

JPS Strategic Plan 2007-2010

(Rev. Feb. 2009)

“Water Resources and Environmental Stewardship
through Effective Stakeholder Engagement”



DEPARTMENT OF IRRIGATION AND DRAINAGE MALAYSIA



Goal: To manage the usage and allocation of water resources safely, fairly, equitably and in a sustainable manner consistent with Integrated Water Resources Management (IWRM) principles

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
		<ul style="list-style-type: none"> Enhanced hydrological procedures to be used as reference by other stakeholders. Sustainable water resources management. 	<ul style="list-style-type: none"> Establishment of Water Quality Indices for Rivers in Peninsular Malaysia National Study for the Effective Implementation of Integrated Water Resources Management in Malaysia 	Q4 2008
<p>1.2 Maintain a dynamic rapport with key stakeholders through effective management</p> <ul style="list-style-type: none"> Promote political awareness of the water sectors Mobile mass media/NGO's over water awareness Develop multi-stakes discussion and dialogue on relevant solutions. To monitor the implementation of agreed solutions and amend the policies based on feedbacks 	1.2.1 Ensure water sectors networking (national, regional and international)	Enhanced implementation of Capacity Building programmes	<p>MyCapNet, MyWP (GWP SEA), M. Env Sc (IWRM, OUM), Network of River Basin Organisation (NARBO), AWGWRM</p> <ul style="list-style-type: none"> Establishment of ASEAN Water Quality Database System Workshop on IWRM for ASEAN countries Effective Implementation of Integrated Water Resources Management in Malaysia 	Q1 2008

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	1.2.2 Reinforce the water sector database and make easy dissemination	<ul style="list-style-type: none"> • Reliable parameters on water quality identified and standardized • Reliable groundwater data and analysis • Online information dissemination 	<ul style="list-style-type: none"> • Integrated Water Resources Study for the Northern Region of Peninsular Malaysia (July 08 – July 09) • Study of the Impact of Land Development Activities on Water Resources of Sg. Kelantan and the Development of the Conservation Plan (Okt 08 – Apr 2010) • Preliminary Study on the National Groundwater Potential in Peninsular Malaysia (Okt 08 – Mac 09) • Web base information 	Q4 2009

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	1.2.3 Encourage dialogue among stakeholders at different level and locations and publish the outcome of the consultation	<ul style="list-style-type: none"> • More focus on agencies roles • Enhance awareness among stakeholders 	<ul style="list-style-type: none"> • Report on Stakeholder Engagement Plan with 5 focus areas • Study on Effective Implementation of IWRM in Malaysia 	Q4 2007
	1.2.4 Promote wise water use of all users	Equitable and fair distribution of water availability	<ul style="list-style-type: none"> • Study on Effective Implementation of IWRM in Malaysia 	Q1 2008
1.3 Adapt sound water resources management practices to ensure adequate, safe and affordable water services: <ul style="list-style-type: none"> • Provide safe water to All ii) • Adopt water demand management • Improve waste water management • Improve governance • Go for capacity building • Promote public-private partnership 	1.3.1 Review and update guideline regularly	Enhanced service delivery system	<ul style="list-style-type: none"> • DID Manual • MSMA – River Engineering • Coastal Guideline – Coastal Engineering • Pelan Induk Tebatan Banjir-BTB 	Q1 2009

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	1.3.2 Introduce water related extra-curricula into the education system	<ul style="list-style-type: none"> Awareness and capacity building Reference manuals 	<ul style="list-style-type: none"> Hydrological and river Expedition World Water Monitoring Programme 2008 (18 September – 18 October 2008) 	Q4 2008
	1.3.3 Promote greater cooperation among stake holders	Effective enforcement and compliance	<ul style="list-style-type: none"> Water Resources Enactment 2007 LUAS Enactment 1 State -1 River programme Ops Lumpur & Ops Pasir 	Q4 2010

FOCUS AREA #2 : CLEAN, LIVING AND VIBRANT RIVERS

Goal: To develop and implement IRBM Plan for every river basin for a holistic and sustainable development

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
2.1 To intensify river conservation program	2.1.1 Identify, plan, design and carry out river conservancy works such as <ul style="list-style-type: none"> • River desilting • River corridor landscaping • River bank protection works 	<ul style="list-style-type: none"> • Improvement in river flow and carrying capacity • Enhancement of river regime. • Bring nature back to rivers in terms of 'clean, living and vibrant rivers' • Improvement in river erosion control • Compilation of best practices in river management 	<ul style="list-style-type: none"> • River rehabilitation <ul style="list-style-type: none"> - 14 River rehabilitation projects proposed 1. Sg. Perlis 2. Sg. Petani 3. Sg. Pinang 4. Sg. Kinta 5. Sg. Penchala (Selangor) 6. Sg. Penchala (Kuala Lumpur) 7. Sg. Temiang 8. Sg. Melaka 9. Sg. Skudai 10. Sg. Galing 11. Sg. Hiliran 12. Sg. Pengkalan Chepa 13. Sg. Miri 14. Sg. Papar 	Q4 2009

