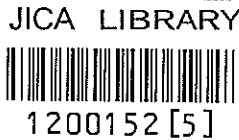
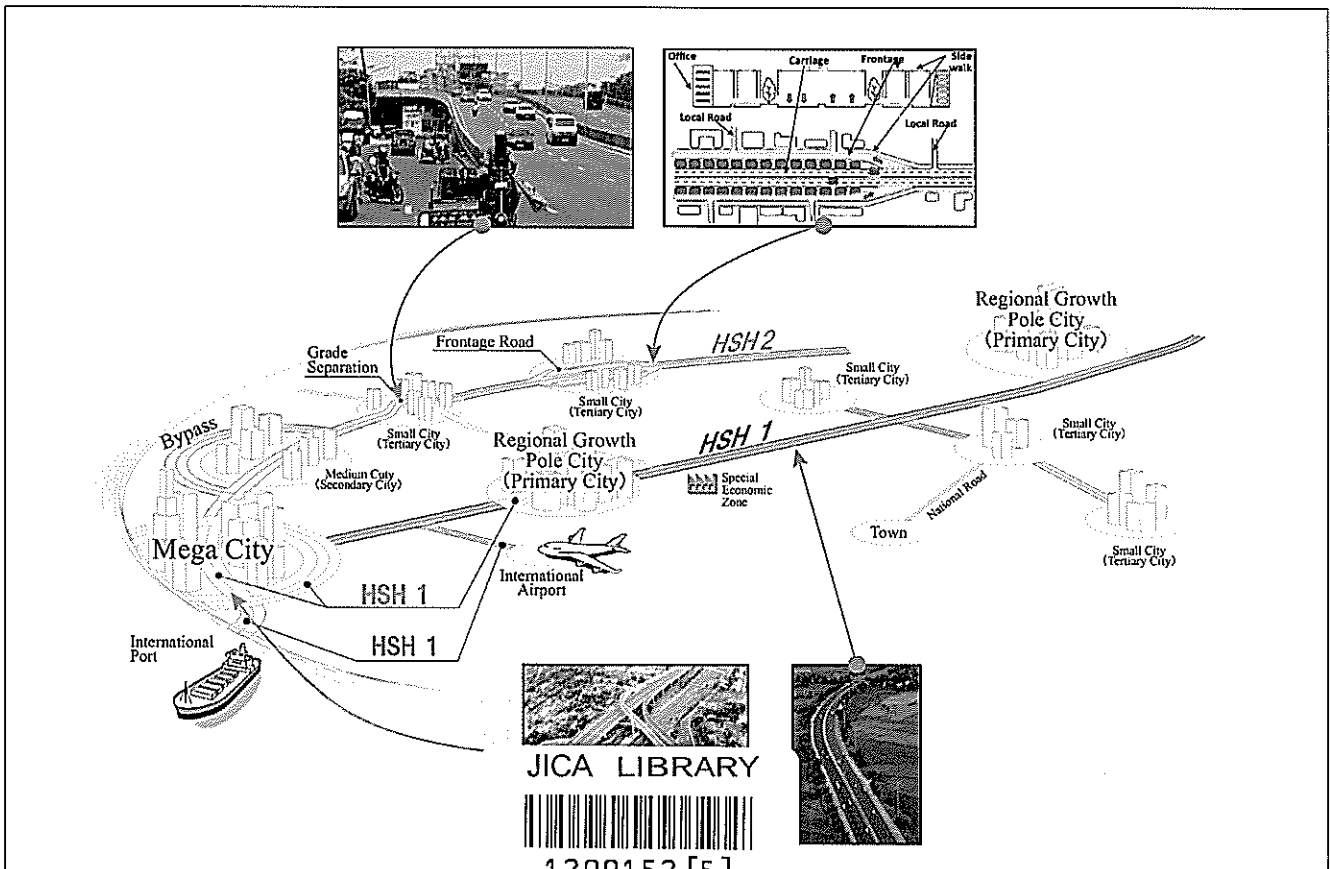


THE STUDY OF MASTER PLAN ON HIGH STANDARD HIGHWAY NETWORK DEVELOPMENT IN THE REPUBLIC OF THE PHILIPPINES



Definition:

Highways which provide high level of traffic services by assuring high speed mobility and safe travel in order to vitally support socio-economic activities for sound socio-economic development of strategic regions and the country as a whole.

HSH 1 : Arterial High Standard Highway
(Toll Expressway)

HSH 2 : Regional High Standard Highway
(Arterial road with Bypass, Grade Separation and/or Frontage road)

Concept of High Standard Highways (HSHs)

July 2010

E I D
J R

WHY HSH IS NEEDED?

Policy for Development (MTPIP)

- Promotion of national integrity by strengthening the Nautical Highways linking roads and ferries;
- Decongestion of traffic in Metro Manila;
- Active support for development of Clark and Subic being international logistics bases;
- Improvement of accessibility to main tourist spots;
- Road development for peace recovery in conflict regions such as Mindanao;
- Maintaining the road assets.

