

# BEST PRACTICES IN OPERATION AND MAINTENANCE OF URBAN BUSES

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# MP-Group -What we do

FACILITY MANGEMNET

CITY BUS OPERATION

EMPLOYEE TRANSPORT BUSES AND CABS

MANPOWER LEASING

LOGISTICS SUPPORT

MANUFACTURING

EDUCATION

ATM BUSINESS SUPPORT

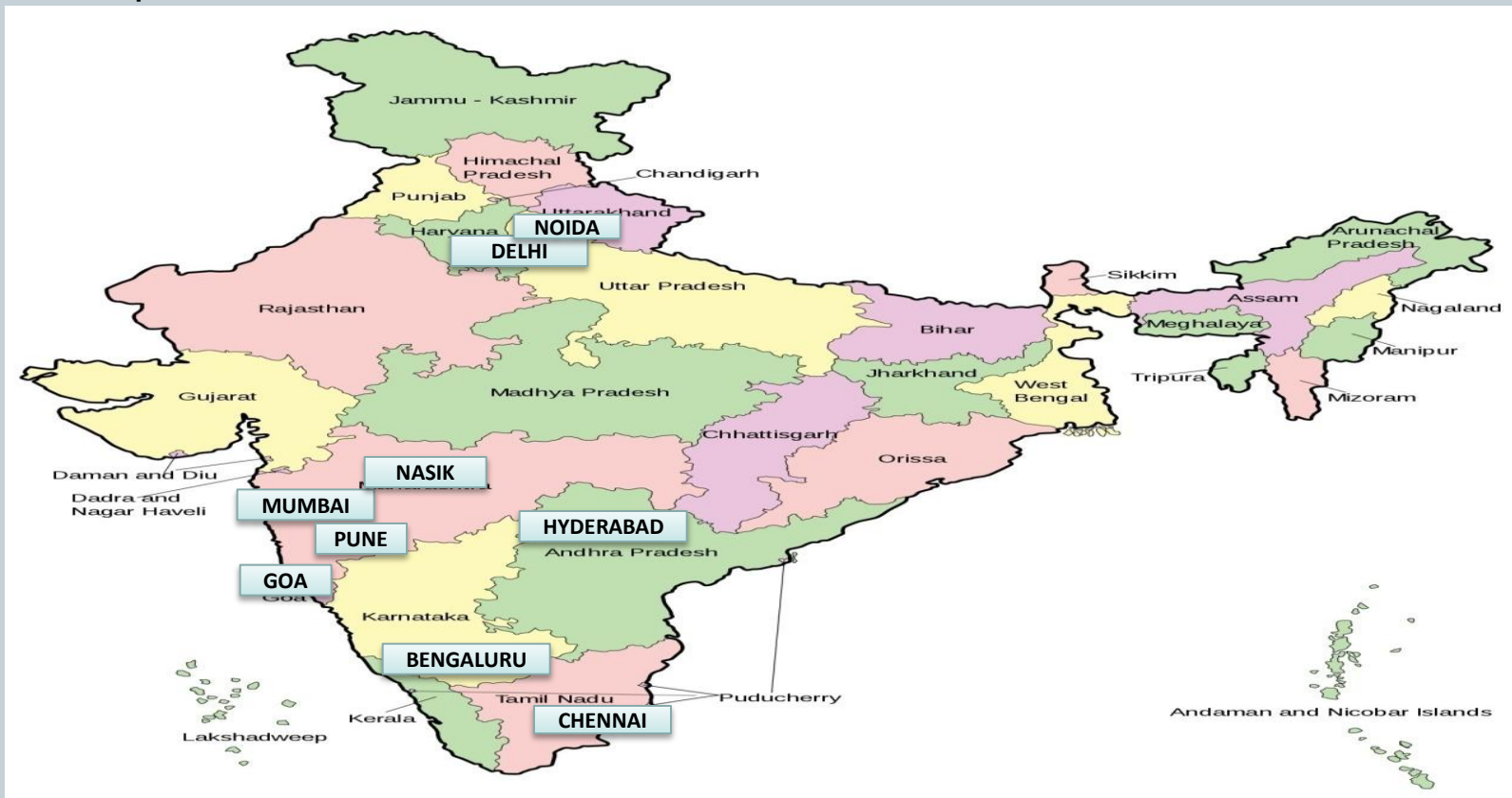
# Public transportation

- In year of 1997 MP group started with mere 2 buses, now operating over 550 buses.