Goal: To develop and implement IRBM Plan for every river basin for a holistic and sustainable development

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
2.2 To promote the use of non-structural measures in river management	2.2.1 To prepare blueprint for IRBM (the blueprint will be based on two pilot projects, i.e. Sungai Selangor and Sungai Kedah)	Completion of the IRBM blueprint. The framework to be used for river basin management and enhancement.	Preparation of Sungai Kedah Basin Management Plan	Q2 2010
		Standard IRBM Plan	Study to prepare template for standard IRBM plan preparation.	Q2 2010
	2.2.2 Carry out Master Plan IRBM studies for river basin based on priority area	<ul style="list-style-type: none"> • 10 main river basin plan • Comprehensive program for an implementation of IRBM 	River basin studies	Q2 2010
	2.2.3 Prepare and implement specific IRBM Plan	More effective water resources management	Implementation of Sg. Kedah Basin Plan	Q3 2010
	2.2.4 Promote IRBM and IWRM Concept	<ul style="list-style-type: none"> • Well managed river basin. • Set up of 4 RBO's 	Sg. Kedah	Q2 2008
	2.2.5 Prepare RBIS –River Basin Information System	Improvement in dissemination and sharing of information's	<ul style="list-style-type: none"> • Phase II • Phase III 	Q4 2009

Goal: To develop and implement IRBM Plan for every river basin for a holistic and sustainable development

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
		Completed for Phase II, 4 rivers	<ol style="list-style-type: none"> 1. Sg. Kuantan 2. Sg. Muar 3. Sg. Sarawak 4. Sg. Moyog/ Putatan 	Q4 2009
		Completed for Phase III, 10 rivers	<ol style="list-style-type: none"> 1. Sg. Perak 2. Sg. Selangor 3. Sg. Langat 4. Sg. Kedah 5. Sg. Linggi 6. Sg. Muda 7. Sg. Bernam 8. Sg. Perlis 9. Sg. Melaka 10. Sg. Terengganu 	Q2 2009
	2.2.6 Create DSS – Decision Support System	Improvement in dissemination and sharing of information	<ul style="list-style-type: none"> • Phase II • Phase III 	Q2 2007
		Completed for Phase II, 4 rivers	<ol style="list-style-type: none"> 1. Sg. Kuantan 2. Sg. Muar 3. Sg. Sarawak 4. Sg. Moyog/ Putatan 	Q4 2009

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Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
		Completed for Phase III, 10 rivers	<ol style="list-style-type: none"> 1. Sg. Perak 2. Sg. Selangor 3. Sg. Langat 4. Sg. Kedah 5. Sg. Linggi 6. Sg. Muda 7. Sg. Bernam 8. Sg. Perlis 9. Sg. Melaka 10. Sg. Terengganu 	Q2 2009
	2.2.7 Review and develop guidelines, procedures for river management and development of river activities	Standardise guidelines and procedures to be used by all implementing agencies	Prepare Guidelines <ul style="list-style-type: none"> • River Front Development 	Q4 2009
		DID Manual, Volume 2 (River Management)	Review of Manual	Q4 2008
	2.2.8 Carry out effective monitoring and enforcement on river usage	Improved best management practice on river basin.	BMP to develop effluent treatment methods for markets, restaurants and sewage treatment plants	Q4 2009

Goal: To develop and implement IRBM Plan for every river basin for a holistic and sustainable development

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
	2.2.9 Establish database for river total loading capacity	Effective river pollution monitoring and control	Establish database for 4 rivers Cyber City, Pulau Pinang	Q2 2010
2.3. To promote interagency collaboration in effective river protection and enhancement program	2.3.1 Implement specific river cleaning program	<ul style="list-style-type: none"> • Better coordination between agencies for river enhancement. • Effective and sustainable awareness efforts 	Rehabilitation of: <ul style="list-style-type: none"> • Sg. Melaka • Sg. Pinang 	Q4 2008
	2.3.2 Expand collaboration with the Department of Environment in the control of river water pollution	<ul style="list-style-type: none"> • Improved river water quality • Comprehensive assessment of river water quality • Increase compliance to environment guidelines and procedures 	One State One River (DOE member of State Steering Committee)	Q2 2010
2.4. To promote private sector involvement in river development and management	2.4.1 Promote 'River Front' development concept in property development	Value added river environment	Formalized the guideline on river front development	Q4 2009

