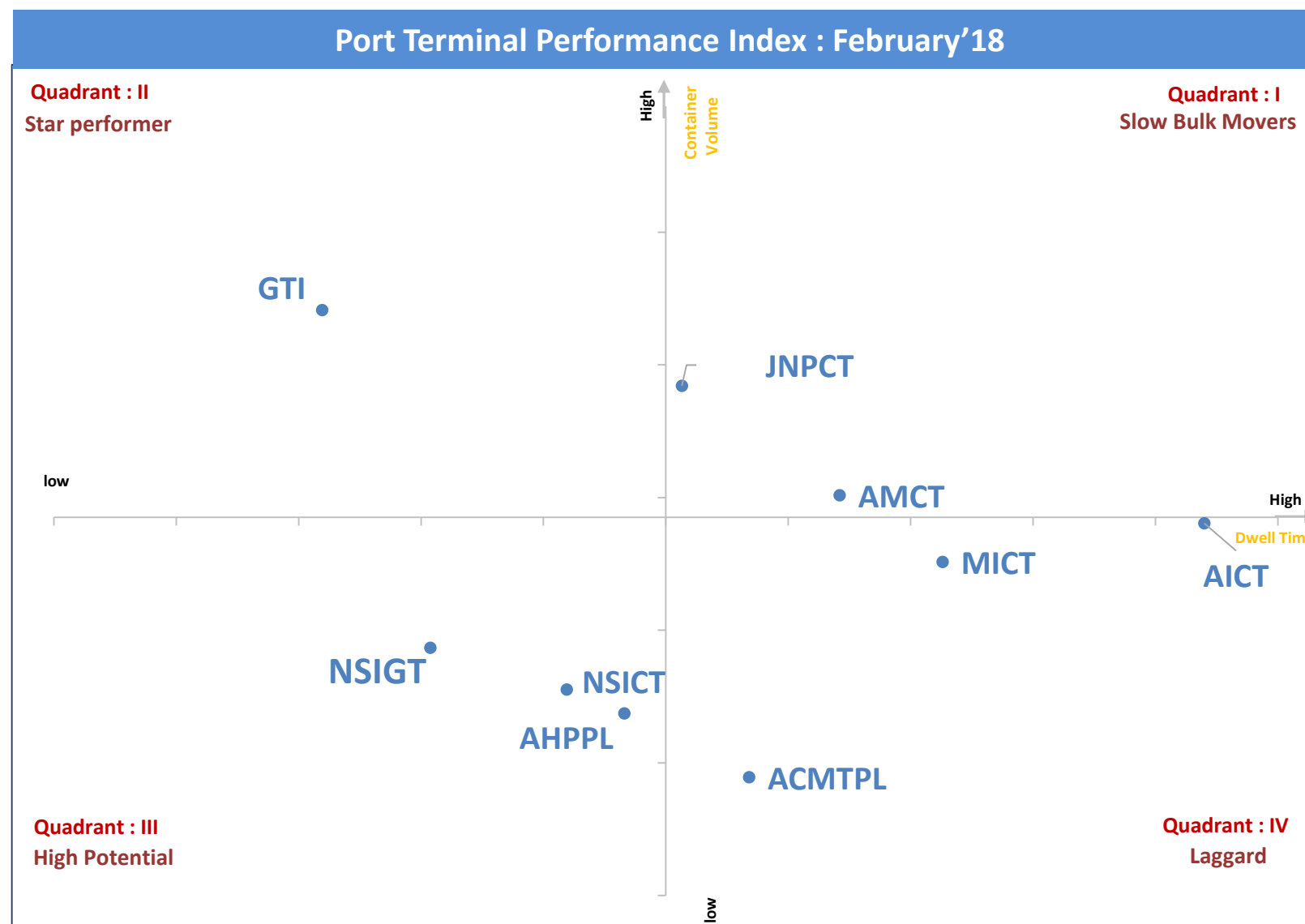
The figure depicts the Frequency Index i.e. volume by dwell time performance for Port terminals across western corridor for February '18. The Quadrant II represents the high performing ports with high frequency Index i.e. high container volume at lower dwell time

Slow Bulk Movers : consist of Ports which have catered higher container volume at higher dwell time

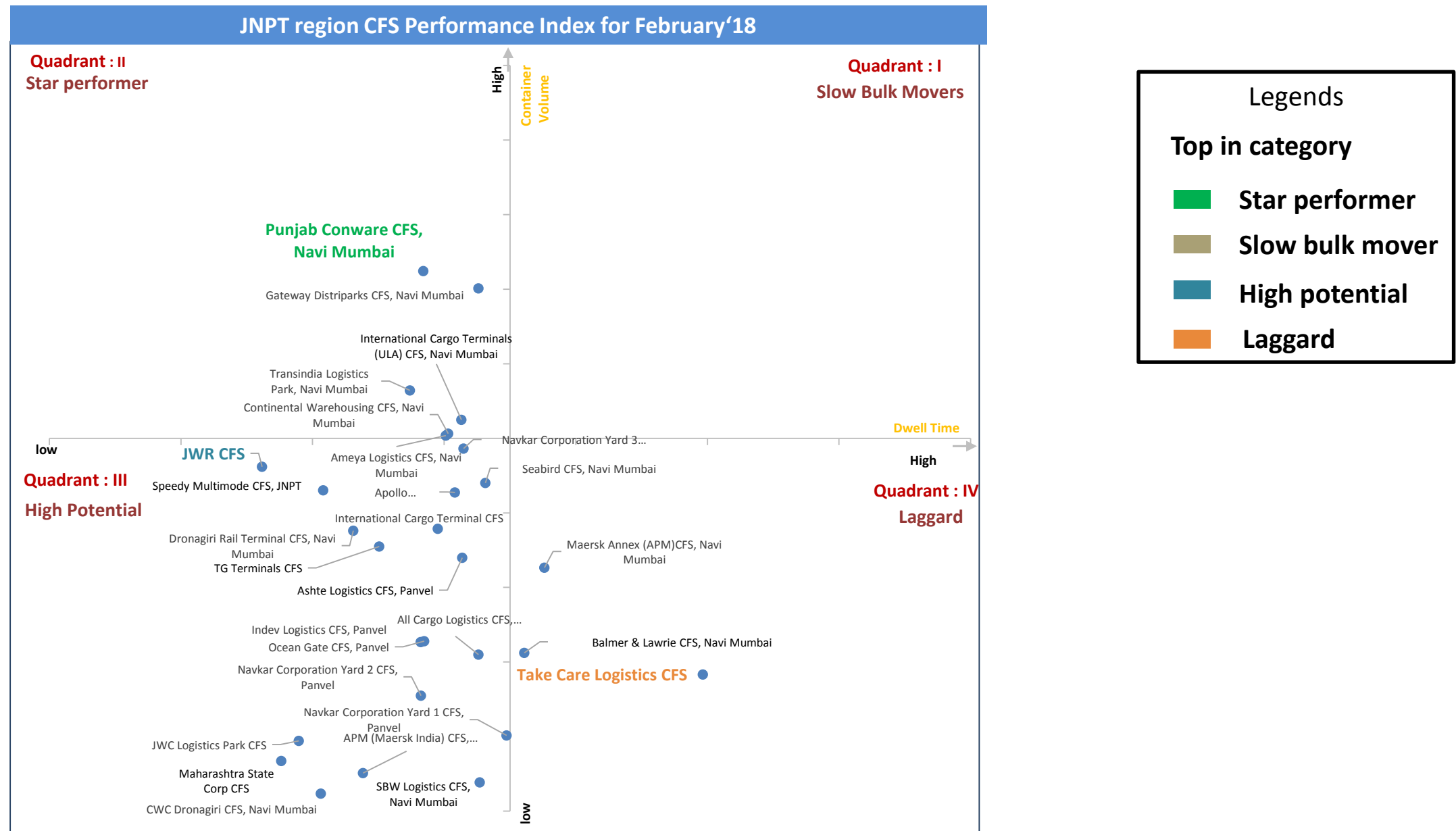
Star Performer: consist of Ports which have catered relatively high container volume in lower dwell time

High Potential : consist of Ports which have catered relatively lower container volume in lower dwell time