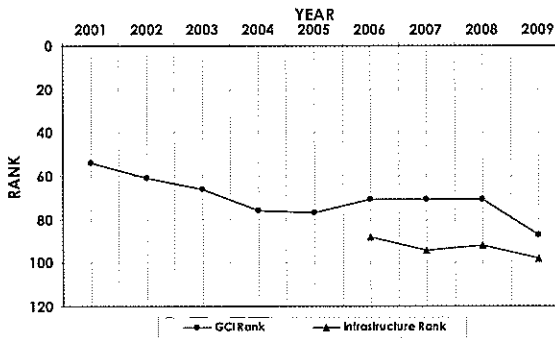
Need for Traffic Efficiency

- Traffic congestion in the road network has been a perennial problem directly affecting the socio-economic activities in the country;
- The low quality and limited scope of existing infrastructure is one of the major factor contributing to decline of Philippine Global Competitiveness;
- Poorly developed transport network increases the gap between regions and economic centers which lowers productivity and increases the costs to markets;



.. these conditions pull down the country's global competitive advantage, thus losing opportunities for foreign, as well as domestic investments to neighboring countries . . .

PHILIPPINE GLOBAL COMPETITIVE INDEX (GCI)



Functions of HSHs

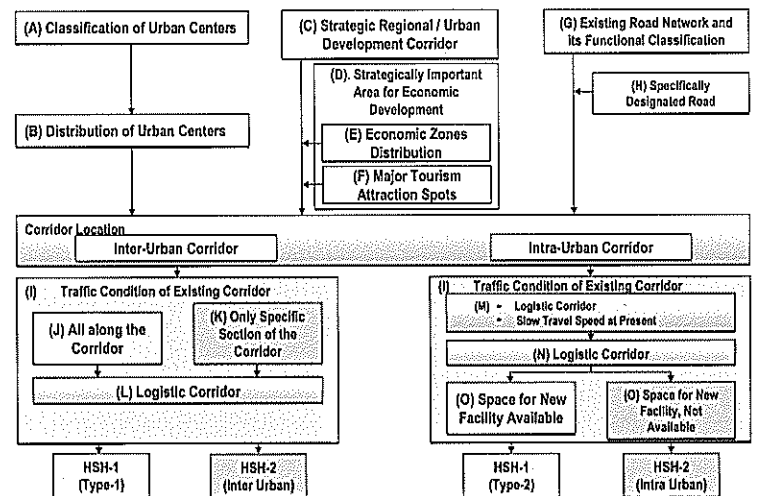
HSH Type		Function
Arterial High Standard Highway (HSH1)	Type 1 (Inter-urban)	To connect major urban centers, strategic development areas, major transport facilities each other with highly efficient and reliable means of transportation.
	Type 2 (Intra-urban)	To connect traffic generating sources, economic development centers and major transport facilities each other with highly efficient and reliable means of transportation
Regional High Standard Highway (HSH2)		<ul style="list-style-type: none"> ▪ To connect HSH-1 each other; ▪ To function as supplementary to HSH-1.

WHAT IS HSH?

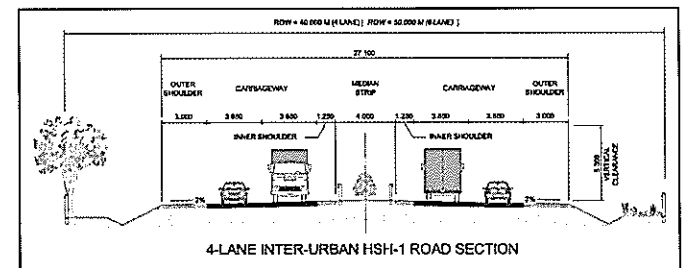
Basic Concept of HSHs

Features	HSH-1	HSH-2
Access Control	▪ Full access control	▪ Partial access control or no access control
Usage of Highway	▪ Exclusive for vehicles except slow moving vehicles such as jeepneys and tricycles	▪ All kinds of vehicles with special consideration for slow moving vehicles and pedestrians
Toll or Not	▪ Basically toll road	▪ Non-toll road
LOS Target	▪ LOS B (Inter-Urban)	▪ LOS C (Inter-Urban)
	▪ LOS C (Intra-Urban)	▪ LOS D (Intra-Urban)
Design Speed (km/hr)	▪ 100 ~ 120 (Inter-Urban)	▪ 80 ~ 100 (Inter-Urban)
	▪ 60 ~ 80 (Intra-Urban)	▪ 60 (Intra-Urban)
Intersecting Road	▪ Interchange for major rd.	▪ Grade separation for major rd.
	▪ Over bridge or underpass for minor rd.	▪ At-grade intersection for minor rd.
HSH Facility	▪ Full access-controlled expressway	▪ Arterial road w/ Bypass(es)
		▪ Arterial road w/ frontage roads
		▪ Art. rd. w/ grade sep. at intrstion
		▪ Multi-lane Arterial road

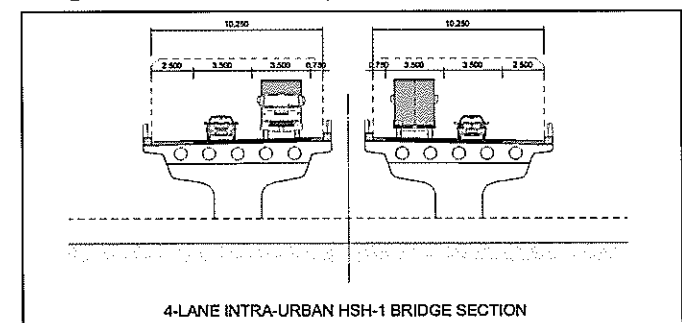
High Standard Corridor Selection Procedure



Design Standard of HSH 1 (Inter-urban)



Design Standard of HSH 1 (Intra-urban, Bridge Section)



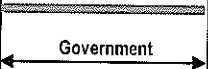
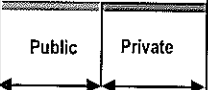
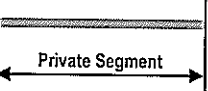
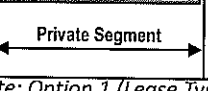
PPP SCHEMES

