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TRAFFIC SYNCHRONIZATION

Advanced Transportation & Parking Management Systems

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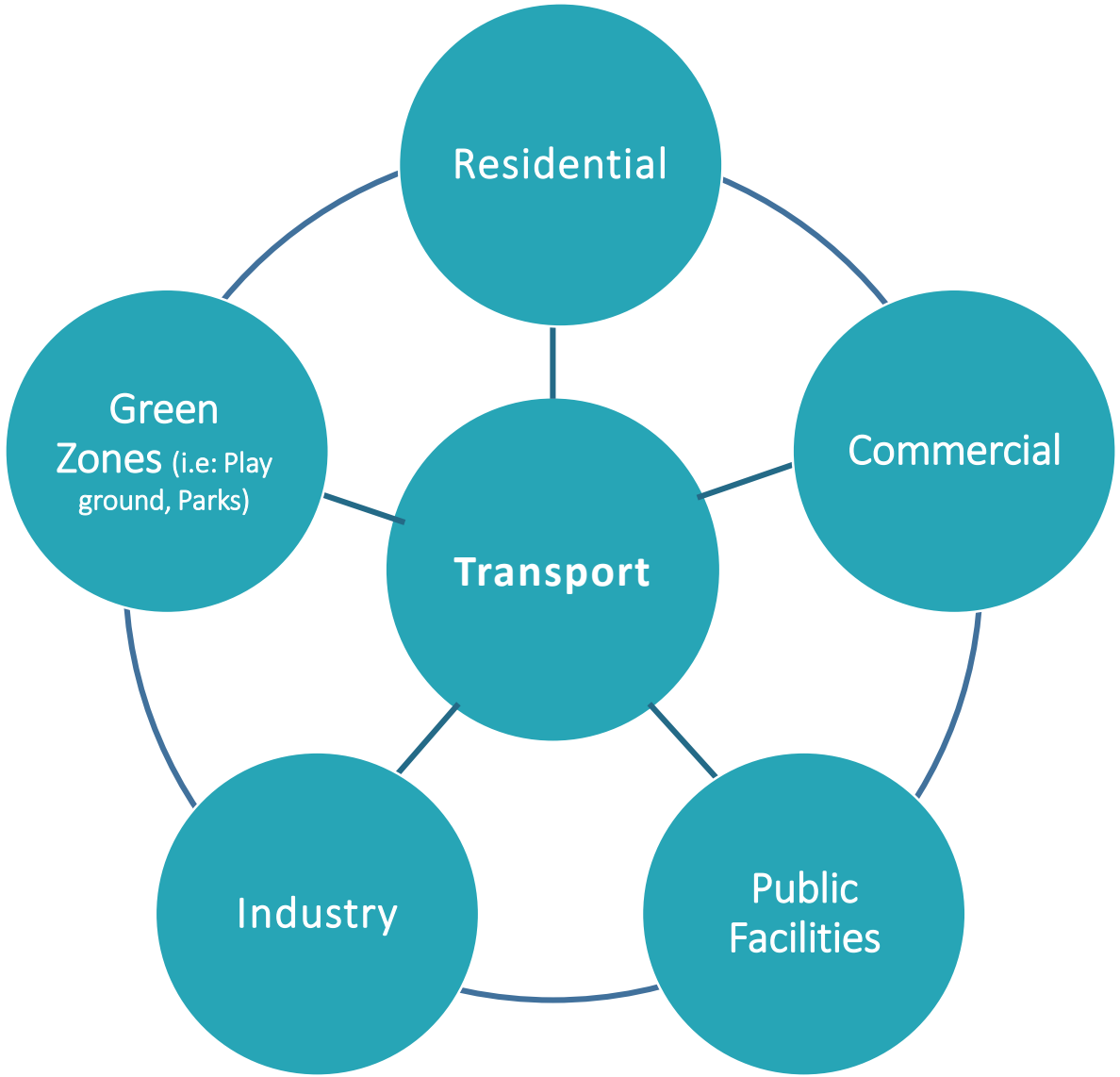

Smart City

A sustainable and effective Smart City ***depends*** on:

EFFICIENT TRANSPORTATION SYSTEM to connect/integrate the city's functions & components (residential, commercial, public etc.).

