



ENVIRONMENTALLY SUSTAINABLE TRANSPORT IN SEMARANG

SUKAWI SUTARIP
MAYOR OF SEMARANG CITY,
CENTRAL JAVA, INDONESIA



OVERVIEW OF SEMARANG CITY

- **WIDTH AREA : 37.370 HECTARE**
- **DIVIDED INTO 16 DISTRICTS**
- **POPULATION : 1.433.699 PEOPLE**
- **GROWTH RATE : 1.3 % PER YEAR**
- **DENSITY RATE : 3.769 PERSON/KM2**
- **PDRB COSTANT PRICE : RP 6.642.897.356.000,-**
- **PDRB PER CAPITA : RP 19.341.736,84**
- **TOPOGRAPHY : HIGH LAND AND LOW LAND**

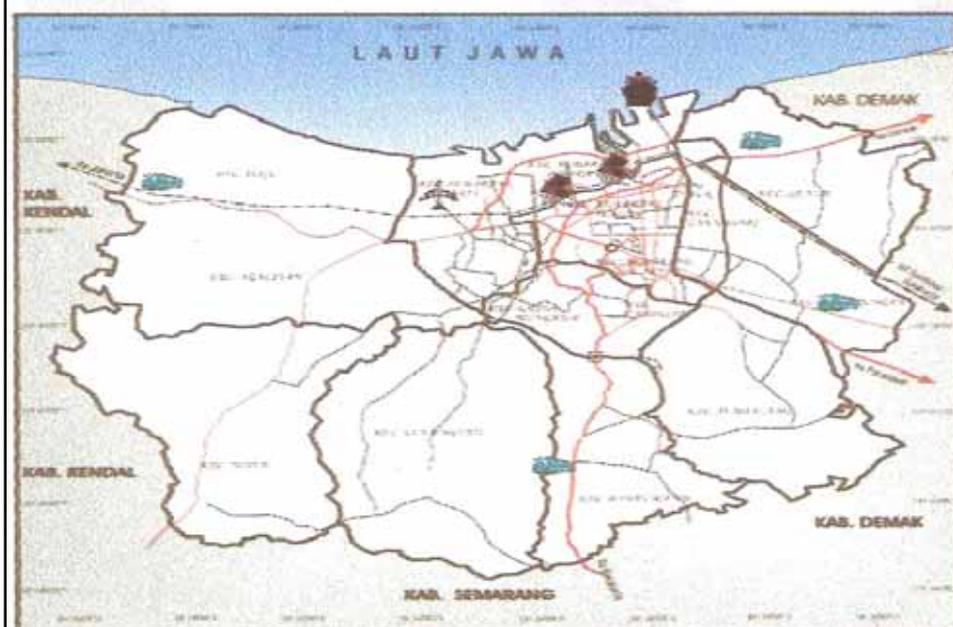
TRANSPORTATION CONDITION

- **LENGTH OF ROAD : 2.762.621 KM**
- **TRANSPORTATION FACILITIES :**
 - **ACHMAD YANI INTERNATIONAL AIRPORT**
 - **TANJUNG MAS PORT**
 - **TWO RAILWAY MAIN STATIONS**
 - **TWO TYPE A BUS TERMINAL**
 - **ONE TYPE B BUS TERMINAL**
 - **ONE TYPE C BUS TERMINAL**

PUBLIC TRANSPORTATION SERVICE

- MAIN ROUTE :
 - 36 ROUTE
 - 715 VEHICLES
- BRANCH ROUTE :
 - 11 ROUTE
 - 1527 VEHICLES
- SUB BRANCH ROUTE:
 - 29 ROUTE
 - 761 VEHICLES

TRANSPORTATION ROUTE IN SEMARANG



PROBLEMS RELATED TO TRANSPORTATION

- THE GROWTH OF VEHICLE INCLUDING MOTOR CYCLE WITH LIMITED ROAD
- THE GROWTH OF ACTIVITY CENTRES WITH LOW CAPACITY OF ACCESS
- THE INCREASE OF USE OF PRIVATE CARS
- TRAFFIC JAM AT CERTAIN PLACES
- POOR PUBLIC TRANSPORTATION
- HIGH AIR POLLUTION
- PEOPLE RELY ON MOTOR CYCLE AND CAR FOR THEIR MOBILITY