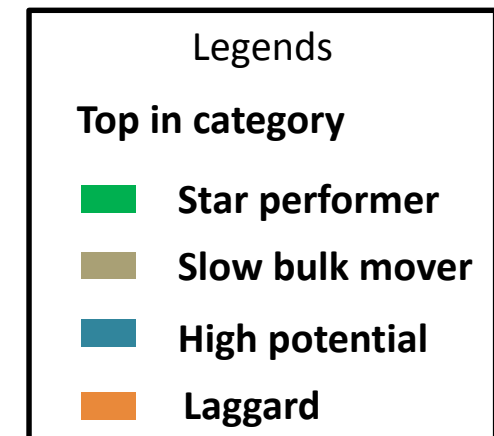
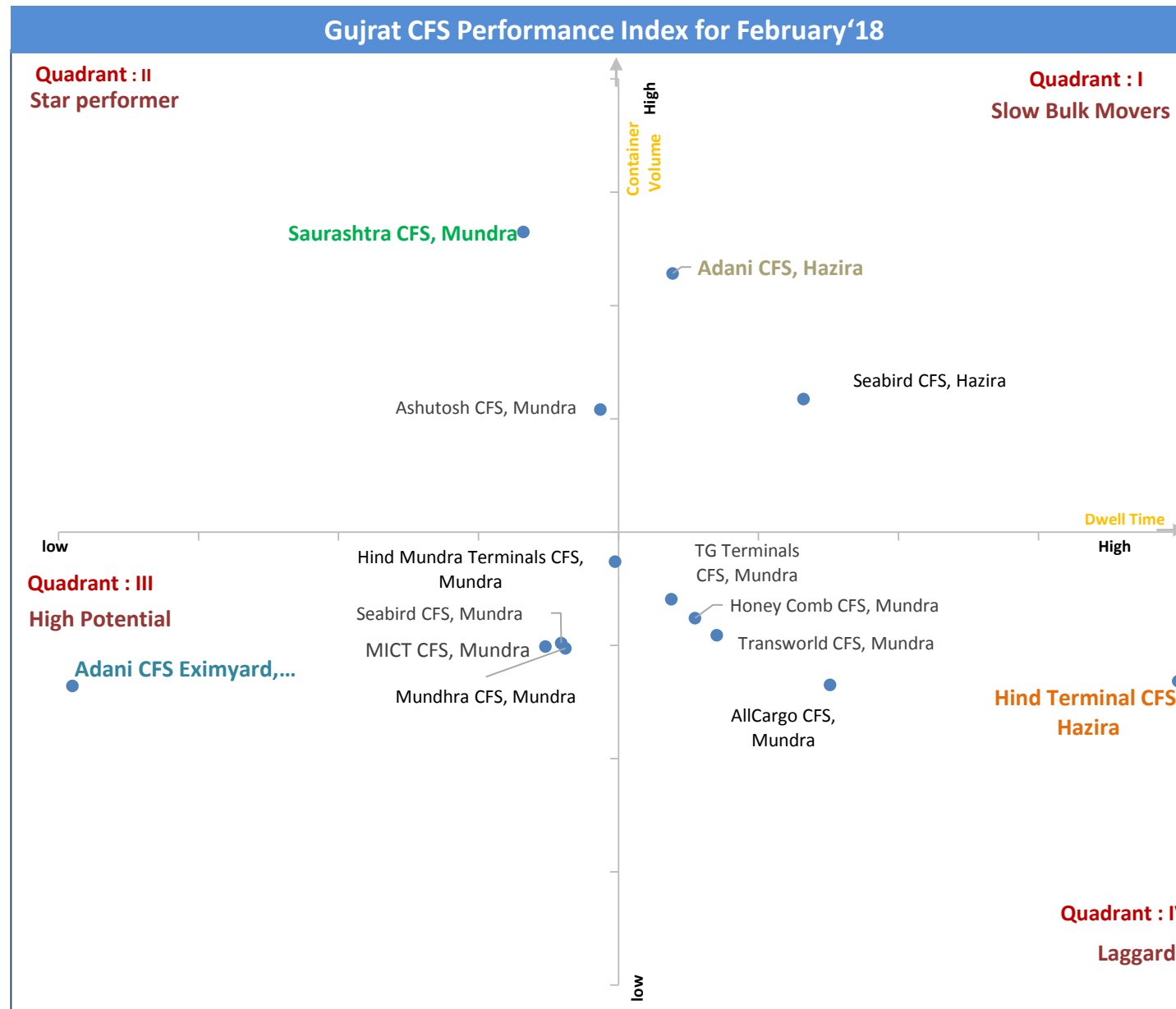
Laggard : consist of Ports which have catered relatively lower container volume at higher dwell time



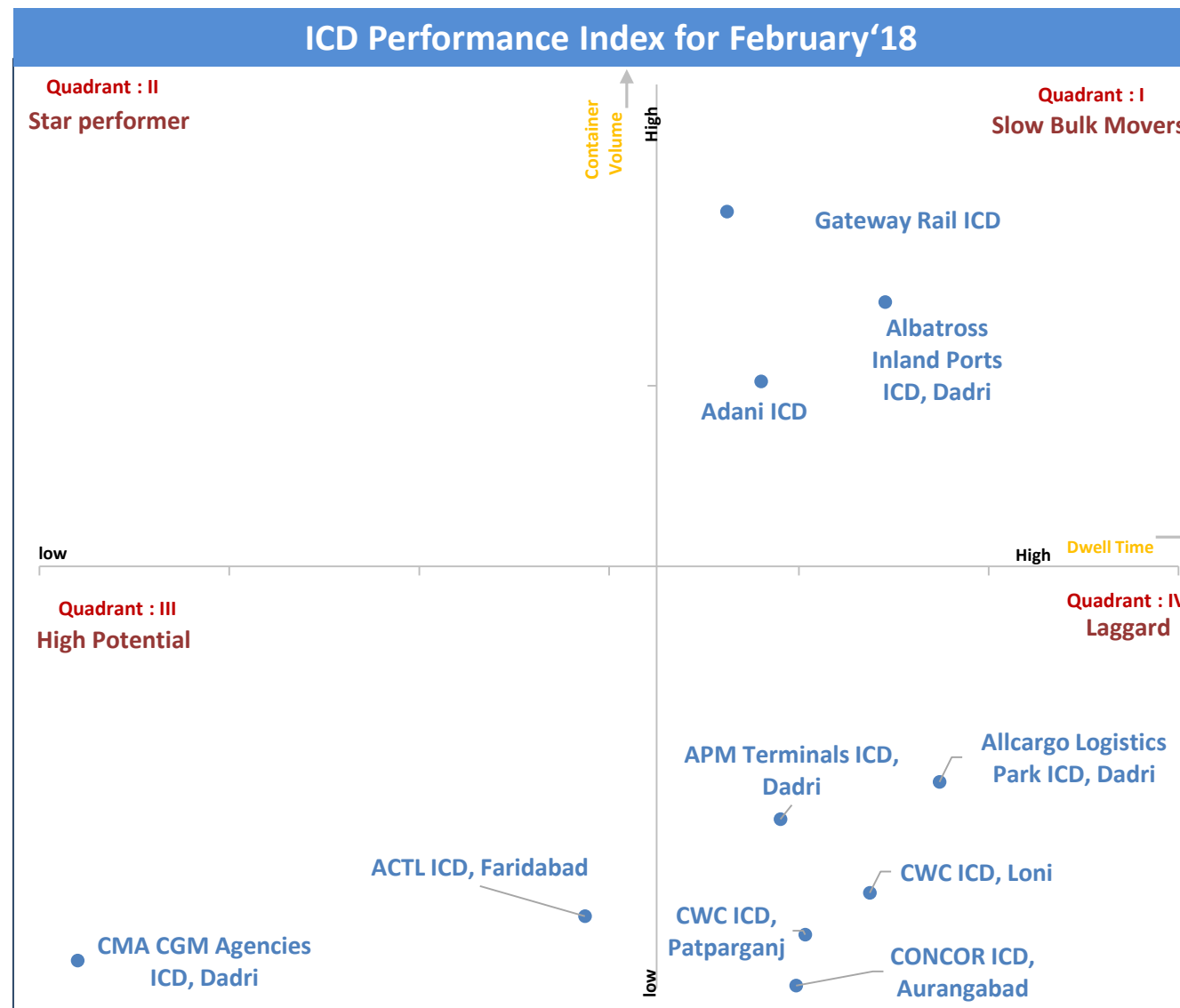
The below graph depicts the Performance Index for all CFS for February'18. The Quadrant II represent the best CFS with high frequency Index i.e. high container volume at lower dwell time



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



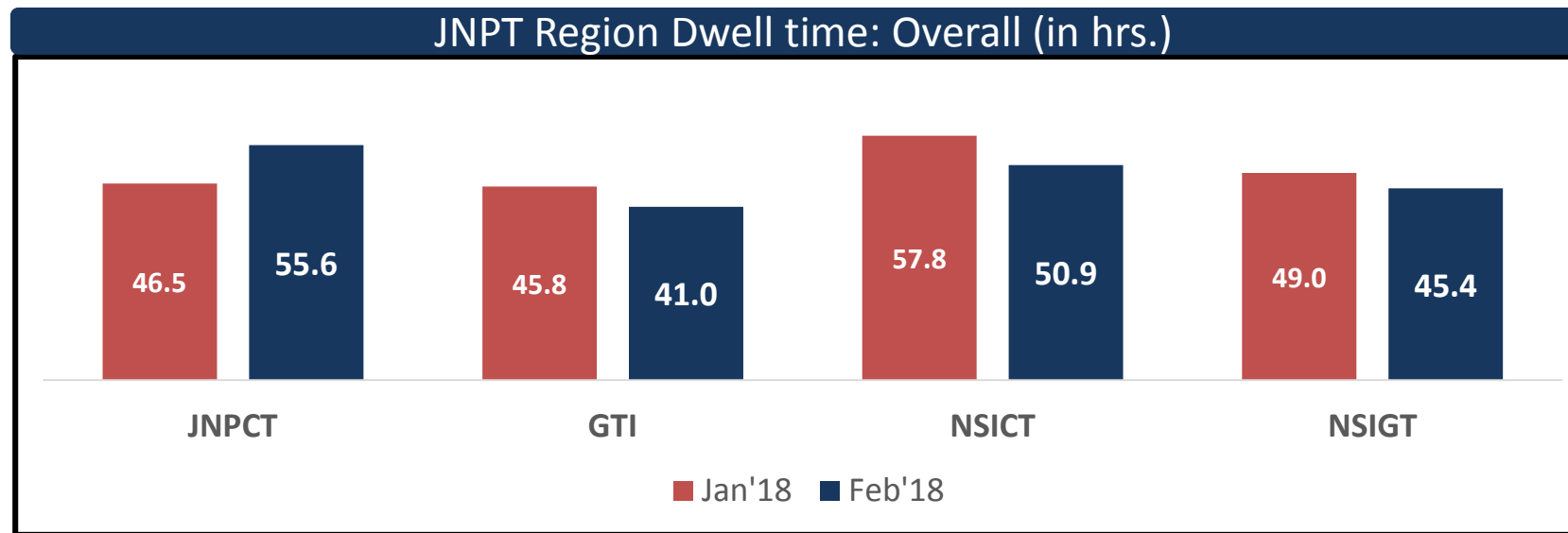
The below graph depicts the Performance Index for all ICDs for Feb'18. The Quadrant II represent the best ICD with high frequency Index i.e. high container volume at lower dwell time