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Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
	2.4.2 Promote private sector's involvement in monitoring and safe guarding of rivers	<ul style="list-style-type: none"> • Better coordination between public and private sector • Improved mutual understanding between government and private sector 		Q4 2010 & continuous
	2.4.3 Promote 'River Adoption' and 'River Beautification' Schemes for participation/ implementation by private sector	<ul style="list-style-type: none"> • Program reviewed • Program outcome and impact measures in place 		Q2 2008 & continuous
2.5 To build up staff performance measurement and career path	2.5.1 Review, upgrade, formulate and implement training program for departmental staffs	Competent and knowledgeable human resources	<ul style="list-style-type: none"> • Training of 10 people in hydrodynamic modeling • Training of 10 state staff in GIS software. 	Q4 2009
	2.5.2 Procure adequate facilities such as computers, software packages and other supporting facilities	Improve staff performance and skill	Upgrade technical software's (Infoworks)	Q3 2009

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Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
2.6 Increase river advocacy through effective stakeholder engagement	2.6.1 Implement stakeholder engagement plan and strategies	Stakeholder engagement rolled out	Stakeholder engagement workshop	Q3 2009
	2.6.2 Educate children, citizens and community leaders on the value of, and need, for river conservation	Increased public awareness and participation	<ul style="list-style-type: none"> • Awareness Program carried out together with Members of Parliament and state assemblyman • Program River-Ranger 	Q4 2010

FOCUS AREA #3: SUSTAINABLE STORMWATER MANAGEMENT

Goal: To manage and regulate the implementation of SWM programs so as to minimise adverse impact on receiving water bodies				
Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
3.1 Inculcate culture for world class facilities and practices	3.1.1 BMPs initiative with facilities provided by MSMA for new development areas <ul style="list-style-type: none"> • Implement pilot projects 	<ul style="list-style-type: none"> • Showcase for developers to implement MSMA 	<ul style="list-style-type: none"> • SELANGOR • 4 projects • NEGERI SEMBILAN • 10 projects • TERENGGANU • 3 projects • PULAU PINANG • 1 project • MELAKA • 5 projects • KELANTAN • 19 projects 	Q4 2009
	<ul style="list-style-type: none"> • Impose MSMA requirements during Structural and Local Plan Studies 	<ul style="list-style-type: none"> • Land reserve and gazette for MSMA facilities are specified at planning stage 	<ul style="list-style-type: none"> • JPBD and PBT agreed to include MSMA requirement in Structural and Local Plan Studies 	Q4 2009

Goal: To manage and regulate the implementation of SWM programs so as to minimise adverse impact on receiving water bodies

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
	<p>3.1.2 Improve BMPs facilities for existing developed areas</p> <ul style="list-style-type: none"> • Introduce control at source facilities Implement pilot projects 	<ul style="list-style-type: none"> • Reduce flash flood and water quality deterioration • Environmentally friendly facilities with value added properties to the community 	<p>KEDAH</p> <ul style="list-style-type: none"> • 2 projects <p>WILAYAH PERSEKUTUAN, KL</p> <ul style="list-style-type: none"> • 1 project <p>SELANGOR</p> <ul style="list-style-type: none"> • 1 project <p>NEGERI SEMBILAN</p> <ul style="list-style-type: none"> • 1 project <p>PERAK</p> <ul style="list-style-type: none"> • 1 project <p>PAHANG</p> <ul style="list-style-type: none"> • 14 projects <p>SARAWAK</p> <ul style="list-style-type: none"> • 1 project <p>KELANTAN</p> <ul style="list-style-type: none"> • 2 projects 	<p>Q2 2010</p>

Goal: To manage and regulate the implementation of SWM programs so as to minimise adverse impact on receiving water bodies

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
	<p>3.1.3 Point & non-point source reduction program</p> <ul style="list-style-type: none"> • Install gross pollutant traps for all detention ponds and drainage outfall 	<ul style="list-style-type: none"> • Reduction of rubbish and sediment from developed areas into receiving waters 	<p>PULAU PINANG</p> <ul style="list-style-type: none"> • 2 project Biomedia • Install 2 nos CDS • Install 94 nos Log boom <p>KEDAH</p> <ul style="list-style-type: none"> • Install 2 nos GPT & 6 nos FOG <p>TERENGGANU</p> <ul style="list-style-type: none"> • Install 1 nos FRT & 2 nos FRP • Install 1 nos GPT. <p>PERLIS</p> <ul style="list-style-type: none"> • Install 3 nos of MFRT <p>KELANTAN</p> <ul style="list-style-type: none"> • Install 3 nos GPT • Install 15 nos simpak <p>JOHOR</p> <ul style="list-style-type: none"> • Install GPT and BMP <p>NEGERI SEMBILAN</p> <ul style="list-style-type: none"> • Install 7 nos GPT <p>PAHANG</p> <ul style="list-style-type: none"> • Install 2 nos GPT 	<p>Q4 2009</p>