RECOMMENDATIONS

PPP Scheme

Recommendations

Implementation Options and Applications

PPP Options	Work Sharing	
	Public	Private
Proposed Toll Road Option 0; Conventional Type 	<ul style="list-style-type: none"> ROWA Design Construction O & M 	<ul style="list-style-type: none"> Outsourcing of some portion of works O & M of whole section
Application: Low FIRR, High & Medium EIRR		
Option 2; Segment Dividing Type 	<ul style="list-style-type: none"> ROW of whole section Design Construction and financing of public segment 	<ul style="list-style-type: none"> Design Construction & financing of private segment under BOT scheme O & M of whole section
Application: Medium FIRR, High & Medium EIRR		
Option 3; BOT Type With Government Subsidy 	<ul style="list-style-type: none"> ROWA Upfront capital subsidy (Option 3-1) Annual service payment subsidy (Option 3-2) 	<ul style="list-style-type: none"> Design Construction & financing of whole section under BOT scheme O & M of whole section
Application: Medium FIRR, High & Medium EIRR		
Option 4; BOT Type 	<ul style="list-style-type: none"> ROWA 	<ul style="list-style-type: none"> Design and construction including financing under BOT scheme O & M of whole section
Application: High FIRR, High & Medium EIRR		

Note: Option 1 (Lease Type) is excluded

- **PLAN AUTHORIZATION:** Proposed Master Plan should be authorized by DPWH and NEDA and included in "LIST OF PRIORITY PROJECTS for PPP", MTPDP, CIIP, MTPIP, and MTRDP.
- **SUFFICIENT STUDY FOR PROJECT PREPARATION:** Business Case Study and Detailed Feasibility Study should be undertaken to formulate firm PPP scheme. More time and fund should be spent for project preparation stage.
- **GOVERNMENT BUDGET INCREASE AND ACTIVE PARTICIPATION OF PRIVATE SECTOR:** Huge investment to realize Master Plan is required. Government budget should be increased and active private sector participation should be sought.
- **STRONG DPWH'S INITIATIVE TO BE EXERCISED**
- **DPWH AS A SINGLE ENTRY POINT OF PPP PROJECT**
- **EXPEDITION OF ROW ACQUISITION:** Early start of ROW acquisition, adoption of market price and strengthening of PMO-IROWR are needed.
- **STRENGTHENING OF DPWH ORGANIZATION AND CAPACITY DEVELOPMENT**
- **UNSOLICITED PROPOSAL:** BOT Law (RA-7718) to be continuously and strictly followed.
- **UPDATING OF THE MASTER PLAN:** to be updated every 5 years.
- **METRO CEBU AND TAGUM – DAVAO – GEN. SANTOS CORRIDOR:** DPWH should prepare Master Plan based on proposed HSH Network Development Strategy.
- **HSH-2 ROAD DEVELOPMENT:** Proposed HSH-2 Projects should be planned and implemented in due consideration of HSH-1 Network Development.
- **DPWH'S ROAD CLASSIFICATION:** DPWH should add HSH-1 and 2 in its road classification.

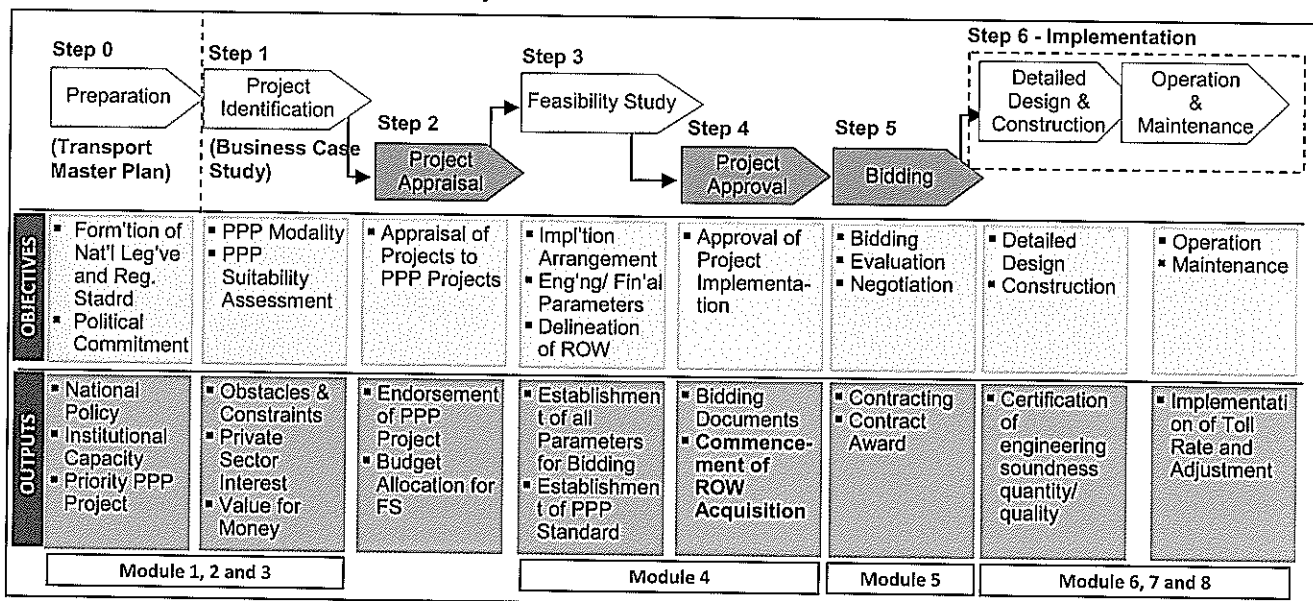
Critical Milestones in Project Implementation