AIR POLLUTION CAUSED BY TRANSPORTATION

Streets	CO ($\mu\text{g}/\text{Nm}^3$)	PM ₁₀ ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{Nm}^3$)	NO ₂ ($\mu\text{g}/\text{Nm}^3$)	O ₃ ($\mu\text{g}/\text{Nm}^3$)
Jl. Ahmad Yani	11.34	204	36.68	77.08	180.00
Jl. Brigjen Sudiarto	8.54	216	31.44	124.08	33.32
Jl. Majapahit	12.34	177	23.58	62.04	94.08
Jl. Pandanaran	14.42	165	36.68	77.08	53.92
Jl. Siliwangi	12.32	187	31.44	58.28	25.48
Standard	10,000	150	365.00	150.00	200.00

Source: Ruktiningsih (2003)

The result of inspection shows that 42.16% of cars with gasoline fuel do not comply with standard and 99.4% cars with diesel fuel do not comply with standard

CO₂ per capita of cities in Indonesia

No	Cities	Population	CO ₂ (Ton/year)	CO ₂ /Capita
1	Yogyakarta	510,108	299,840	0.6
2	Surabaya	2,639,000	1,474,337	0.6
3	Cilegon	320,612	207,575	0.6
4	Semarang	1,386,711	889,334	0.6
5	Bogor	745,641	202,709	0.3
6	Denpasar	595,523	770,459	1.3
7	Balikpapan	533,565	112,443	0.2

Source: ICLB, 2004

TRANSPORTATION CONDITION





ONE TYPE OF PUBLIC BUS



MORE PRIVATE CARS

ACTIONS PLAN TAKEN

1. GAS EMISSION INSPECTION OF VEHICLES
2. IMPROVEMENT OF SAFETY PEDESTRIAN
3. REPLACE THE LOW OCCUPANCY RATE PUBLIC BUSES TO HIGH OCCUPANCY RATE PUBLIC BUSES
4. INTRODUCE AIR CONDITIONED PUBLIC BUS TO ENCOURAGE PEOPLE TO USE PUBLIC TRANSPORTATION
5. BUILD HIGH RISE HOUSING FOR LOW INCOME PEOPLE AT DOWN TOWN
6. BUILD HIGH RISE HOUSING & SETTLEMENT FOR INDUSTRIAL WORKER AT INDUSTRIAL ZONE
7. FACILITATE PICK UP AND DROP OF PROGRAM INITIATED BY COMMUNITY AND BY GOVERNMENT OFFICES



PICK UP AND DROP OFF CAR FOR SCHOOL CHILDREN



PICK UP AND DROP OFF BUS FOR GOVERNMENT EMPLOYEES



AIR CONDITIONED BUS



HIGH-RISE HOUSING FOR LOW-INCOME PEOPLE AT DOWN TOWN

IMPROVEMENT OF SAFETY FOR PEDESTRIAN



PROGRAMME PLANNED

- 1. INTEGRATED PUBLIC TRANSPORTATION BASED ON HIGHWAY (BUS) AND RAILWAY AT REGIONAL AREA (SEMARANG AND VICINITY)**
- 2. PROMOTE GOOD AND RELIABLE PUBLIC TRANSPORTATION**
- 3. CHANGE OF MANAGEMENT OF PUBLIC TRANSPORTATION FROM SEVERAL OPERATORS TO CONSORTIUM OPERATOR**
- 4. ESTABLISH PUBLIC SERVICE BODY DEALING WITH MASS RAPID TRANSIT**

PROGRAMME PLANNED (*cont.*)

- 5. RESTRICT SCHOOL CHILDREN TO USE MOTOR BIKE TO SCHOOL**
- 6. FACILITATE NON-MOTORISED TRANSPORT**
- 7. BUILD INFRASTRUCTURE FOR PHYSICALLY DISABLED, ELDERLY**
- 8. BUILD INFRASTRUCTURE FOR PEDESTRIAN**
- 9. PROMOTE AREA CONTROL TRAFIC SYSTEM**
- 10. PROMOTE ALTERNATIVE FUELS SUCH AS BIOMASS, ETHANOL, BIODIESEL**

KEY SUCCESS :

1. COMMITMENT AMONG STAKE HOLDERS
2. STRENGTHENING INSTITUTIONS
3. LAW ENFORCEMENT
4. GOOD COORDINATION
5. REGULER MONITORING

CHALLENGES

1. CONFLICT OF INTEREST AMONG STAKE HOLDERS
2. LOW AWARENESS RELATED TO ENVIRONMENTAL SUSTAINABILITY
3. LIMITED HUMAN RESOURCE



**THANK YOU VERY MUCH
FOR YOUR ATTENTION**