Goal: To manage and regulate the implementation of SWM programs so as to minimise adverse impact on receiving water bodies

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
	<ul style="list-style-type: none"> Utilise bio-engineering for water purification measures 	<ul style="list-style-type: none"> Reduction in organic pollution (From Class III to Class IIB) 	<p>PERAK</p> <ul style="list-style-type: none"> Install 2 nos GPT Install 3 nos EM Install 23 nos AFRT <ul style="list-style-type: none"> Targeting pilot project in Penang 	Q4 2009
	<p>3.1.4 Conservation and sustainable utilisation of SW & related resources</p> <ul style="list-style-type: none"> Promote rainwater harvesting system for Government Offices, public, private and residential buildings 	Reduction in water supply demand for public buildings and major towns	<p>KELANTAN</p> <ul style="list-style-type: none"> 4 projects <p>TERENGGANU</p> <ul style="list-style-type: none"> 3 projects <p>KEDAH</p> <ul style="list-style-type: none"> 3 projects <p>PULAU PINANG</p> <ul style="list-style-type: none"> 1 project <p>SARAWAK</p> <ul style="list-style-type: none"> 1 project <p>PERAK</p> <ul style="list-style-type: none"> 1 project 	Q4 2009

Goal: To manage and regulate the implementation of SWM programs so as to minimise adverse impact on receiving water bodies

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
	<ul style="list-style-type: none"> • Install water extraction (pilot project) facilities from detention ponds for non-potable usage 		<p>SELANGOR</p> <ul style="list-style-type: none"> • 1 project <p>PERLIS</p> <ul style="list-style-type: none"> • 1 project <p>PAHANG</p> <ul style="list-style-type: none"> • 4 projects <ul style="list-style-type: none"> • Pilot project I-DICODE 	
	<p>3.1.5 Improve development plan submission and monitoring</p> <ul style="list-style-type: none"> • Improve submission checklist for Land Subdivision, Drainage Layout Plan and Erosion & Sediment Control Plan • Prepare checklist for site monitoring purpose 	<ul style="list-style-type: none"> • Improve delivery system for JPS during development application process • Compliance to MSMA 	<ul style="list-style-type: none"> • Prepare MSMA checklist • Prepare checklist for Inspection and Maintenance Erosion and Sdiment Control 	<p>Q2 2009</p> <p>Q4 2009</p>

Goal: To manage and regulate the implementation of SWM programs so as to minimise adverse impact on receiving water bodies

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
	<p>3.1.6 Strengthen legal, regulations and enforcement while improving coordination with other Agencies</p> <ul style="list-style-type: none"> • Insert MSMA requirements in Local Authority Development Plan Requirement 	<ul style="list-style-type: none"> • MSMA requirements made mandatory • Compliance to MSMA e.g. OSC 	<p>Prepare proposal OPS Lumpur in national level.</p>	<p>Q1 2008</p> <p>Q4 2009</p>
	<p>3.1.7 Prepare SWM Master Plan for towns including implementation</p>	<p>Detailed plans for 20 major towns ready to be utilised</p>	<p>PERLIS Kangar, Arau and Padang Besar</p> <p>PERAK</p> <ul style="list-style-type: none"> • Parit Buntar dan Bagan Serai <p>SELANGOR</p> <ul style="list-style-type: none"> • Klang • Seri Kembangan • Bandar Sungai Buluh <p>TERENGGANU</p> <ul style="list-style-type: none"> • Dungun • Chukai, Kemaman <p>PAHANG</p> <ul style="list-style-type: none"> • Kuantan • Kuala Rompin 	<p>Q4 2010</p>

Goal: To manage and regulate the implementation of SWM programs so as to minimise adverse impact on receiving water bodies

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
			<p>SABAH</p> <ul style="list-style-type: none"> • Tuaran, Mengatal dan Talipok • Tawau <p>SARAWAK</p> <ul style="list-style-type: none"> • Kuching dan Kota Samarahan <p>PULAU PINANG</p> <ul style="list-style-type: none"> • Seberang Jaya • Butterworth • Tasek Gelugor <p>KELANTAN</p> <ul style="list-style-type: none"> • Tanah Merah • Pasir Mas • Ketereh <p>JOHOR</p> <ul style="list-style-type: none"> • Johor Bahru*. • Muar*. • Batu Pahat*. • Pontian*. • Kluang*. • Segamat*. • Kota Tinggi*. • Mersing*. • Senai*. • Simpang Remggam*. • Tangkak*. • Labis*. • Pekan Nenas*. 	