- Milestone 1 – PPP Environment Development
- Milestone 2 – Appraisal of Project as PPP by related Agencies
- Milestone 3 – Approval of PPP Design by Approving Body
- Milestone 4 – Loan/ODA Arrangement for GRP Segment
- Milestone 5 – ROW Acquisition before commencement of Construction (Req. of Financial Closure)
- Milestone 6 – Notice to Commence Implementation

DPWH Organization and Capacity Strengthening Plan

- Module 1 – PPP Legal and Regulatory Framework
- Module 2 – Project Identification
- Module 3 – Project Business Case
- Module 4 – Project Feasibility Study
- Module 5 – Project Procurement
- Module 6 – Project Implementation
- Module 7 – Project Operation
- Module 8 – Project Monitoring and Post Evaluation of Impact

Roadmap for Realization of Toll Road Project thru PPP



CURRENT ISSUES AND DEVELOPMENT

Current Issues

Arterial Road Network

- Arterial road network which is composed of 6 circumferential and 10 radial roads was proposed in the late 1960's. All radial roads were already completed; however, development of circumferential roads is still incomplete.
- Road network development has been focused on (i) widening of a road within an available road ROW, and (ii) construction of grade separation of at-grade intersection.
- Due to ROW acquisition problems, new road construction was rarely implemented since the completion of C-5 from SLEx to Pasig River which was built about 15 years ago.

Expressway Network

- Three expressways, namely NLEx, SLEx with Skyway over it and the Manila-Cavite Toll Expressway, are presently functioning individually and expressways are not formed as a network yet.
- There are many proposals to construct expressways, however, there is no indication of their priority due to lack of a Master Plan.
- Due to difficulty of ROW acquisition and relocation of project affected persons (PAPs), most proposals need to be planned along the existing ROW of rail, road, river, etc. However, additional ROW is usually required at interchange location, on-off ramps and toll gates. As such, how to minimize additional ROW acquisition is one of the key factors for smooth implementation of expressway projects.

Traffic Condition

- Traffic congestion is one of most serious problems in Metro Manila.
- Traffic congestion is being experienced a whole day long from 6:00 AM to 10:00 PM.
- Travel speed of most arterial roads in Metro Manila is quite low at less than 20 km/hr. Travel speed of some arterial roads is less than 10 km/hr.
- Traffic congestion is creating various problems such as increase of travel time, failure of timely delivery of goods and people, losses of people's valuable time, aggravated roadside environment including air pollution, noise and vibration, etc.
- Traffic congestion is also affecting sound socio-economic activities. Industries are losing international competitiveness, resulting in loss of international / domestic investment.

Future Socio-Economic Framework

	Increase (2030/2009)	Avg. Growth Rate (%)
M. Manila & its 200 km sphere		
- Population Growth	1.5	1.8
- Economic Growth	3.6	6.0
- Employment Growth	1.7	2.4
Metro Cebu		
- Population Growth	1.4 to 1.8	1.6 to 2.8
- Economic Growth	3.2	5.7
- Employment Growth	1.7	2.5
Tagum – Davao – Gen. Santos		
- Population Growth	1.4 to 1.6	1.6 to 2.3
- Economic Growth	3.2 to 3.5	5.7 to 6.1
- Employment Growth	1.9	3.1

Development Objectives

HSH development objectives and strategies are established as follows;

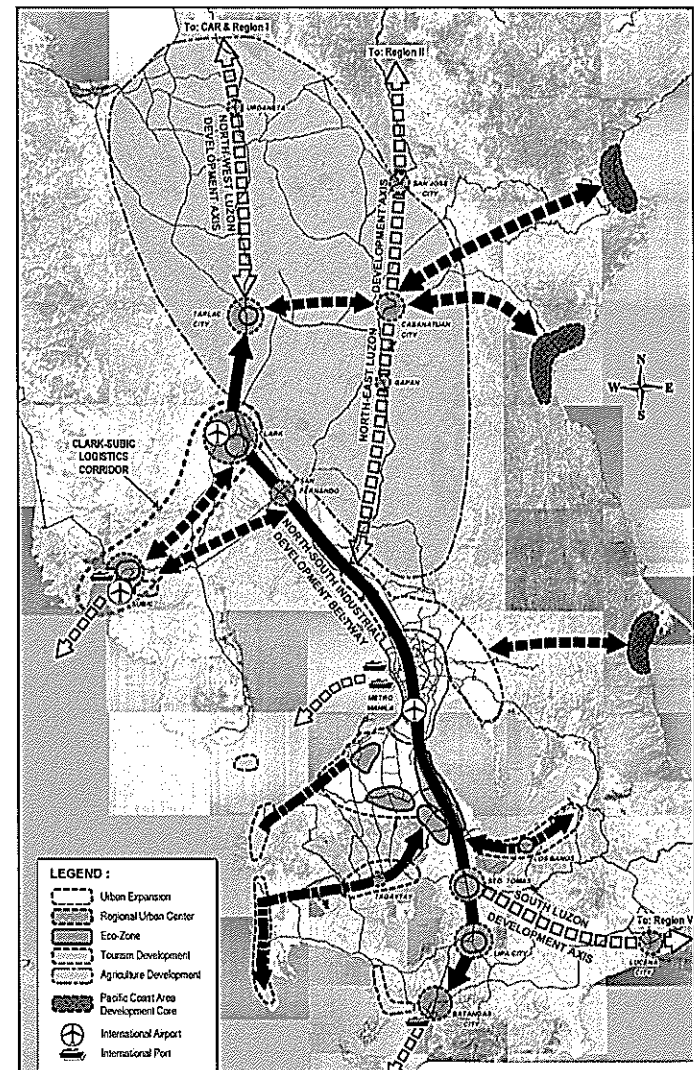
DEVELOPMENT OBJECTIVES

- To achieve national integration of socio-economic activities
- To decongest traffic on arterial roads
- To actively support development of international logistic bases.
- To promote sound urban expansion
- To improve accessibility to main tourist spots.