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Achieving an Efficient Transportation Systems requires

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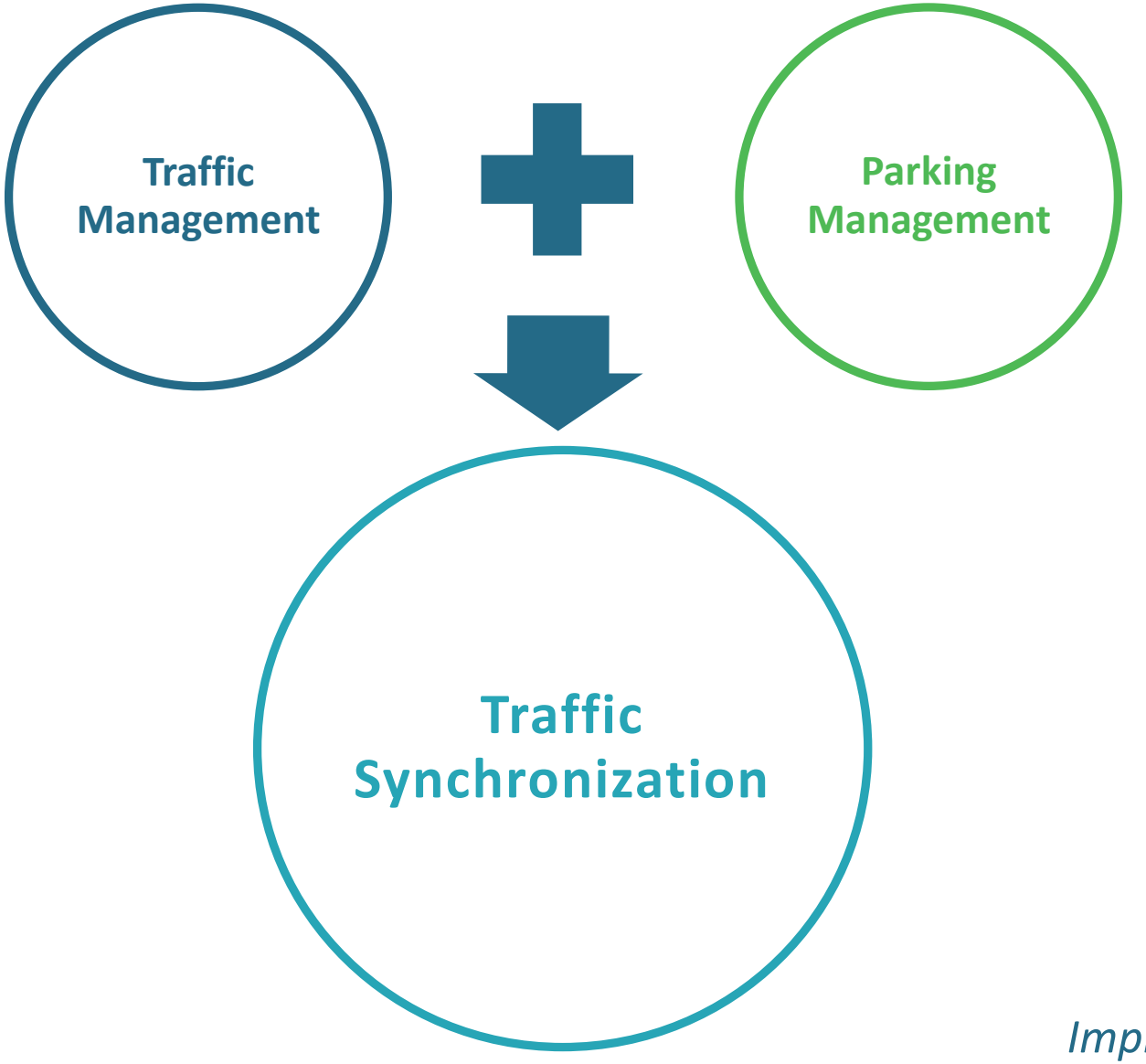

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Traffic Synchronization

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Objective: Optimize flow of transportation and parking.

Transportation Components:

Transit Hubs:

- Rail/Bus/Subway station
- Airport

Public Transportation

Trucks/Freight

Cars

Bicycles

Pedestrians/Foot traffic

Emergency vehicle

Types of Parking:

Ground level parking lot

Underground garage

Single level garage

Multi level garage

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Transit Hubs

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A transit hub - In addition to transportation, a transit hub can offer a wide range of **mixed-use facilities**:

- Commercial
- Social
- Cultural
- Events

→ **Promote further economic activity within the transit zone.**

Most common transit hubs in the city are:

- Rail/Bus/Tram/Subway station
- Airport

Rail/Bus/Tram/Subway Transit Hub – Typical vehicles include:

- Buses, taxi, rail, tram
- Private Cars
- Bicycles
- Trucks/Freight

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Airport Transit Hub – Transport operations at airport premises can be defined as:

1. Vehicles/apparatus restricted only for use **within airport premise.**
2. Transportation means used outside the airport and permitted at **designated areas in the airport**.

1. Airport premise restricted vehicles/apparatus

- Moving walkway/Auto-walk for pedestrians
- Passenger assistance carts (“golf carts”)
- Shuttle between terminals
- Emergency vehicles
- GSE – Ground Support Equipment fleet, such as:
  - Buses - transport passengers from/to aircraft/terminal
  - Belt loaders to load/unload baggage/cargo to aircraft
  - Passenger boarding stairs
  - Refueling trucks
  - Tugs and tractors
  - etc.