# Service Network

- The Group is lead by a strong and experienced management team; it has a dedicated workforce of 30,000 people on their rolls comprising of managerial, supervisory, skilled and semi-skilled employees and has pan India presence



# BEST practices in maintenance of buses – Key components

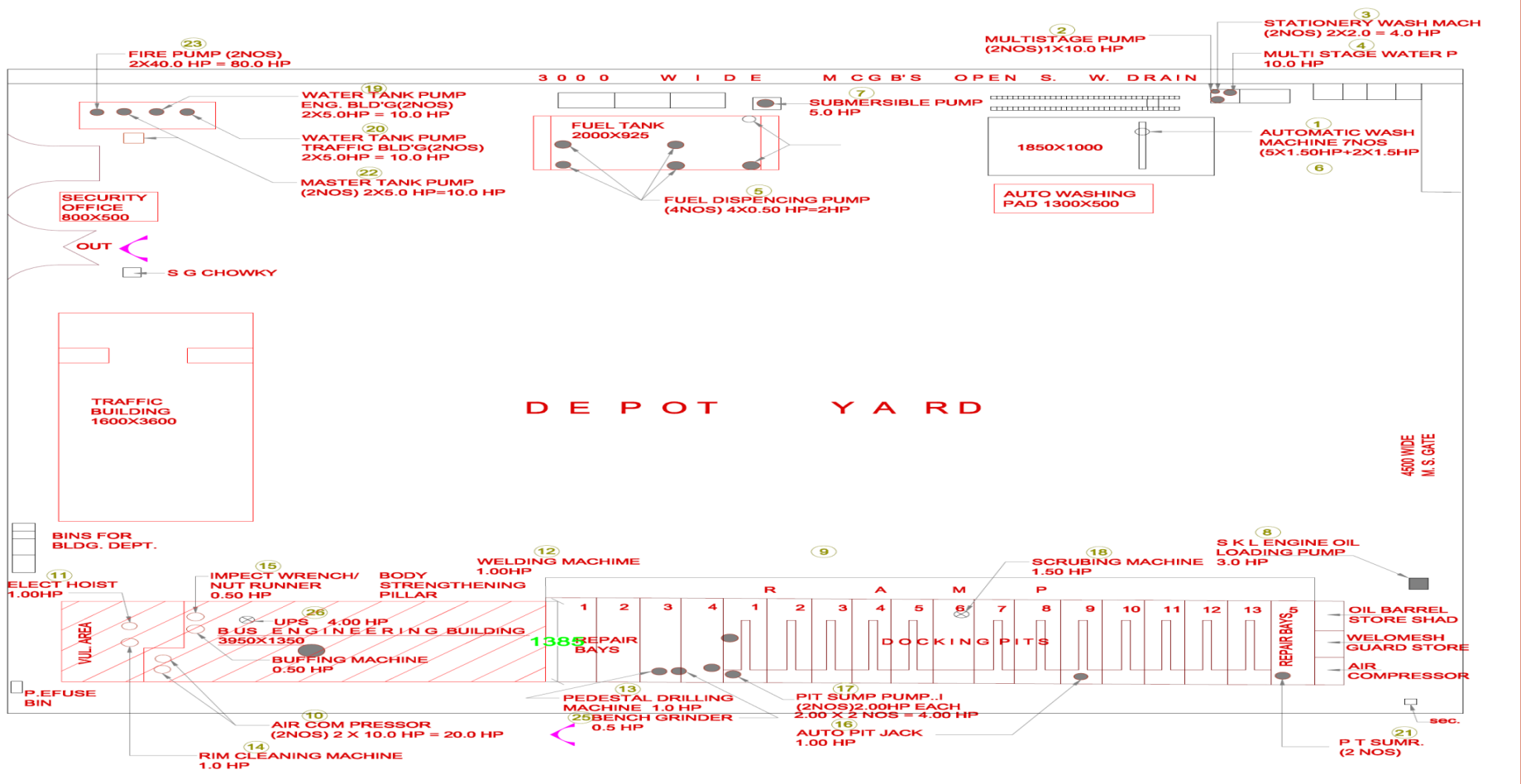
- Infrastructure requirements
- Depot design
- Equipments requirements
- Manpower requirements
- Bus maintenance schedules
- Stores and inventory management
- MIS