Goal: To manage and regulate the implementation of SWM programs so as to minimise adverse impact on receiving water bodies

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
			<ul style="list-style-type: none"> • Parit Raja*. • Parit Sulong*. • Yong Peng*. <p>NEGERI SEMBILAN Majlis Perbandaran Seremban</p>	
3.2 Create effective stakeholders engagement	3.2.1 Public education and outreach programs <ul style="list-style-type: none"> • Develop a framework for stakeholder participation (school, community association and etc)(refer Stakeholders Engagement Plan) 	<ul style="list-style-type: none"> • Bottom up planning and implementation • Establish sense of belongings for MSMA facilities in the community 	Joint implementation between DID Selangor and BSB – to be implemented in Taman Botani, Kelang	Q2 2009
	3.2.2 Voluntary enforcement squad <ul style="list-style-type: none"> • Establish community watch program in the form of BMP for SWM involving stakeholders 	<ul style="list-style-type: none"> • Stakeholder’s engagement for one project • Reduce O&M expenditure 	Will be establishing in Taman Botani, Kelang.	Q4 2010

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Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
	3.2.3 Recognition and incentive <ul style="list-style-type: none"> MSMA recognition for stakeholders To propose tax reduction to private sectors that fully support MSMA 	<ul style="list-style-type: none"> Attract more stakeholders involvement in MSMA projects Public/private smart partnership 	<ul style="list-style-type: none"> MSMA Award Prepare draft proposal 	<p>Q4 2010</p> <p>Q4 2010</p>
3.3 Source for additional Funding from government and developers	3.3.1 Establish policy on Federal grant and funds	Improve operation and maintenance	Prepare draft proposal for maintenance grant	Q4 2010
	3.3.2 Impose SW contributions for new developed areas	Additional fund in providing MSMA facilities	Submit proposal to state government for approval	Q4 2010
3.4 Consolidate and focus capacity building efforts	3.4.1 Education and professional development <ul style="list-style-type: none"> Give training and awareness to all stakeholders 	<ul style="list-style-type: none"> No staff shortage Abundance in local expertise with latest knowledge & technology ready to be utilised around the globe 	Seminar, dialogue, hands on course, expert talk, workshop and forum	Q4 2008
	3.4.2 Special program for design checking (inspection) for DID and design Engineers <ul style="list-style-type: none"> Conduct continuous workshops, seminar and courses 		Series of programs throughout Malaysia	Q2 2009

Goal: To manage and regulate the implementation of SWM programs so as to minimise adverse impact on receiving water bodies

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
	3.4.3 Research and local SW knowledge development <ul style="list-style-type: none"> • Give grants to local researchers and institution to conduct SWM R&D • Update design tables and procedure 		<ul style="list-style-type: none"> • Bio-ecological drainage system • Resam erosion control • USLE Parameters • MSMA second edition 	Q2 2010 Q3 2010
	3.4.4 Establish Virtual Resource Center and Accreditation Center (Center of Excellence)		Land development system has been developed for JPS Negeri Sembilan. To expand the usage of the system for all JPS States	Q4 2010
	3.4.5 Include NGO initiatives to support MSMA agenda		Conference and lectures	Q4 2010
	3.4.6 Establish linkages and collaboration with international bodies		<ul style="list-style-type: none"> • Establish CPECS Malaysia • Collaboration with CPECS USA 	Q4 2010

Goal: To ensure the protection of life and property from the risk of flood and coastal hazards through an integrated approach

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
			<ul style="list-style-type: none"> • Modular sea-wall: Labuan Blocks implemented at over 15 sites • Geotextile breakwaters for mangrove coasts 	
	4.1.3 Form smart partnerships with IHL and other technical agencies	<ul style="list-style-type: none"> • Sign MOU with local and international bodies.(1 per year) • Closer working relationship with local and international bodies 	<ul style="list-style-type: none"> • JPS-NAHRIM-FRIM joint study on mangrove replanting behind geotextile breakwaters being investigated at Sg Hj Dorani • JPS-Perbadanan Taman Negeri Johor (RAMSAR site) helps in preserving Tg. Piai mangrove shoreline 	Q1 2010
		<ul style="list-style-type: none"> • More focused contract research projects • Established data sharing policy and mechanism 	<ul style="list-style-type: none"> • JPS-Universities / ICHARM – integrated & Multidisciplinary research on flood hazard assessment in Johor (study on flood Risk assessment & management) 	Q2 2010
	4.1.4 Implementation of ISO 9001:2008	Achieve certification of work process in : <ul style="list-style-type: none"> • design of coastal protection • planning and design of flood 	<ul style="list-style-type: none"> • Certification one of the process – base KPI • ISO Process for “Approval of studies / report 	Q3 2009