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



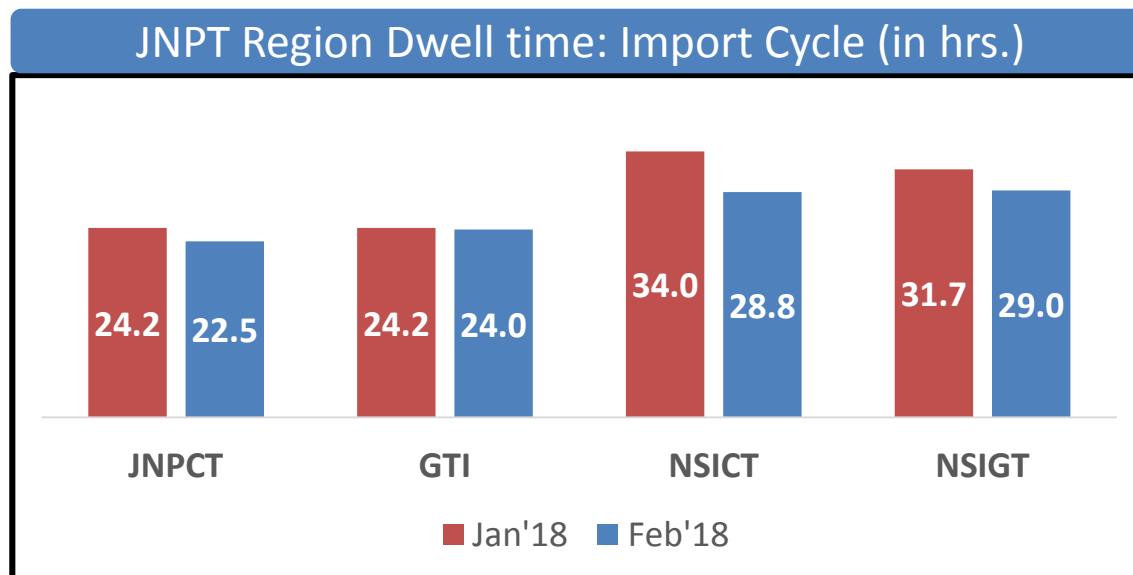
The overall JNPT region average dwell time for Feb'18 is 47 hrs as compared to last month Jan'18 is 48 hrs

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



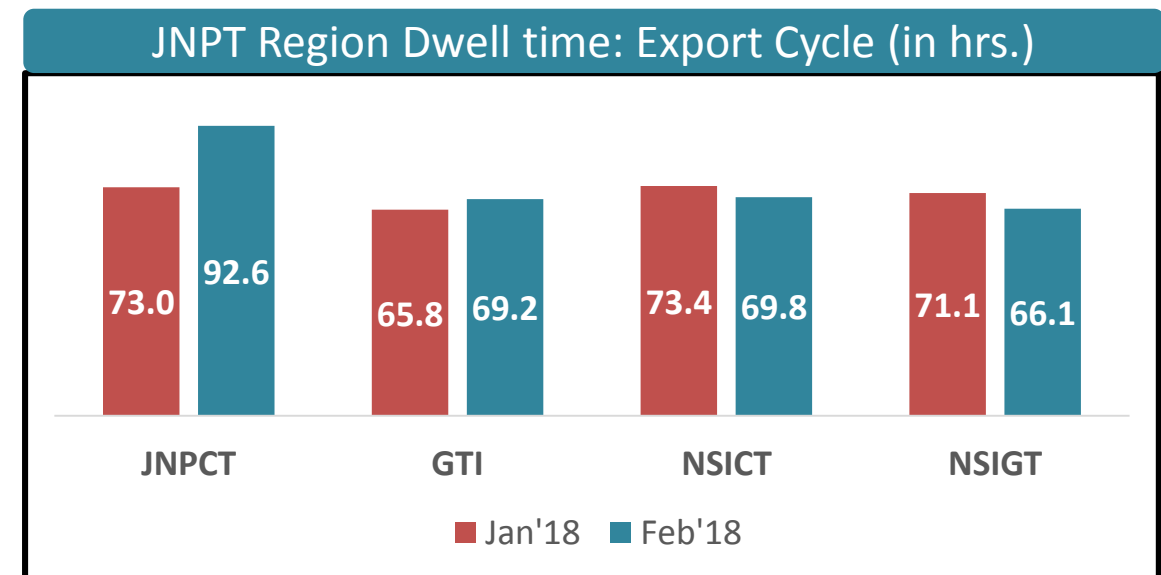
JNPT Import cycle Trend

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



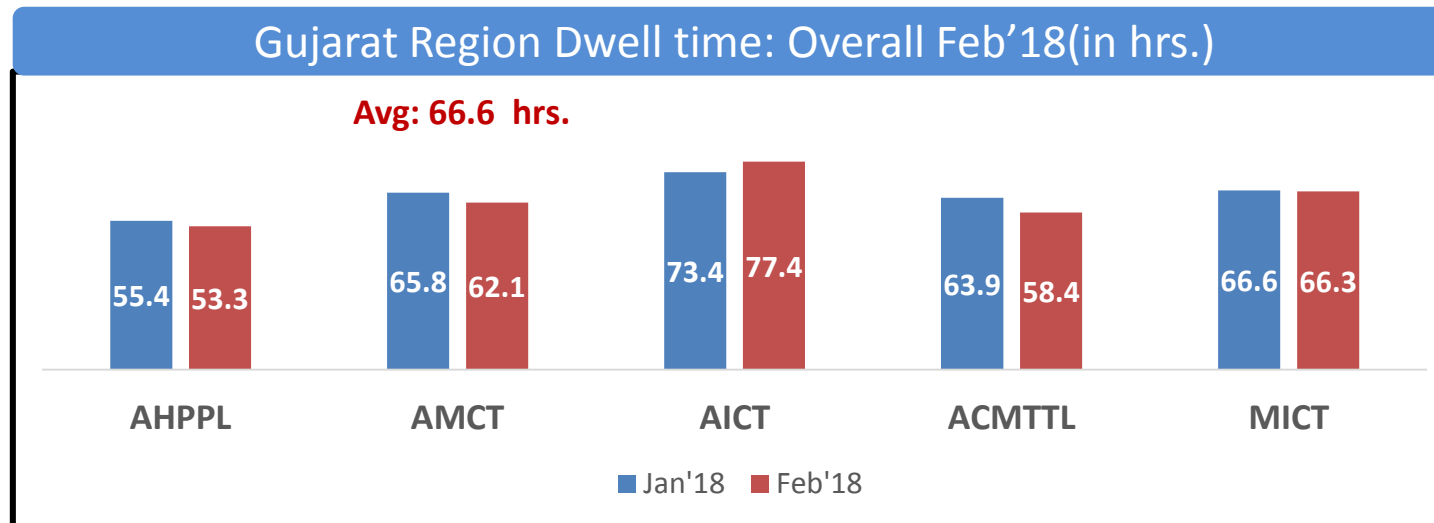
JNPT Export cycle Trend

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



Gujarat port dwell time trend :

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

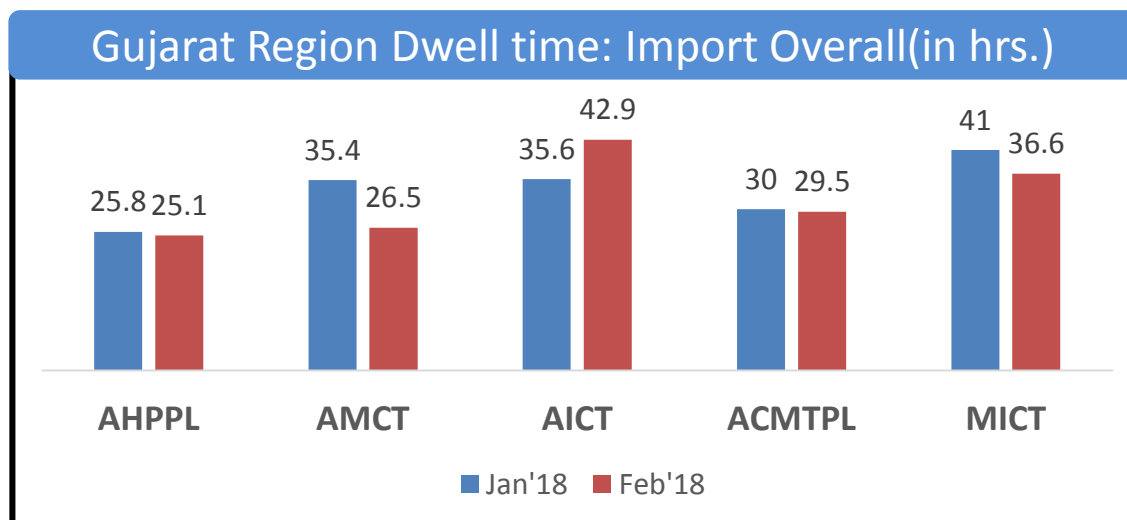


The average Gujarat region port terminals for Feb'18 is **66.6 hrs.**



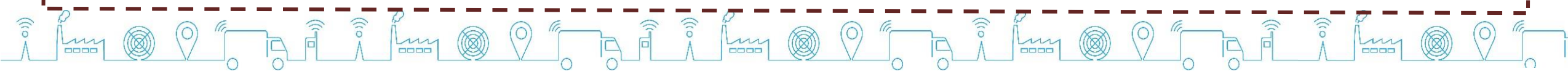
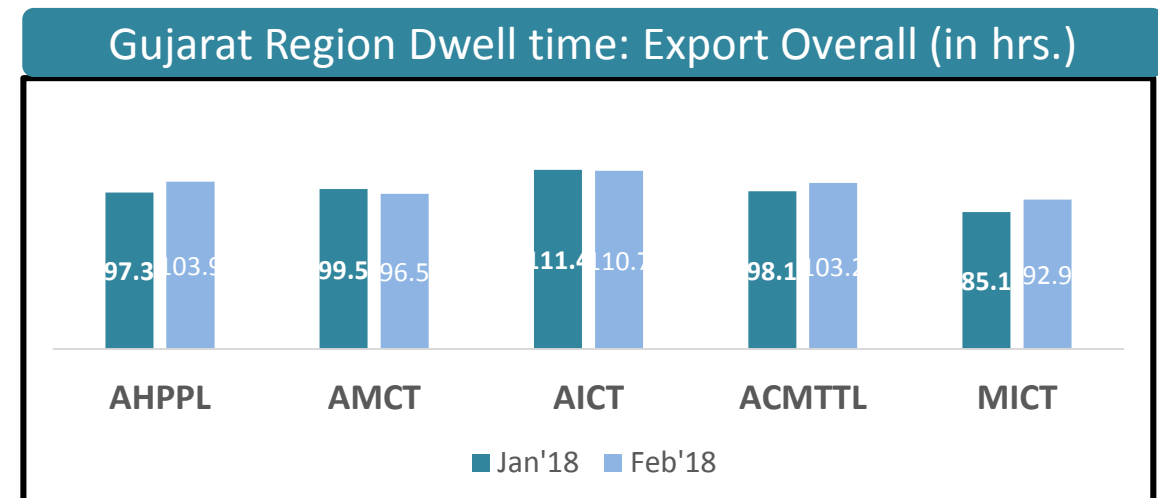
Gujarat Region Import cycle Trend