# Best practices in Maintenance of buses

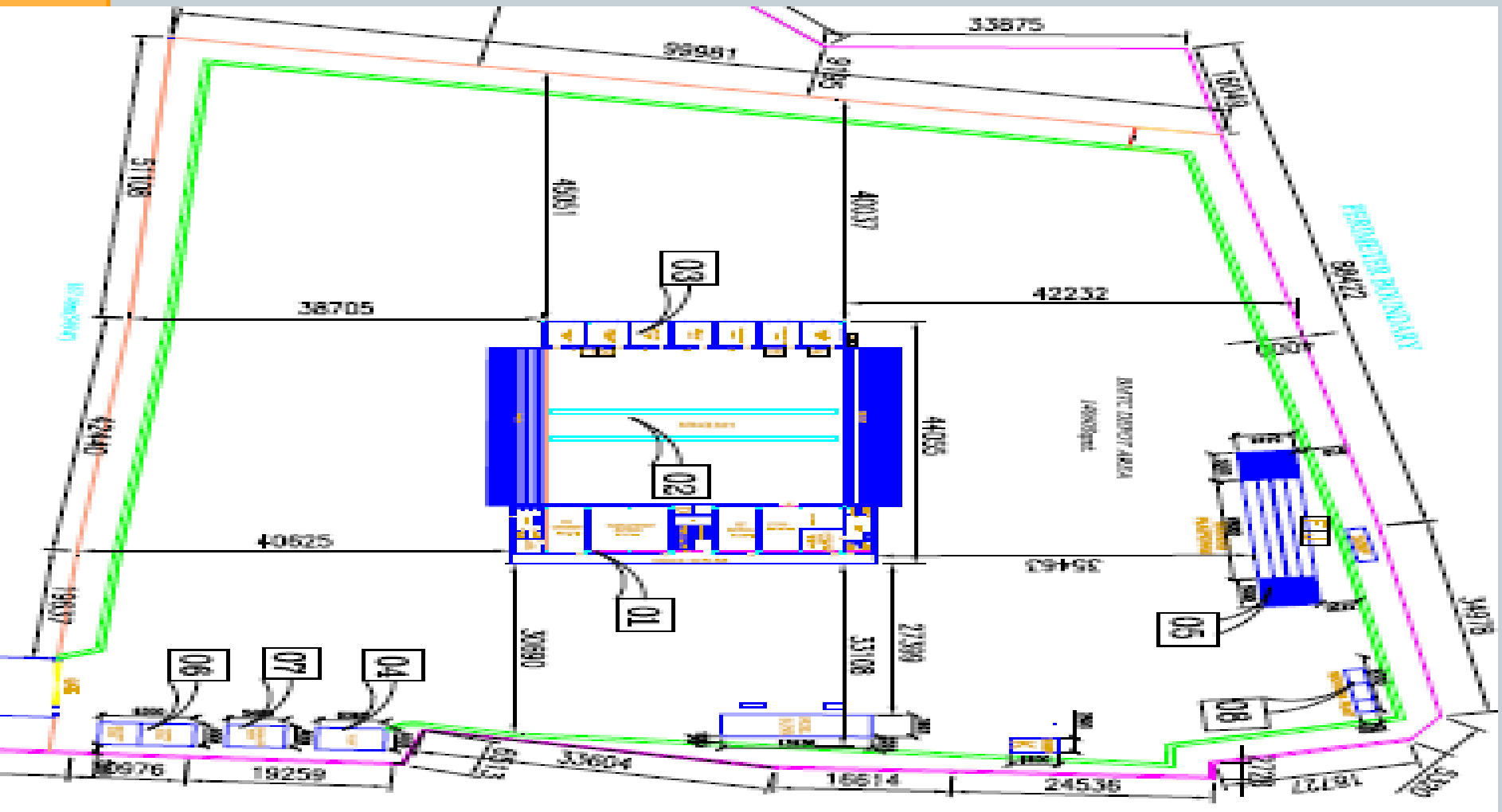
## Infrastructure requirements

- Land requirement :- 5 acres for 100 buses
- Inspection pits :- 1 pit for every 20 buses
- Repair bays : 1 per 50 buses
- Bus parking yard –Hard standing ground
- Fueling shed
- Bus washing shed
- Engineering building
- Traffic building
- Security post(at gates )

# Depot Layouts



# Depot Layout





# Area requirements

| Description                               | Area required in Sq mts | Area required in Acers | % Requirement |
|---|-------------------------|------------------------|---------------|
| Bus parking                               | 5520                    | 1.36                   | 27            |
| Bus maneuvering                           | 7520                    | 1.86                   | 37            |
| Open space required                       | 694                     | 0.17                   | 3             |
| Infrastructure requirement                | 1400                    | 0.35                   | 7             |
| Engineering sections and Traffic building | 5100                    | 1.26                   | 25            |
| Total                                     | 20234                   | 5.00                   | 100.00        |

# Depots –STUs /PPP



# Manpower requirement for maintenance of buses

| Manpower category     | Basis of working   |
|-----------------------|--|
| Workshop Manager      | 1 per depot  |
| Asst Workshop Manager | 2 per depot  |
| Supervisors           | 10 per depot (including Mech,Elec,Body,Tyre)                   |
| Clerical staff        | 3 per depot  |
| Mechanical work       | 14 per 11000 kms of daily run.                                 |
| Suspension work       | 2 per depot  |
| Greaser               | 3 per depot  |
| Electrician           | 1 per 12 buses   |
| Body fitter           | 1 per every 15 buses   |
| Welder                | 2 no's per depot   |