DEVELOPMENT STRATEGY

- To form a backbone transport axes.
- To decongest traffic in Metro Manila and its suburbs.
- To provide efficient transport facilities for logistic corridors.
- To provide transport facilities for sound urban expansion

Regional Development Concept



PROPOSED HSH NETWORK

Proposed High Standard Highway Network

Indication of "Do-Nothing Scenario"

Metro Manila

- Traffic condition of all Metro Manila roads will be further aggravated. Some drastic measures need to be implemented; however, ROW acquisition is a serious problem.
- Outskirts of Metro Manila are rapidly developing in disorderly manner. Road network to guide orderly urban development is needed.
- An expressway, which functions as a traffic distributor of expressways, from the North and the South is needed.

North of Metro Manila

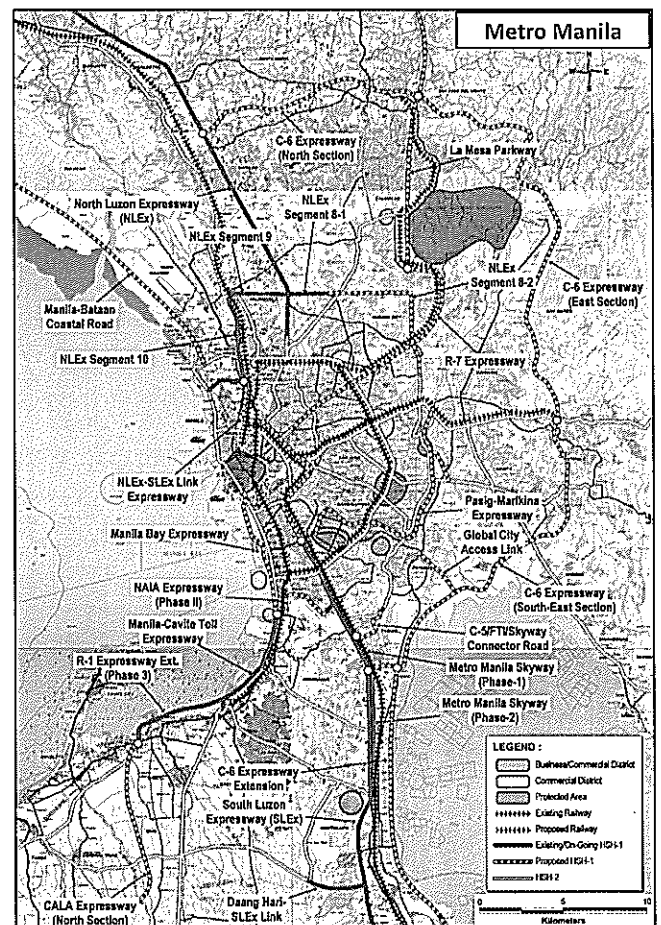
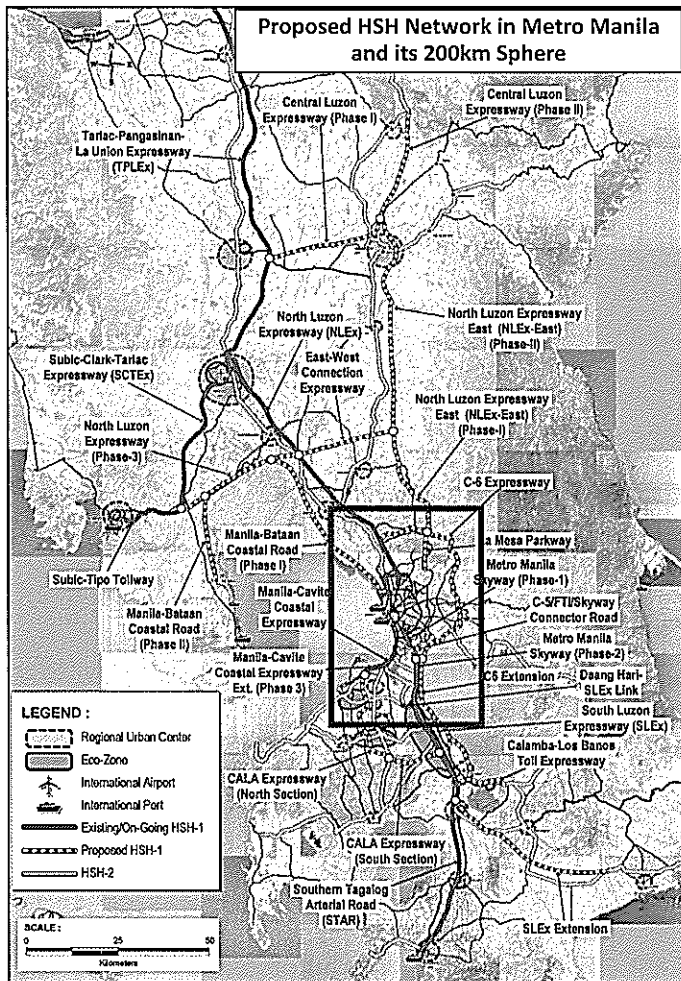
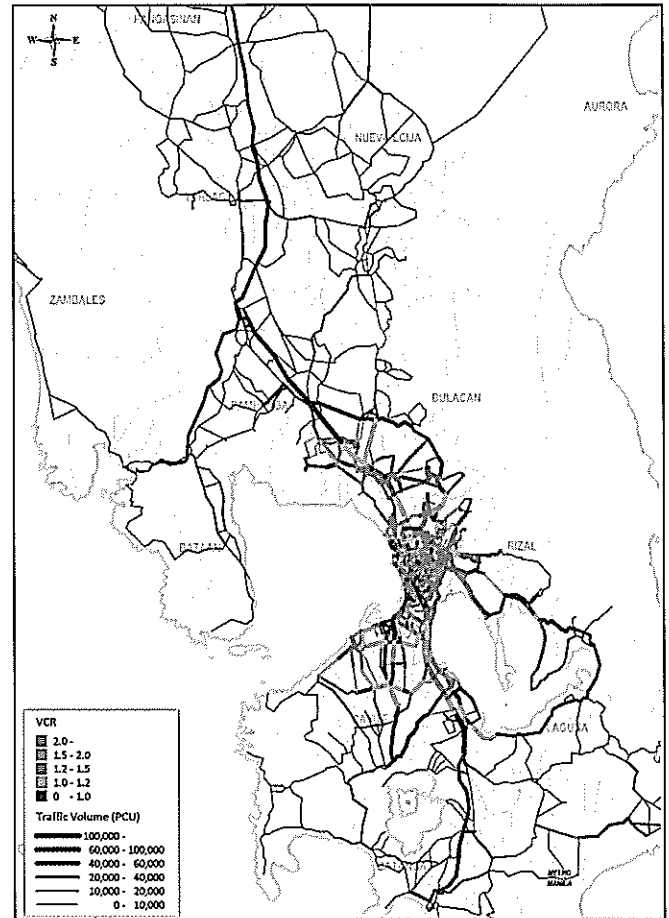
- NLEx will soon be congested. Another expressway is needed. North of Manila is served by NLEx (8 lanes) and South of Manila is served by SLEx, Skyway, and Manila-Cavite (20 lanes in total)
- Pan-Philippine Highway (Daang Maharlika) will be further congested. Alternative highway is needed.
- Connector expressway(s) to link expressways in the direction of E-W will be needed to improve flexibility of expressway network.

