

# MISTER

Metropolitan Individual System of Transportation on an Elevated Rail

**Note: confidential business terms and information are included in a separate document.**

## Proposed PRT system

Specifics of MISTER system are described in greater detail in the attached presentation.

MISTER is a full PRT system with the following key characteristics:

Very light vehicles, suspended from a 2-way open guideway positioned some 10-15m above the ground. Vehicles are powered from traction rails. System provides up to 150 vehicles per kilometer of 2-way guideway with many small off-line stops on the ground and in the buildings, ensuring high capacity operation and delivery of passengers close to their destination. Travel is between start and destination for 1 to 5 persons (no ride sharing by strangers), without stopping. Patented guideway crossover (noncontact static switch) enabling failsafe operation and easy system expansion capabilities and 45 degrees climb/descend angle reduces ground footprint of stops and avoids necessity for lifts or escalator, thus reducing construction costs and ground space requirements. Vehicles have 2 business and 3 foldable seats, aircon, always level floor, full access for wheelchairs, baby carriages and bicycles. Same or special vehicles are used for freight delivery (although between different stops), using small containers.

## Infrastructure

Guideway: open (truss or tube with rails), always 2-way (doubling system efficiency without doubling costs)

Supports: to keep guideways at minimum of 10 m height to ensure vehicle clearance of 6 m above the streets, so that there is no interference with traffic lights, cables or other existing structures.

Stops: small (5 parallel bays to prevent queuing), minimal ground footprint (v. short ramp shadow – 3m), can be easily located anywhere, including interior of buildings and at different levels). Three stops p/km (0,6 mile) in each direction (6 stops p/km in total) with many more to be sold to private business like office towers, shopping centers, hotels etc. Additional stops enhance system functionality.

## Vehicles

- High realistic capacity (3,000-10,000 persons per direction per hour – ppdph). A 100 km of 2-way network, with 14,000 vehicles and 600 stops has a throughput capacity of some 750,000 passenger-kilometers (450,000 passenger-miles) **per hour !**
- Individual travel, non stop from start to destination (ultimate personal safety, no ride sharing with strangers).
- 50-80 km/h (30-50 mph) average travel speed.
- Full monitoring inside and outside of vehicles and at stops, enhancing personal safety.

## MISTER Sp. z o.o.

ul. Niedziałkowskiego 1/4  
45-085 Opole, Poland

Phone:  
+48(0)793 044 555

E-mail:  
info@mist-er.com

WEB site:  
www.mist-er.com

Company Reg. No:  
KRS 0000289729

- Preventing vandalism, as detection of such behavior will lead to automatic redirection of the vehicle to the Police station with all video and other sensory proofs available.
- Easy access for ALL (handicapped, mothers with baby carriages, bicycles) at all stops and at all loading bays.
- Ability to change destination at any time during the travel.
- Emergency button for redirection to hospital in case of health related emergency.
- Very light (300 kg / 600 lbs), therefore resulting in the light infrastructure and reduced costs all around.
- Simple (no untested technologies), therefore reliable.
- Externally powered from traction (like trains), hence light vehicles.
- Minimal energy consumption – efficient, small rotary electric motors.
- Full aircon and onboard communication + entertainment options.
- No seatbelts necessary.

### **Scope of the system**

Unlimited.

The initial pilot system can be extended easily and at will, without disruption of road traffic or parts of the system, which are already operating.

No need for any expensive underground channeling of the guideways, as the above ground routing is easily adjusted to suit local infrastructure requirements.

We consider that any “at grade” guideways are counterproductive and have a major hidden cost, which will be discovered latter, when any changes to guideway or their vicinity has to be made. Cost differential between at grade and in the air guideways of MISTER type is minimal, as compared to the benefits like flexibility of housing or other development on the ground level. Also - less planning and future restrictions.

### **Technology utilized**

Infrastructure – simple and light steel and concrete civil engineering structures based on patented designs.

Vehicles - composites and standard mechanical engineering based on patented designs.

Automation and IT - proprietary.

### **System power and use of renewable energy**

System and vehicles are powered from traction, i.e. electric rails mounted on the guideway. This is most energy efficient mode of energy distribution and usage. Electric power from grid is used directly by electric rotary motors mounted in each vehicle, with a small backup battery used for emergency only. Estimated power consumption by each vehicle under average load, including heating and air-con, should not exceed 5 KW.

Ecological impact per payload unit and overall, will be lesser than any other mode of transport.

Use of renewable energy is considered a non-issue. At the moment, obtaining all of the energy to run MISTER (or any other PRT system) from renewable power is not economical. And since MISTER is already several times more energy efficient than any rail, not to mention bus

or car transportation, then there is little point to try and squeeze this last 'drop of water from the rock'.

Of course, as soon as the technology permits such use of renewable energy, MISTER will certainly take an advantage of it. The roofs of our stops and guideways are designed from the beginning to accommodate additional load of e.g. solar panels.

### **Local job opportunities**

Yes, of course, development of the MISTER system in Santa Cruz would lead in a natural way to development of the local production capacities in order to serve further development of the system.

### **Extent to which the system could utilize technological innovations to better integrate transportation services**

This is unlimited and a definite direction of the development of this new technology area.

### **Improved user experience, such as real time information on connecting flights transit services.**

Yes, the MISTER design has envisaged from the very beginning, that the user interface, while in transit, will offer all kinds of additional experience and services. Not only those mentioned herewith but also whole area of providing tourist information in the native languages of travelers.

### **Design and operational considerations specific to local conditions.**

There are no specific considerations, which need to be taken into account at present. This is because the elevated infrastructure can be routed anywhere, with minimal impact on the existing roads and buildings, with low cost of development and high gradient climbing capability.

### **Construction, Maintenance, Operation and Safety.**

MISTER ltd. will subcontract local engineering and project management companies to support its own know-how with the local expertise of infrastructure development. System maintenance and operational safety will be adequately covered during the development of the system and certified by obtaining suitable permissions for use by public.

[Included in the attached CONFIDENTIAL document are the following topics:](#)

- [Duration and costs to build the pilot system](#)
- [Estimate of capital construction costs to build the system](#)
- [Estimate of operating and maintenance costs for the system](#)
- [Financing options](#)
- [Definition of the roles and relationship between the proposer, other partners, and the City.](#)
- [Implementation plan and schedule.](#)
- [Special, ZERO COST PROPOSAL](#)
- [Throughput simulation](#)
- [Resumes of Key Project Personnel](#)
- [Project Organization](#)
- [Detailed Project Execution Plan](#)
- [Field Test Procedure](#)
- [General Project Plan](#)