| Painter               | 2 no's per depot   |
| FRP Work              | 2 no's per depot   |
| TPM                   | 1 per every 17 buses   |
| Vulcanizer            | 3 per depot  |
| Helper                | 30% of technical staff allocation                              |
| Cleaners              | 1) Washing: - 1 per 5 buses.<br>2) Cleaning: - 1 per 12 buses. |

# Equipment Requirement /MIS reports

- Plant and Machinery Requirement :- 54 nos
- Special equipments(Depot modernization):- 14 nos.
- MIS reports :- 13 nos

# Preventive maintenance schedules

- Daily maintenance
- Periodic maintenance
  - Based on No's of days
  - Based on No's of Hrs of operation
  - Based on Run Kms
  - Based on Diesel consumption
- Major docking maintenance
- Anticipation of life of unit and replacement before failure.
- Attention of buses for FC renewal.

# Traffic operations – Key components

- Bus scheduling
  - Schedule planning
  - Demand based
  - Precise calculations of running time.
- Revenue Assurance team
- Monitoring of bus operations -ITS
- Training of drivers and conductors

# Traffic operations –Manpower requirement

| Category of staff          | Calculation    | Requirement | Bus staff ratio |
|----------------------------|----------------|-------------|-----------------|
| Drivers                    | 2.3 per bus    | 230         | 2.3             |
| Conductors                 | 2.3 per bus    | 230         | 2.3             |
| Controllers                | 1 per 10 buses | 10          | 0.1             |
| Revenue Assurance Team     | 1 per 40 trips | 25          | 0.25            |
| ETIM Staff(Receive /issue) | 1 per 15 buses | 7           | 0.07            |
| Admin staff                | 1 per 20 buses | 5           | 0.05            |

आपने कभी सोचा है बस के ड्राइवर और  
कंडक्टर में क्या फर्क होता है ?

कंडक्टर अगर सो जाये तो  
किसी का टिकट नहीं  
कटेगा और ड्राइवर सो  
जाये तो सबका टिकट  
कट जायेगा...



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**THANK YOU**