South of Metro Manila

- Roads in Cavite and Laguna Provinces will be seriously congested like Metro Manila.
- Existing expressways, SLEx, Skyway, Manila-Cavite Coastal Expressway will also be congested. More expressways and a distributor of traffic on these expressways will be needed in the near future.

Do-Nothing Scenario (2030)

2009 Network; 2030 OD



HSH PROJECTS AND HSH D

Priority of HSH Projects

With Project Case (2030)

Prioritization Criteria and Projects

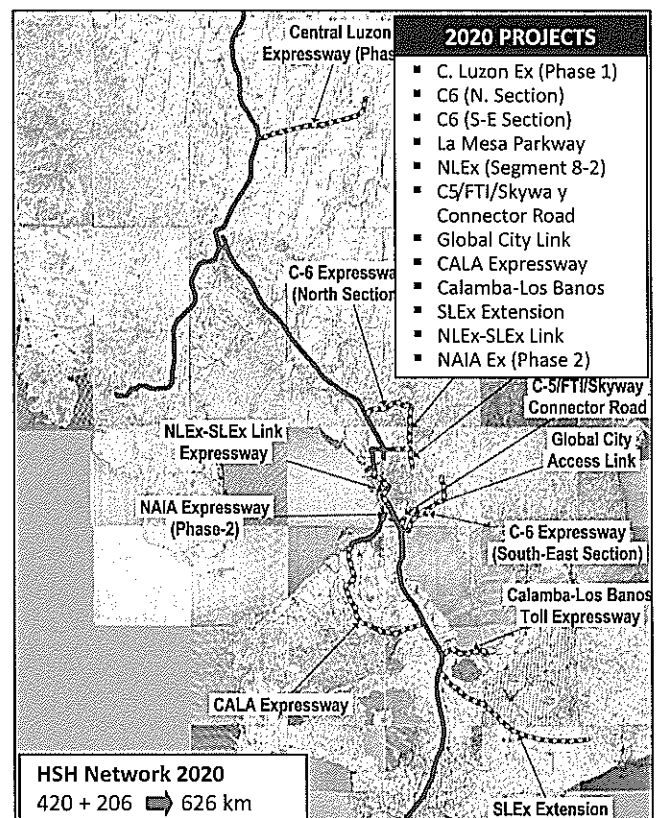
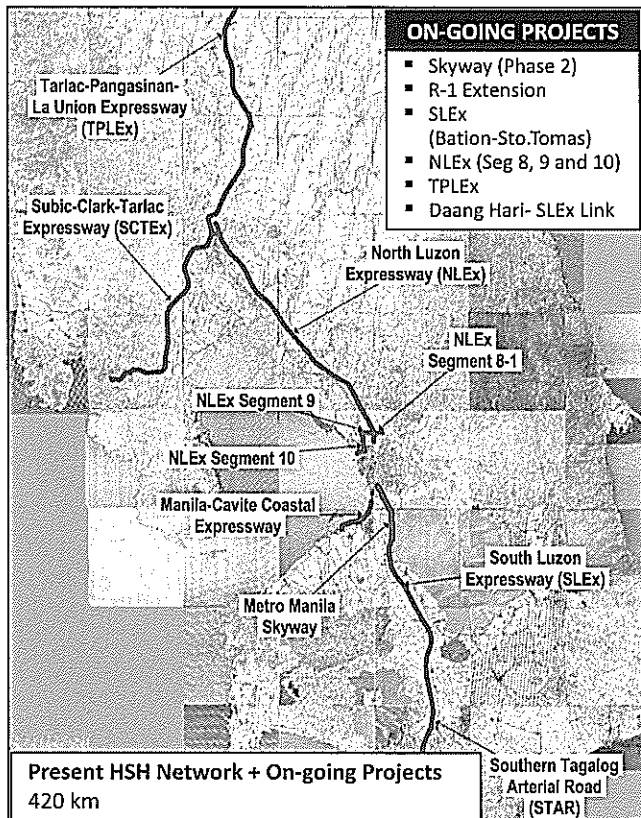
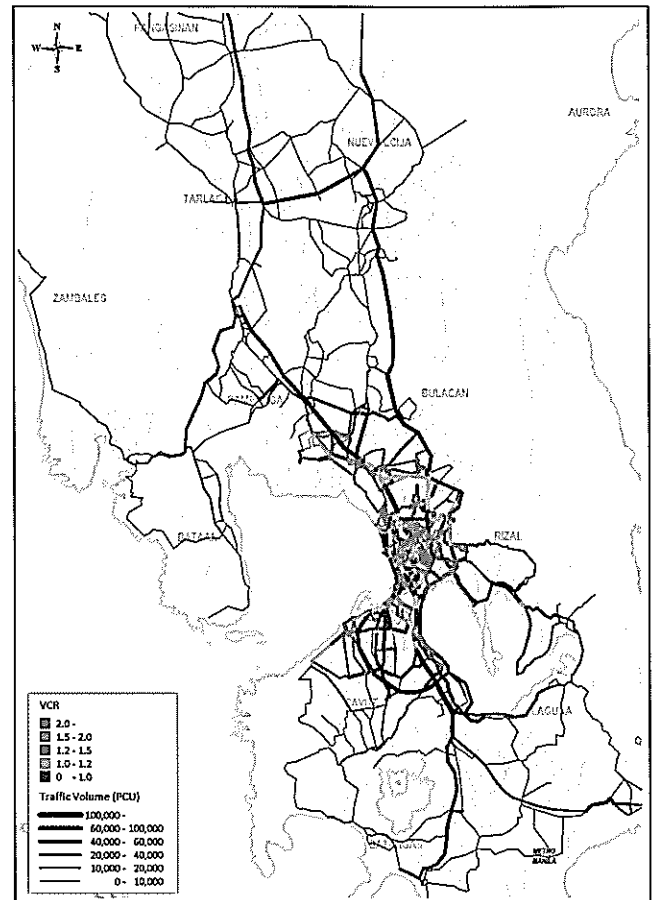
Item

1. Functional Importance of a link in HSH Network
2. Urgency based on contribution to traffic decongestion
3. Project Maturity
4. Contribution to National/Regional Socio-Economic Development
5. Easiness to prepare Initial Investment Fund
6. Environmental Impact
7. Impact of a project on viability of Existing Toll Expressway
8. Economic and Financial Viability

Priority HSH Projects

	Name of HSH	Length (km)	Cost (billion pesos)