The below tables showcase the Import dwell time for both rail and truck bound containers (combined) for Feb'18 is **32 hrs.**



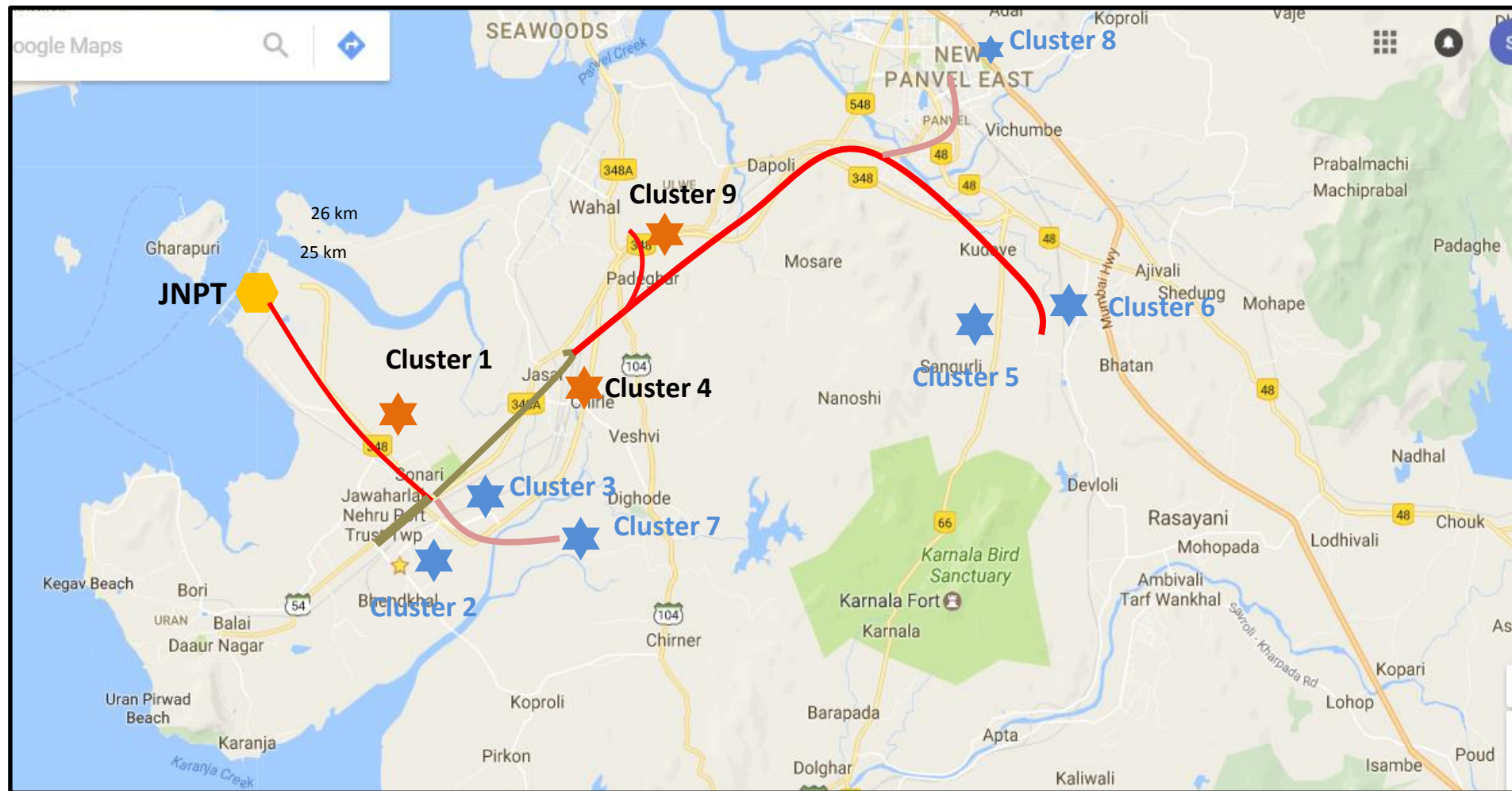
Gujarat Region Export cycle Trend

The below tables showcase the Export cycle dwell time for both rail and truck bound containers (combined) for month Feb'18 is **101 hrs.**





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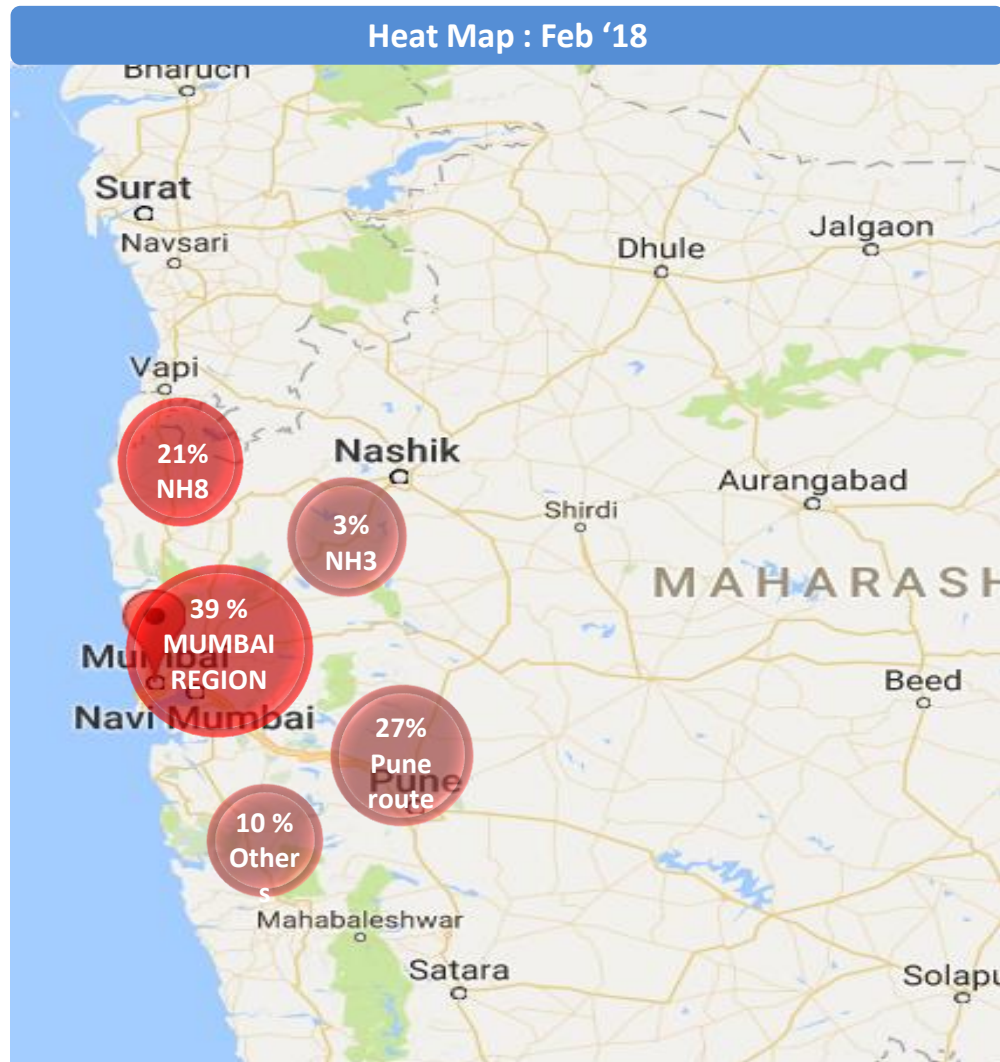
Note : Congestion is measured w.r.t actual time taken to cover the respective distance between clusters and terminals