Goal: To ensure the protection of life and property from the risk of flood and coastal hazards through an integrated approach

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
		mitigation projects <ul style="list-style-type: none"> • evaluation of project proposal • improvement of delivery system 		
	4.1.5 Documentation of local practices and guidelines (to include detailed design documents)	Completion of DID Manual.	DID Manuals on Coastal Management and Flood Mitigation	Q1 2009
	4.1.6 Review design of structures using physical model testing for critical projects	Improve infrastructure efficiency	<ul style="list-style-type: none"> • Physical modeling used in all breakwater construction projects including Sungai Terengganu, Kuala Kemaman and Kuala Pahang project • Conduct a test using physical model to see the efficiency of mathematical model 	Q4 2010 Q4 2010

Goal: To ensure the protection of life and property from the risk of flood and coastal hazards through an integrated approach

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
4.2 Expand usage of eco-friendly and non-structural methods	4.2.1 Capture social and environmental considerations in planning and design	Produce more holistic planning and design with added-value to local inhabitants <ul style="list-style-type: none"> • Prevent environmental damage • Preserve natural resources 	<ul style="list-style-type: none"> • Coastal erosion control in Tg. Piai • Labuan block • Usage of sandfill mattress • Relocation of resident • Include Environmental Impact assessment Study in Flood Mitigation master Plan project • Include River Conservancy and river corridor management Plan in flood Mitigation Master Plan study 	Q4 2008 Q4 2009
	4.2.2 Monitor Project performance to measure success	Accurate, complete and timely	<ul style="list-style-type: none"> • Monitoring is done through the system provided (BTB-L1) • Monthly monitored – physical and financial progress 	Q4 2010
	4.2.3 Integrate non-structural measures such as land-use planning, flood proofing etc. with structural measures	Holistic approach	ISMP is non-structural (preventive) strategy for erosion control (5 ISMP until 2010) <ul style="list-style-type: none"> • ISMP Pahang. • ISMP P.Pinang • ISMP Negeri Sembilan • ISMP Melaka. • ISMP Miri 	Q4 2010

Goal: To ensure the protection of life and property from the risk of flood and coastal hazards through an integrated approach

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
	4.3.2 Add-value (socio-economic) to engineering projects	Increased economic activity	As part of ToR, ISMP recommends beach restoration and beautification and other tourism promoting activities. Total solution approach to tourist beaches <ul style="list-style-type: none"> • Projek Pemulihan Pantai • 'Projek Penambakan Pantai dari Bagan Pinang ke Tg Lembah, Port Dickson, NS' • Landscaping in Flood Mitigation programme 	Q4 2010
	4.3.3 Publish guidelines, books and pamphlets for all levels of society on flood preparedness, flood machinery	<ul style="list-style-type: none"> • Published guidelines, books and pamphlets • Improved disaster preparedness for target group 	<ul style="list-style-type: none"> • Guidelines for erosion control JPS1/97 in place. • Tsunami modelling and impact study • Guidelines of Flood Proofing for Basement CarPark 	Q2 2009

Goal: To ensure the protection of life and property from the risk of flood and coastal hazards through an integrated approach

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
4.4 Accelerate formulation and implementation of Integrated Shoreline Management Plans and integrated flood management plan (to improve spatial planning initiatives)	4.4.1 Standardise critical components in ToR for Integrated Shoreline Management Plan	<ul style="list-style-type: none"> Achieve one ISMP in each state or covering 50% of shoreline Reduction in number of critical erosion areas by 20% 	4 ISMP studies to complete under RMK9 <ul style="list-style-type: none"> ISMP Pahang. ISMP P.Pinang ISMP Negeri Sembilan ISMP Melaka. ISMP Miri 	Q4 2010
	4.4.2 Prepare blueprint for Integrated Flood Management Plan	Holistic plan	Blueprint for Integrated Flood Management	Q3 2009
	4.4.3 Establish and enhance smart partnerships with flood related agencies eg. JPBD and PBT	JPS erosion control guidelines incorporated in JPBD development guidelines	Partnership with JPBD	Q2 2008
	4.4.4 Organise briefings on ISMP and IFM to sensitize state government	Awareness and commitment from state government	<ul style="list-style-type: none"> ISMP for all states IFM 	Q4 2010 Q3 2009
	4.4.5 Involve local authorities in solving coastal erosion issues	<ul style="list-style-type: none"> More informed local authorities; improved perceptions Enforcement of ISMP 	Involving PBT at planning stage of project	Q4 2010