1 st Priority Group	NLEx-SLEx Link Expressway	13.4	31.14
	CALA Expressway	41.8	19.67
	C-5/FTI/SKYWAY Connector Rd.	3.0	4.76
	NAIA Expressway (Phase 2)	4.9	12.18
	C-6 Expressway/Global City Link	66.5	54.29
	Central Luzon Expressway	63.9	29.23
	SLEx Extension (to Lucena)	47.8	16.45
	Calamba-Los Banos Expressway	15.5	5.23
	Sub-total	256.8	172.95
2 nd Priority Group	R-7 Expressway	16.1	25.81
	NLEX East / La Mesa Parkway	103.0	38.94
	Manila – Bataan Coastal Road	70.3	72.94
	NLEX (Phase 3)	36.2	28.42
	East-West Con. Expressway	26.6	16.48
	C-6 Extension	43.6	18.61
	Manila Bay Expressway	8.0	46.54
	Pasig Marikina Expressway	15.7	49.58
	Sub-total	319.5	297.32
	TOTAL	576.3	470.27

2030 Network; 2030 OD



EXPRESSWAY 1,000 KM. PLAN (Expre

HSH NETWORK FOR METRO CEBU AND TAGUM-DAVAO-GEN. SANTOS

Development Strategy for Metro Cebu

DEVELOPMENT OBJECTIVES

- To decongest traffic along arterial roads
- To achieve integration of socio-economic activities of Metro Cebu
- To enhance tourism industry
- To recover international competitiveness of industries
- To promote sound urban expansion