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



Container movement around JNPT Port terminal region via Truck

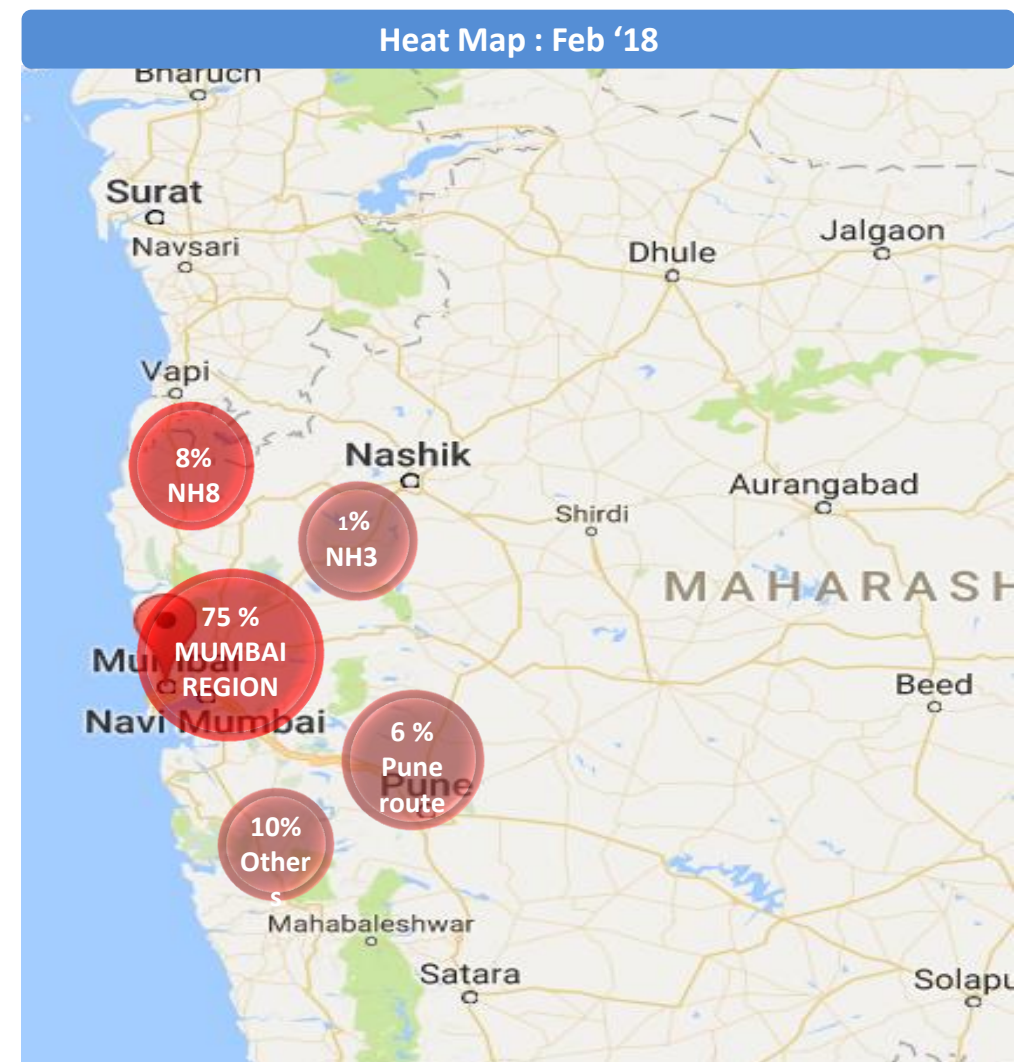
HEAT MAP : JNPCT Port Terminal



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



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.

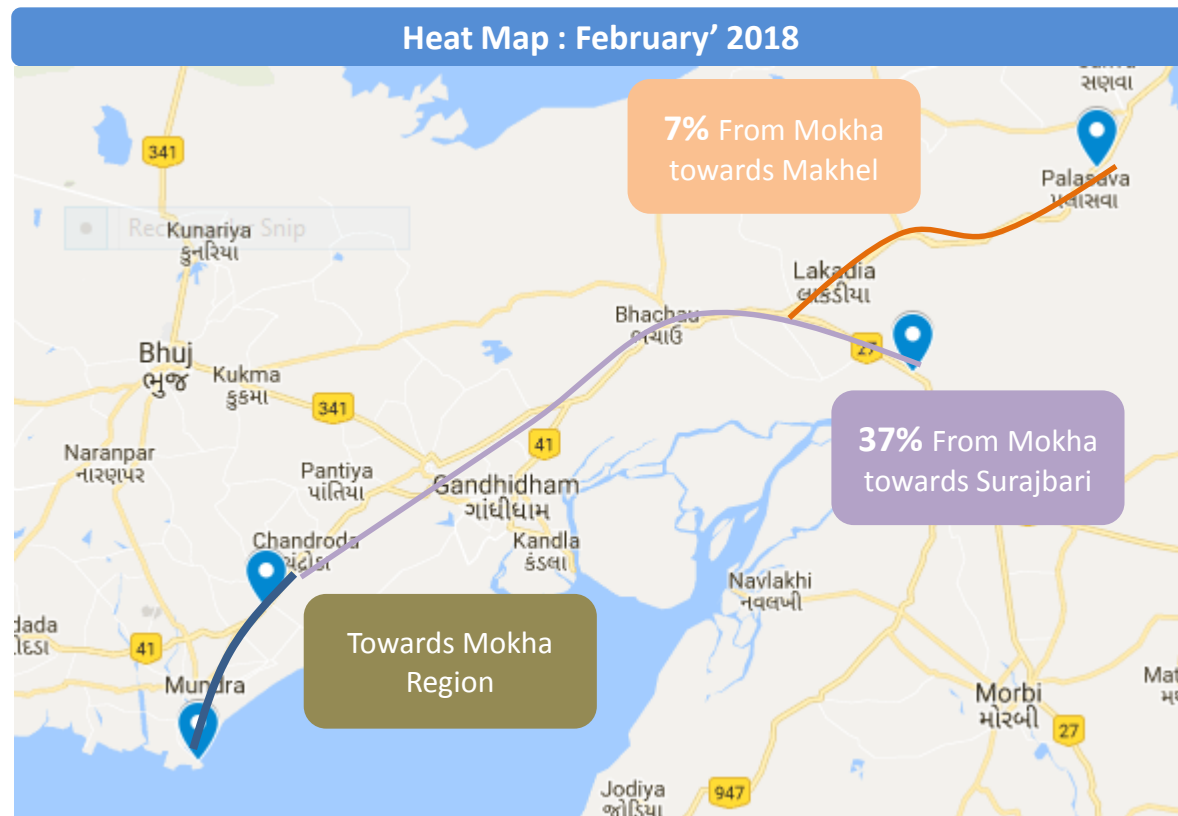


Container movement around Mundra region via Truck

The below graphs display the container traffic bifurcation from Mundra region towards Mokha and Surajbari routes for overall Mundra region and South Basin Custom Gate

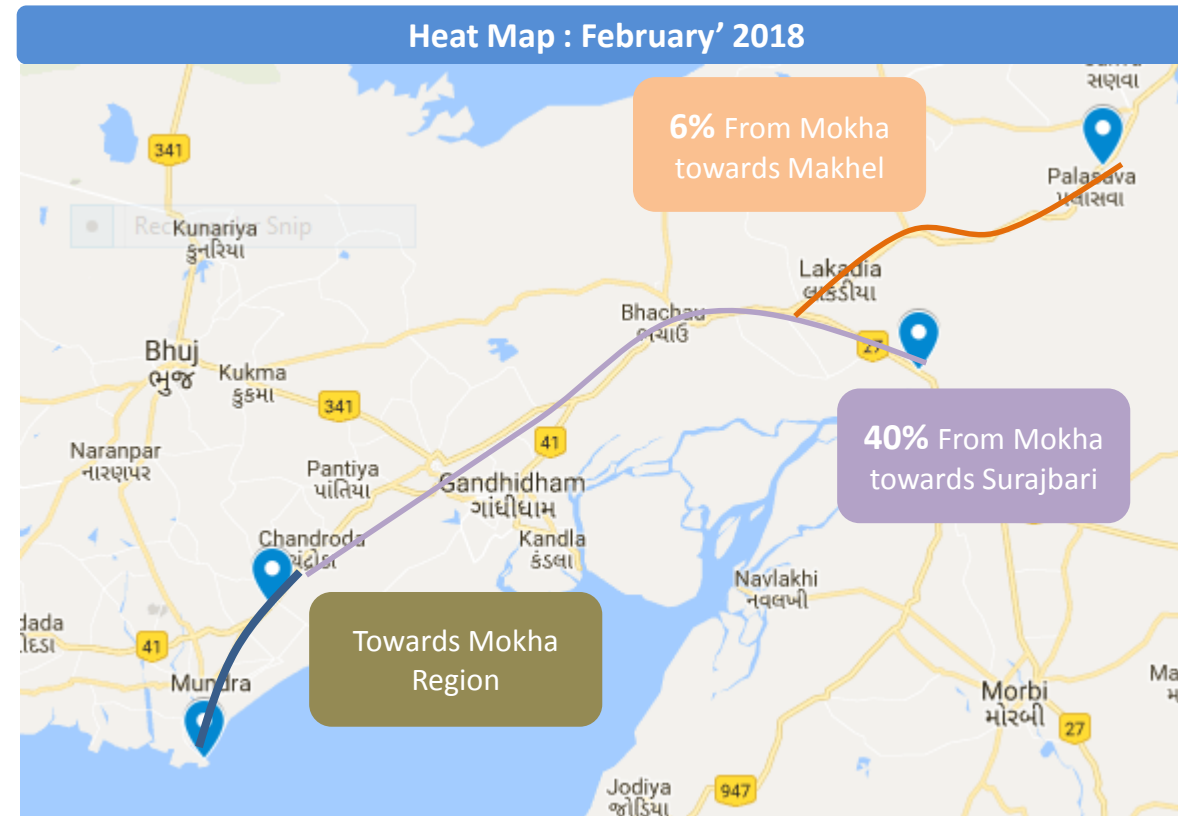
HEAT MAP : Overall Mundra Region

i.e. all 4 terminals at Mundra port region i.e. MICT, AICT, AMCT, AHPTL



From Mokha towards		
Region	February'18	January'18
Surajbari	37%	41%
Makhel	7%	7%