Goal: To ensure the protection of life and property from the risk of flood and coastal hazards through an integrated approach

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
4.5 Create domain experts and think-tanks (to generate innovation and technology)	4.5.1 Organise regular and focused seminars and conferences	Increased intellectual discourse captured through proceedings, papers and publication.	National conference	Q4 2009
	4.5.2 Gives awards for significant research and innovation	Greater productivity and continuous improvement	<ul style="list-style-type: none"> • Participant in innovation competition • Recognition for innovation 	Q4 2010
4.6 Modernise flood forecasting and warning capabilities	4.6.1 Extend flood forecasting and warning systems to cover major river basin	<ul style="list-style-type: none"> • Improved early flood forecasting and warning system • Reduced casualties and damages 	<ul style="list-style-type: none"> • Integrated Flood Forecasting and warning system for Klang Valley <ul style="list-style-type: none"> ○ Infrastructures of telemetry system network ○ System (Model) • Atmospheric Model Based rainfall and Flood Forecasting for Kelantan, Pahang & Johor River • Integrated Flood Forecasting and Warning System for Muda River 	<p>Q1 2010</p> <p>Q4 2010</p>

Goal: To ensure the protection of life and property from the risk of flood and coastal hazards through an integrated approach

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
	4.6.2 Establish smart partnerships eg. Joint projects with MACRES to harness their remote sensing capabilities, Jabatan Meteorologi Malaysia for rainfall forecasting	Faster reporting of erosion control	<ul style="list-style-type: none"> • JPS-MACRES Joint study on shoreline change at Pantai Cahaya Bulan identified (to review) • Joint project of Flood Evacuation Map 	Q4 2010
	4.6.3 Conduct long-term studies on climate change effects and natural hazards	Knowledge of long term vulnerability of coastal region	<ul style="list-style-type: none"> • Field research station identified in Pantai Cenang, Langkawi • National Coastal Vulnerability Index Study-Sea level Rise completed in February 2008 for Tg. Piai and Langkawi 	Q2 2010

FOCUS AREA # 5 : CENTRE OF EXCELLENCE FOR HYDROLOGY, RIVER MANAGEMENT, COASTAL MANAGEMENT AND URBAN DRAINAGE

Goal: To develop world recognised expertise in hydrology and stormwater, river and coastal zone management				
Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
5.1 Enhance human resource development through training and education towards achieving world recognized expert	5.1.1 Identify fields and pools of expertise required & training needs	<ul style="list-style-type: none"> • Database of expertise required • List of expertise in respective fields • Preparation of yearly programme 	Training Needs Program prepared	Q4 2010
	5.1.2 Identify and develop potential candidates for further studies	<ul style="list-style-type: none"> • Database of potential experts. • Pool of expert with post graduate degrees with target of 20% Msc and 3% PhD 	<ul style="list-style-type: none"> • JPS Search Committee • Identify sponsorship programs (JPA, Monbusho, ADB, IDB, etc) 	Q4 2010
	5.1.3 Obtain local and or international professional accreditation	<ul style="list-style-type: none"> • Professionally accredited experts • 10% Professional engineers (PE). 	<ul style="list-style-type: none"> • Technical attachment programme towards obtaining PE • In-house training report for new engineers towards obtaining PE 	<p>Q1 2008</p> <p>Q4 2010</p>

Goal: To develop world recognised expertise in hydrology and stormwater, river and coastal zone management

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
	5.1.4 Request for expert / specialist scheme from Government	Recognised expert schemes of service	Department to recommend flexi post (41/ 44/ 48/ 52/ 54/ JUSA) and personal to holder for all identified specialist posts.	Q2 2009
5.2 Enhance opportunity in R&D in applied research for solving field problems	5.2.1 Assess our past research and dev programmes including innovations	Realignment of R&D programme	Compilation and assessment of information from respective divisions. <ul style="list-style-type: none"> ○ MIHP Research Committee Programmes. (IHP UNESCO Phase VII (2008 – 2013)) ○ eScience Fund ○ Departmental allocation for R&D 	Q1 2009
	5.2.2 Assess our current capacity and strength in research from stakeholders' perspective (e.g. NRE, MOSTI, KTAK, EPU)	<ul style="list-style-type: none"> • Identification of research focus areas • Detailed and comprehensive assessment report on R&D needs. 	To undertake SWOT Analysis.	Q2 2009
	5.2.3 Prioritise field problems and conduct research	List of prioritize research for more effective solutions	<u>River</u> <ul style="list-style-type: none"> ○ Reviewing river basin boundaries. ○ Initiate several R&D projects: ○ Formulate procedures for conservation of endangered species with respect to water river quality i.e. Kelah Projects ○ Formulate procedures for monitoring 	Q1 2008