HSH Projects

	Project Name	Implementation Target	
		By 2020	By 2030
Highly Urbanized	1. Ext. of Cebu Coastal Road up to Liloan	Construction of 4-lane road	
	2. Cons. of Cebu Hillside Road and its Connector Roads	Construction of 2-lane road	Widening to a 4-lane road
	3. Flyover construction along North Rd., South Rd. and Coastal Road	Construction of 4 flyovers	Construction of 5 flyovers
Northern Area	4. Widening of Cebu North Road	Widening to 4-lane road (Mandaue / Liloan boundary to Danao City)	
	5. Construction of Cebu North Parallel Road		Construction of a 2-lane road
Southern Area	6. Widening of Cebu South Road from Naga to Carcar	Widening to a 4-lane road	
	7. Construction of Cebu South Parallel Road	Construction of a 2-lane road	Widening to a 4-lane road
Mactan Island	8. Improvement of Mactan Circumferential Road	Improvement of existing road	
	9. Widening of First Mandaue-Mactan Bridge and its Approach Roads		Widening to 4-lane bridge incl. approach roads
	10. Construction of 3 rd Bridge and its Approach Road		Cons. of 4-lane bridge and its Approach Road

Development Strategy for Tagum-Davao-Gen.Santos Corridor

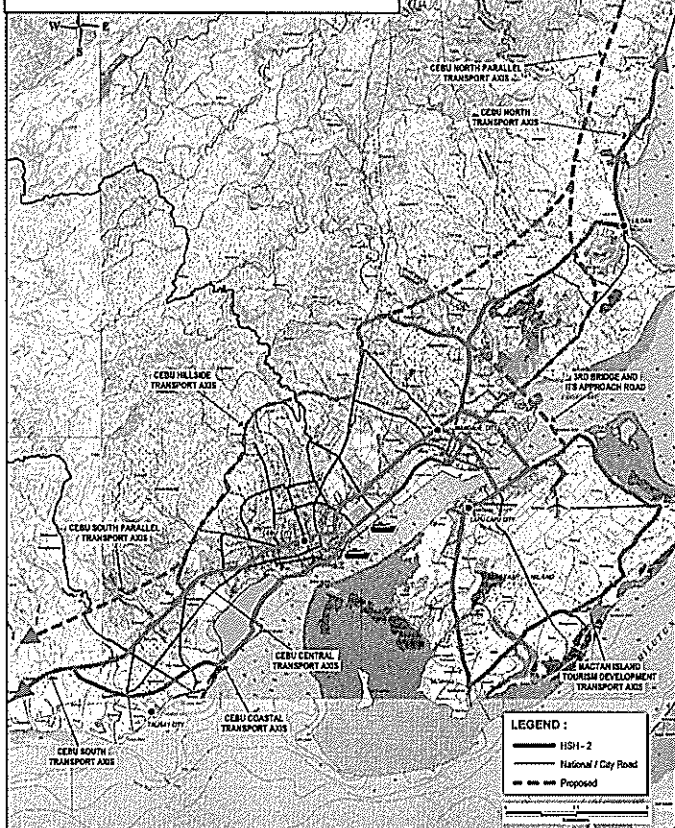
DEVELOPMENT OBJECTIVES

- To decongest traffic along arterial roads
- To achieve strong linkage between Davao City and other major urban centers in Mindanao
- To enhance agro-fishery industry
- To recover international competitiveness of industries
- To promote sound urban expansion of Davao and Gen. Santos City

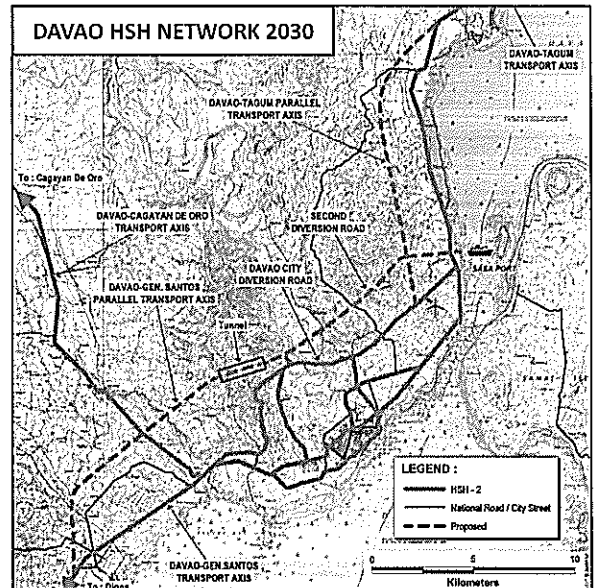
HSH Projects

	Project Name	Implementation Target	
		By 2020	By 2030
Inter-City HSH	1. Widening to 4-lane divided Rd for Davao-Tagum Rd	Convert to a 4-lane divided Rd	
	2. Prov. frontage Rds for urban sections of Panabo and Tagum		Frontage Rds to separate mix traffic
	3. Cons. of Davao-Tagum Parallel Rd including Sasa Port access Rd	Cons. of 2-lane Rd	Widening to a 4-lane Rd
	4. Widening of Davao City Diversion Rd from Sasa to Davao River Brg	Widening to 6-lane Rd	
	5. Construction of Davao-Gen. Santos Parallel Rd	Cons. of a 2-lane Rd	Widening to a 4-lane Rd
	6. Widening of Davao and Digos section	Widening to 4-lane Rd	
	7. Widening of Digos and General Santos section		Widening to a 4-lane Rd
Intra-City HSH	8. Flyover construction for HSH within Davao City	4 Flyovers	3 Flyovers
	9. Cons. of Second Diversion Rd		Cons. of a 4-lane Rd
	10. Cons. of Gen. Santos City Circumferential Rd	Cons. of 2-lane Rd	Widening to a 4-lane Rd

METRO CEBU HSH NETWORK 2030



DAVAO HSH NETWORK 2030



GEN. SANTOS HSH NETWORK 2030