HEAT MAP : South Basin Custom Gate



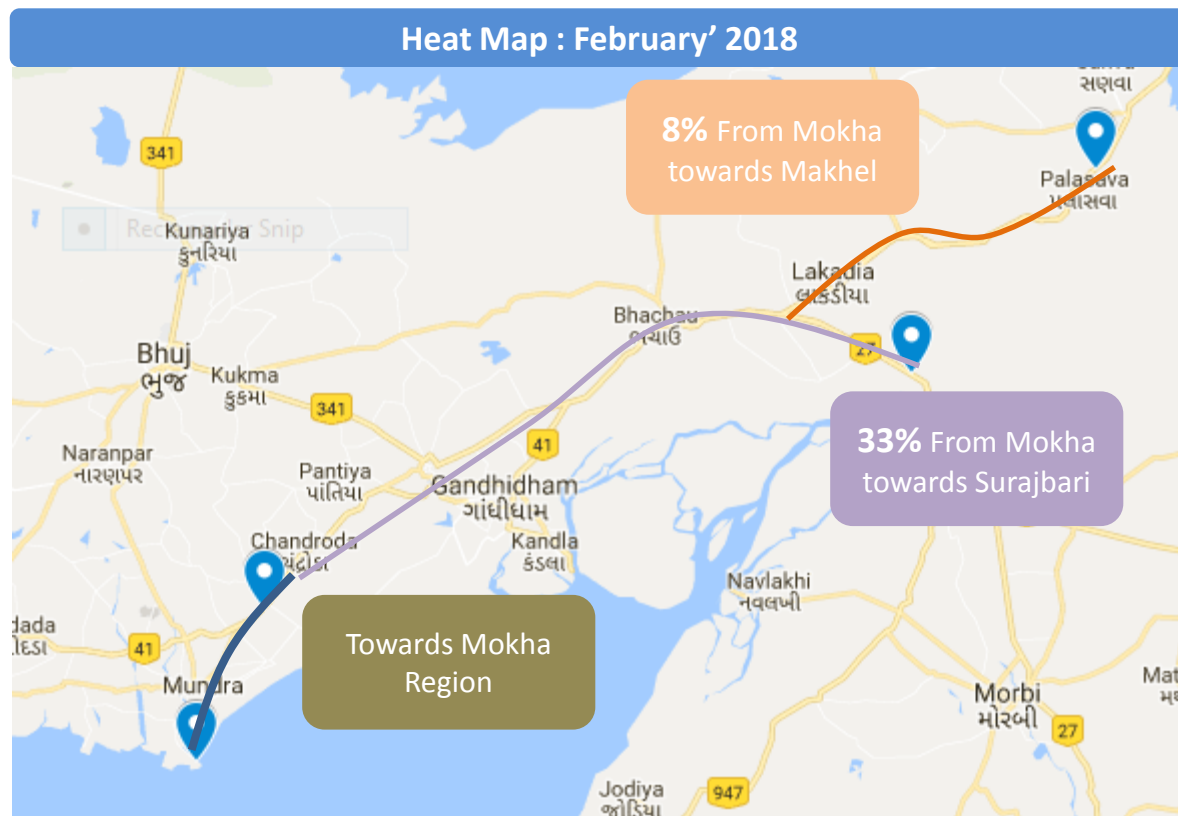
From Mokha towards		
Region	February'18	January'18
Surajbari	40%	44%
Makhel	6%	6%



Container movement around Mundra region via Truck

The below graphs display the container traffic bifurcation from Mundra region towards Mokha and Surajbari routes for overall MPT Custom gate and APSEZ Region

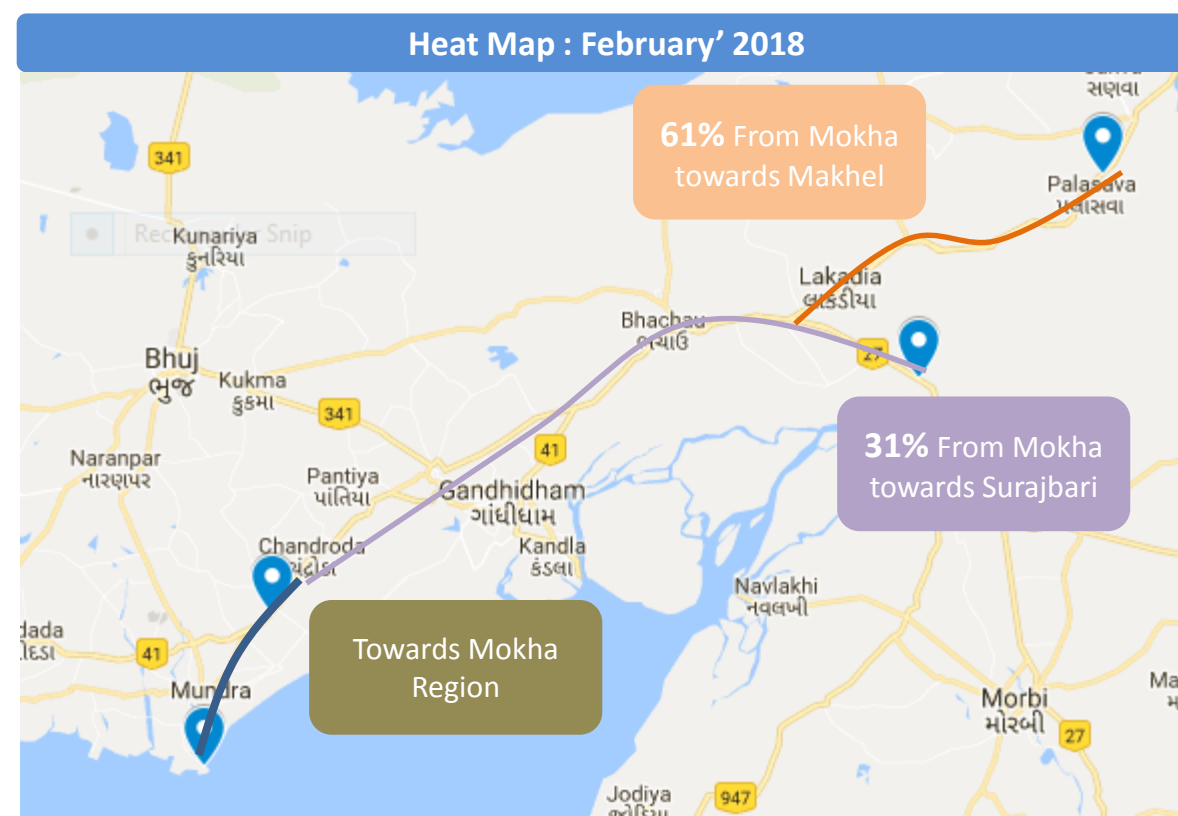
HEAT MAP : MPT Custom Gate



From Mokha towards		
Region	February'18	January'18
Surajbari	33%	36%
Makhel	8%	7%

HEAT MAP : APSEZ Region

i.e. only Adani port terminals at Mundra port region i.e. AICT, AMCT, AHPTL



From Mokha towards		
Region	February'18	January'18
Surajbari	31%	31%
Makhel	61%	60%