2. Transport outside airport and in designated areas

- Public transportation (bus, taxi, rail, tram)
- Private cars
- Trucks/Freight
- Shuttle service (i.e: hotels)

Transportation Management *Requirements*

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- **Improve safety** for vehicle users and pedestrians.
- **Increase punctuality** of public transportation
- **Enhance traffic efficiency** throughout and around the city to:
  - reduce traffic congestion
  - save fuel
  - reduce air pollution
  - lower noise pollution
- **Emergency vehicles** – Medical service, law enforcement, fire fighting, etc.
  - Rapid response ***and*** fast mobility from moment of dispatch to emergency destination
  - **Obtaining information** of emergency situation ***while on-route*** to emergency destination
  - Emergency fleet location
  - **Coordination and information sharing** between different emergency units (i.e: ambulance, fire fighting vehicle
- **Transit Hubs**
  - **Time coordination** between transport vehicles (bus/rail/tram) / flight connections (airport)
  - **Convenient, easy navigation** within the transit hub
  - **Streamline** passenger pick-up/drop-off to avoid stalling traffic
  - **Efficient and convenient passenger access** to transit hub, and departure from it

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Transportation Management *Capabilities*

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- Adaptive Traffic Control System (ATCS) – Self calibrating control solution that automatically adapts timing of traffic lights, based on real-time traffic conditions.
- Intelligent Transportation Systems (ITS) – Real-time traffic reporting of vehicle location and movement using GPS, GSM.
- Vehicle Fleet control & monitoring – Public transportation, emergency and private vehicle control, location and recovery.
- Advanced Traffic Management Systems (ATMS) – Integration of technological devices such as: sensors, cameras, monitors, servers, etc., to improve traffic flow
- Emergency vehicle – Mobile data terminal (MDT), video and audio equipment: dashboard cameras, bodycams

Parking Management *Requirements*

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- Reduce time to find available parking space
- Avoid traffic congestion at entrance/exit of parking facility
- Parking hubs for public transportation
- E-Parking - Parking with recharging stations for E-vehicles
- Parking for bicycles
- Provide maximum vehicle capacity in *minimum* land space

Parking Management *Capabilities*

- Parking with robotic systems to move cars from one level to another.
- Automated parking - An automated parking system moves car to available parking space.
- Smart parking - Devices such as cameras, sensors, vehicle counting equipment, etc. to determine parking lot occupancy. Preventing drivers from spending too much time searching for a parking space.
- Vehicle license plate number recognition for fast entrance/departure from parking facility .
- Bicycle underground parking – Automated parking systems for bicycles, keeps them safe from the weather and theft, and freeing ground-level sidewalk space for pedestrians.

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Impact of Traffic Synchronization on a Smart City

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- Enhance traffic efficiency flow
- Reduce vehicle pollution
- Lower demand for fuel
- Reduce noise pollution
- Improve traffic safety
- Time efficient parking
- Maximum vehicle capacity / minimum land area for parking
- Encourages sustainable ridership

- Increases economic productivity
- Encourages use of public transport, bicycles and walking
- Sustainable and environmentally friendly

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Our Experience & Capabilities

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Urban planning – Smart City Planning company being considered to be among the leading urban planners and architects working in Israel and abroad. The company took a major role in planning the Rio de Janeiro Olympic City in Brazil, Early Childhood centers as well as urban renewal and development projects in China.

Urban planning of an eco-friendly and sustainable city, encompassing and integrating the various city zones and functions:

- Energy generation from solar and voltaic panels
- Infrastructure (roads, highways, bridges),
- Intelligent traffic synchronization
- Recreational facilities, i.e.: parks, sport centers
- Public facilities, i.e.: hospitals, education, cultural institutions
- Air quality monitoring systems
- Water and sewage treatment facilities
- Waste management
- Weather, wind direction and intensity, rain fall and flood control road
- Emergency services i.e. police, health, fire, and rescue.
- City wide WiFi hot spots.

continued…

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Our Experience & Capabilities

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Landscape planning – Large scale landscape planning that is applicable to the different characteristics of the various city zones and functions.

The firm has an impressive portfolio of residential, commercial, industrial and government projects in Israel, Bulgaria, Cyprus, Romania, Nigeria to mention just a few.

Urban botanical expertise – Over 30 years of extensive knowledge and experience in the horticulture industry. This includes analysis and evaluation of local environment (i.e.: geography, climate, rainfall) and providing botanical solutions for the different city zones.

Starting from a macro perspective of the modern city – institutions, commercial, residential, etc. – and zoning down to the micro level of the community and neighborhood.

An appealing & pleasant outdoor environment → Encourages use of public transport, bicycles & walking → ***Improve quality of life in the city***