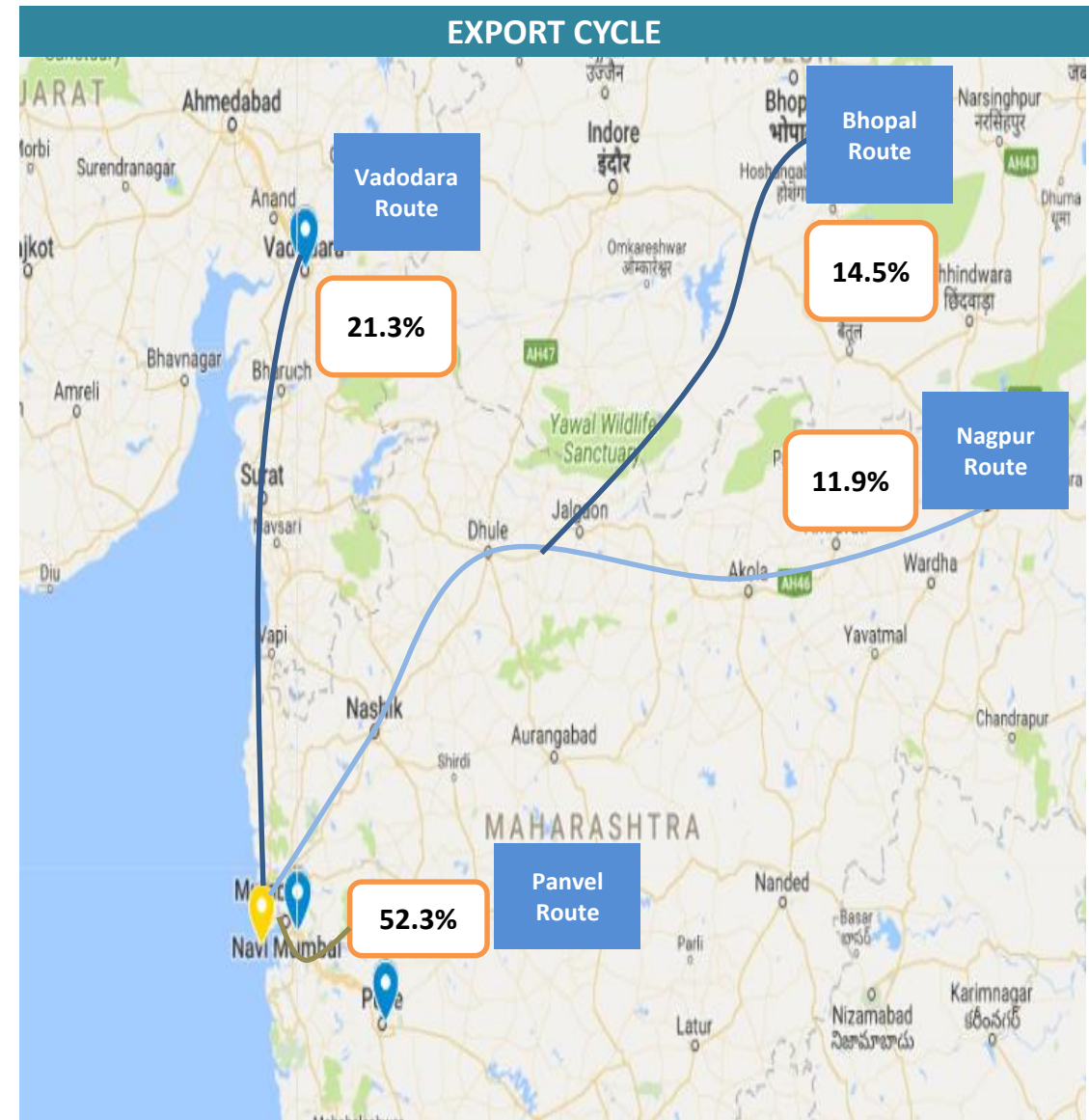
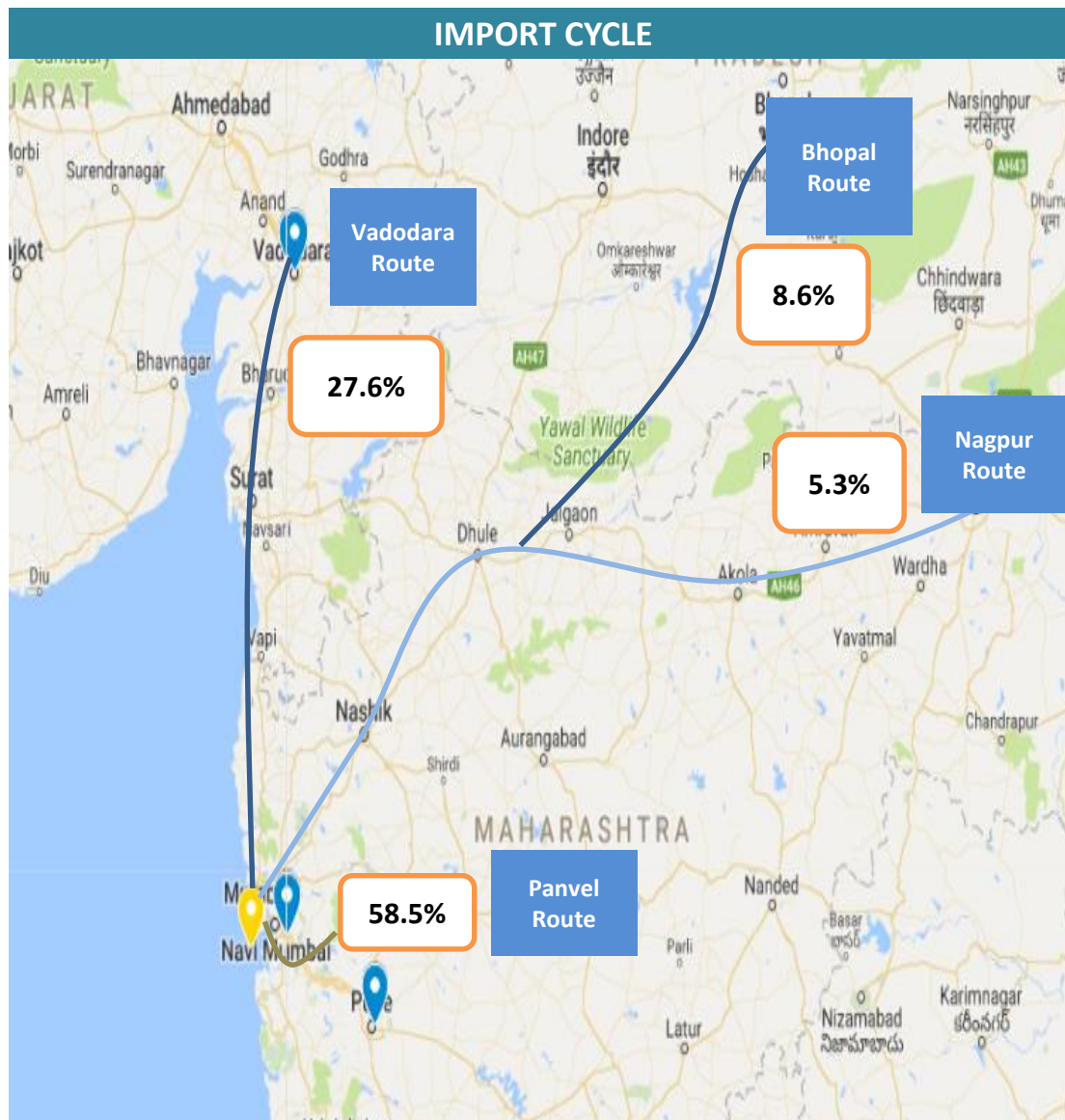
Note: LDB system has been installed at Mundra region toll plaza from November'17 onwards



Container movement around JNPT Port terminal region via Train

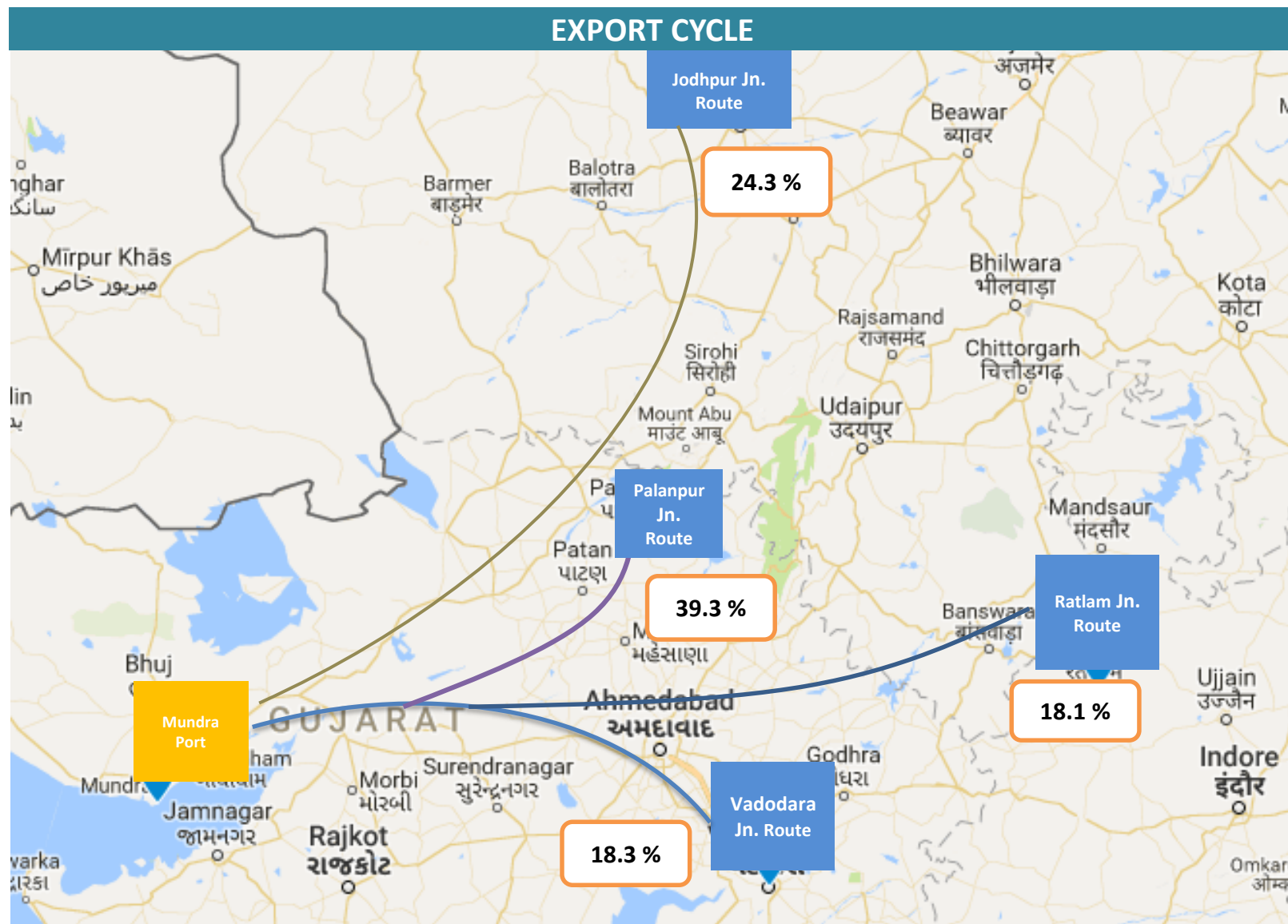
Container Movement around JNPT region via Train

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



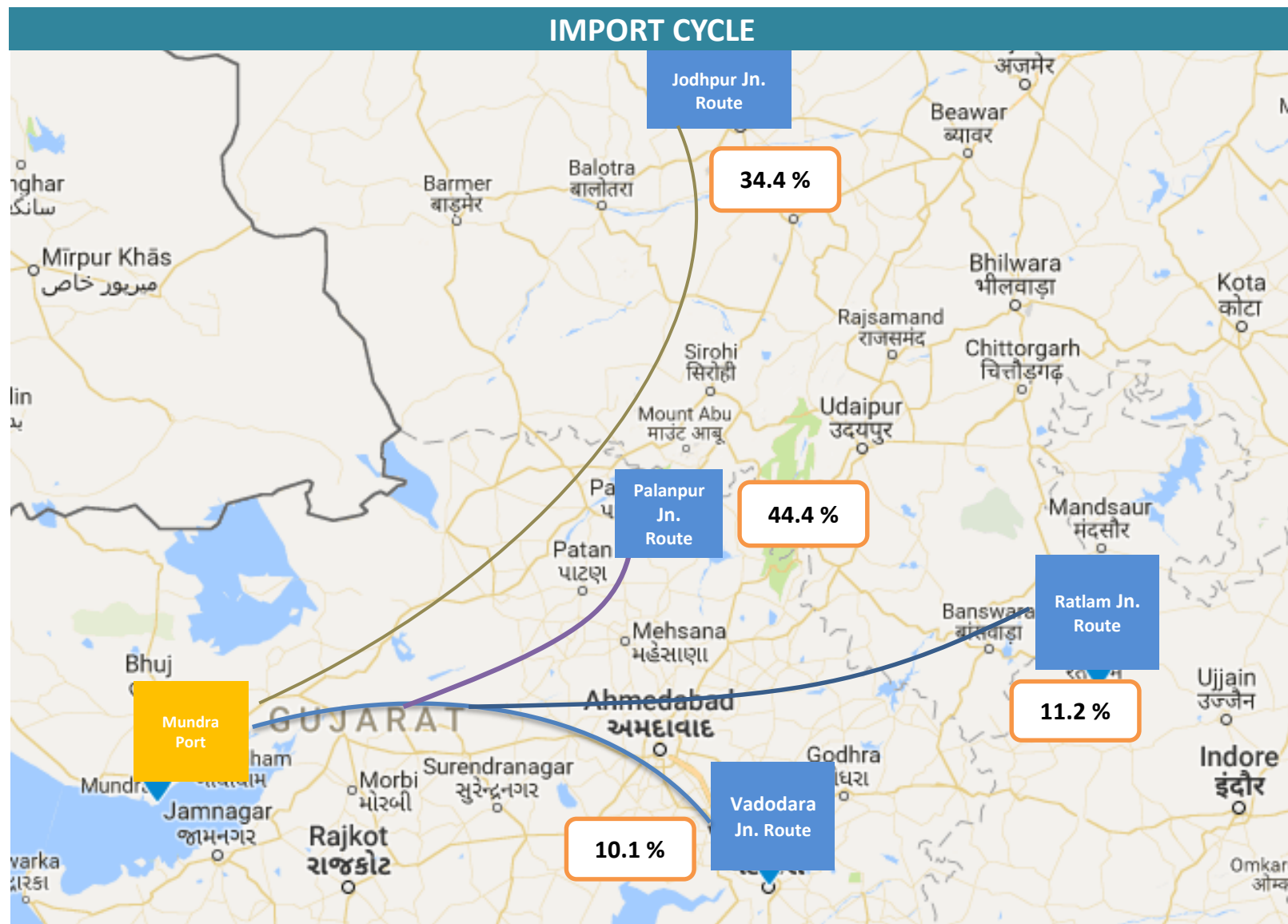
Container Movement around APSEZ region via Train : EXPORT CYCLE

The map shows the volume wise container movement through different railway routes in export cycle for the month of February'18



Container Movement around APSEZ region via Train : IMPORT CYCLE

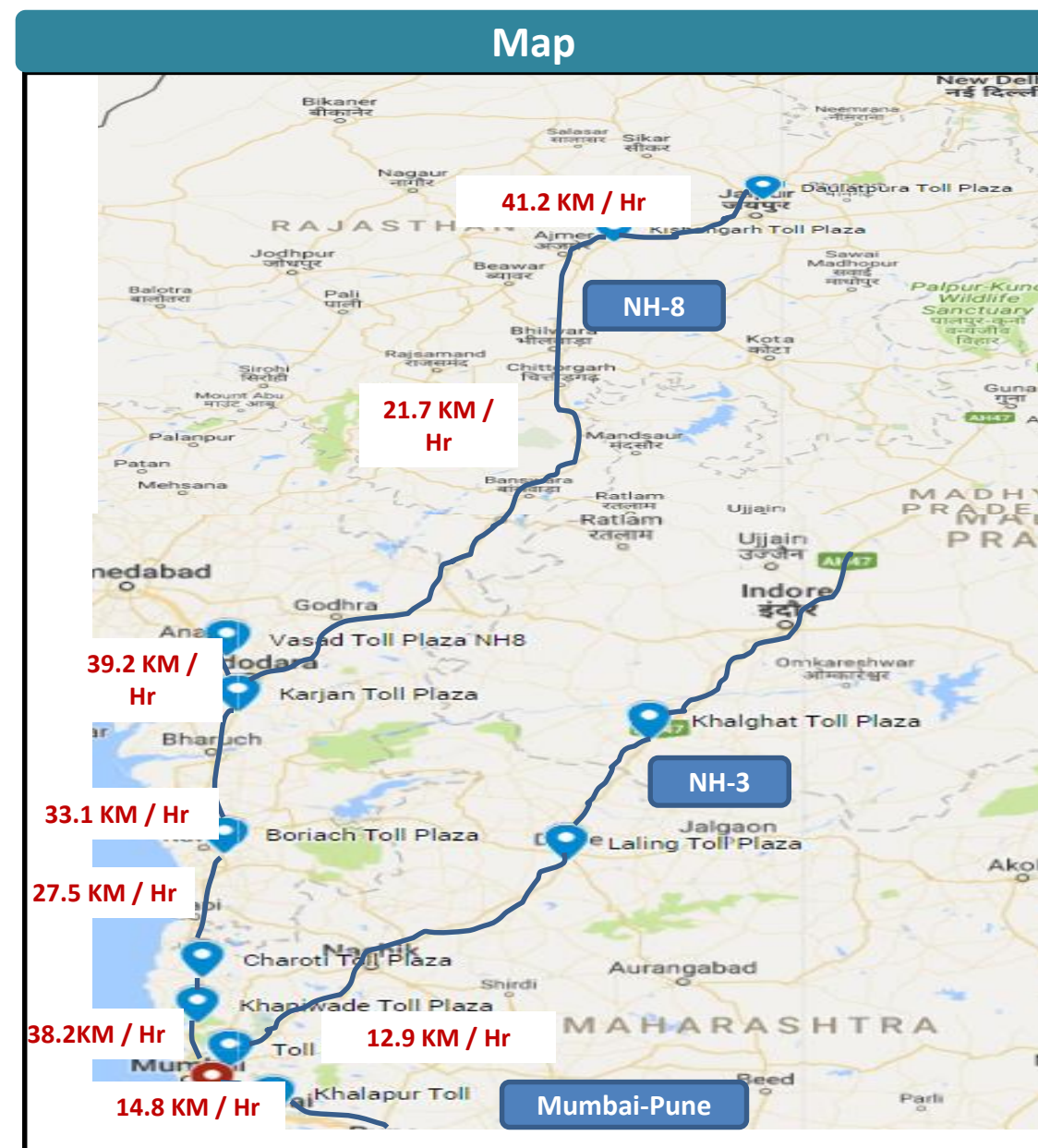
The map shows the volume wise container movement through different railway routes in import cycle for the month of February'18



Congestion Analysis : TOLL PLAZA (1/2)

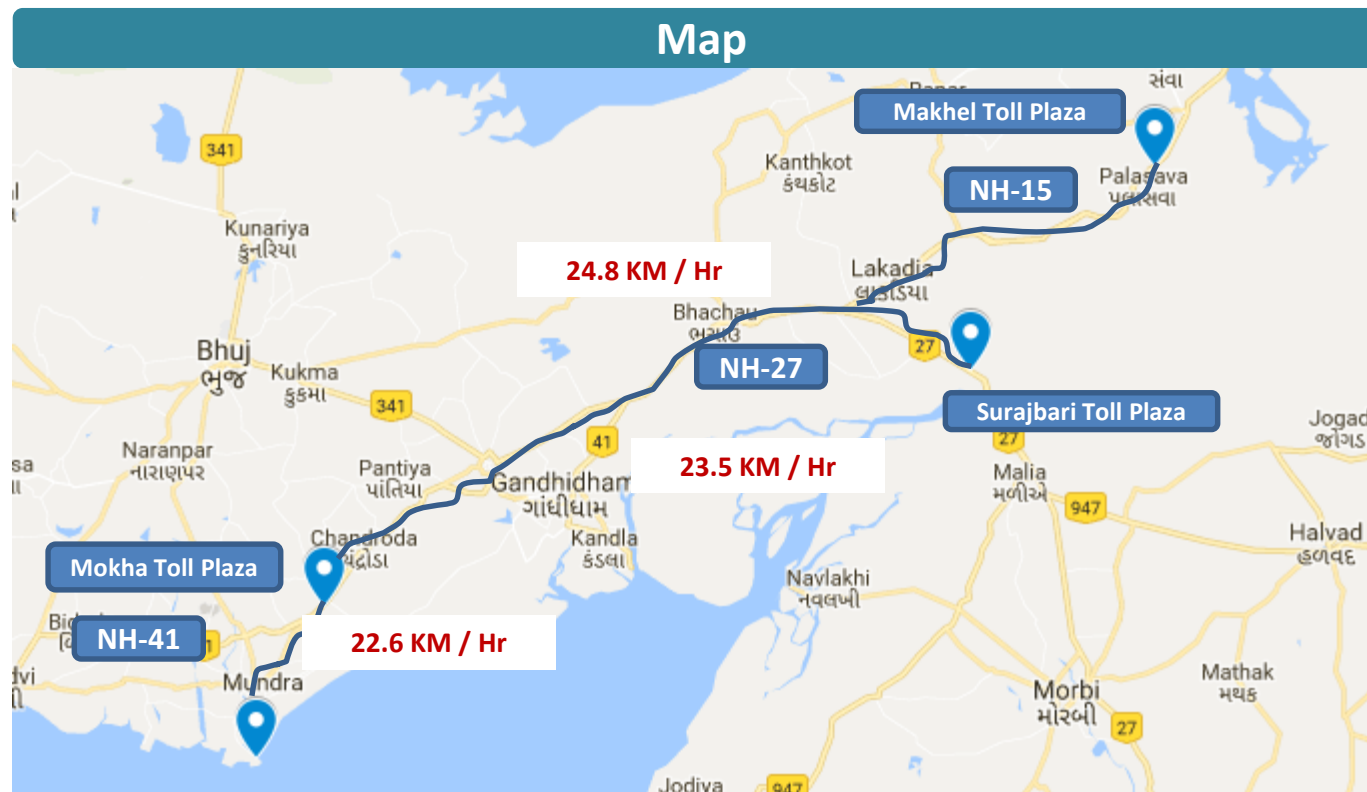
The below table shows all the toll plazas covered under DLDS connected with JNPT

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



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





Thank You !!