Goal: To develop world recognised expertise in hydrology and stormwater, river and coastal zone management

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
			<p>river water quality using Biological Indicator and its correlation with Biochemical monitoring.</p> <ul style="list-style-type: none"> ○ Carry pilot projects using bio-remediation to improve river water quality on polluted water bodies. <p><u>Hydrology</u></p> <ul style="list-style-type: none"> ○ Study on Effects of Logging in Sg Weng Catchment ○ Urban Hydrology Study for Sg. Kayu Ara ○ Catchment boundary demarcations using SRTM (DEM) and GIS for Johor 	
<p>5.3 Acquire Research & Development facilities</p>	<p>5.3.1 Identify facilities required</p> <ul style="list-style-type: none"> • Equipment • Laboratory • Infrastructures • Software & Hardware 	<ul style="list-style-type: none"> • Equipped with facilities. • Able to maximize resources hence well organized and coordinated R&D. 	<p><u>Coastal</u></p> <ul style="list-style-type: none"> • Open laboratory for Coastal R&D. • Computer simulation and modeling laboratory. <p><u>Hydrology</u></p> <ul style="list-style-type: none"> • Weather Station for all reservoirs. <p>High-end computers for atmospheric and land based flood forecasting and warning system.</p>	<p>Q2 2009</p> <p>Q1 2009</p> <p>Q2 2009</p> <p>Q2 2009</p>

Goal: To develop world recognised expertise in hydrology and stormwater, river and coastal zone management

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
			<p><u>SMART</u></p> <ul style="list-style-type: none"> • Surveillance System, Telecommunication for SMART <p><u>River</u></p> <ul style="list-style-type: none"> • Computer simulation and modeling laboratory. <p><u>HTC</u></p> <ul style="list-style-type: none"> • Environmental Weather Station. • Learning Laboratory for Integrated Urban Water Management System. 	<p>Q2 2009</p> <p>Q4 2010</p> <p>Q4 2010</p>

Goal: To develop world recognised expertise in hydrology and stormwater, river and coastal zone management

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
5.4 Establish collaborative partners at local and international level	5.4.1 MoU or strategic alliance with local and foreign research institution, institution or higher learning	<ul style="list-style-type: none"> • Collaborative programmes with local and foreign institutions and expanded network established. • 8 MOU's (4 MOU's signed) 	<ul style="list-style-type: none"> • MoU between HTC KL and UNESCO Paris. • MoU between JPS and ANM • MoU between JPS and MACRES. • MoU between JPS and REDAC USM. • Strategic Alliance with NIWA, New Zealand. • Partnership with Category II UNESCO Water Centres. 	Q2 2009
	5.4.2 Organise and participate in workshops, conference, colloquium, seminars, etc	<ul style="list-style-type: none"> • 20 targeted conf/ws/etc organise/ participate where engineers with at least 5 years service should attend in 1 int. conf. for knowledge and technology exchange and transfer 	<ul style="list-style-type: none"> • 5th World Water Forum, Turkey. • 11th International Conference of Urban Drainage. • ICCE08, Hamburg, Germany 	Q1 2009 Q3 2008 Q3 2008

Goal: To develop world recognised expertise in hydrology and stormwater, river and coastal zone management

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
		<ul style="list-style-type: none"> • Every engineer should attend at least 1 local conf once a year 	<ul style="list-style-type: none"> • IOC Sub-Commission for the Western Pacific (WESTPAC-VII) • Indian Ocean Tsunami early warning system • 3rd SEA Water Forum. • 2nd International Conference On Managing Rivers In the 21st Century. 	<p>Q2 2008</p> <p>Q2 2008</p> <p>Q4 2007</p> <p>Q2 2007</p>
	5.4.3 Publish and disseminate research findings in established journals, proceedings, technical documents and manuals etc.	Centre of reference established and images enhanced with 20 of published research findings	To publish more papers periodically.	Q4 2010
	5.4.4 Invite foreign experts for conducting joint research and training	Transfer knowledge and technology with at least 6 foreign experts invited for joint research and training annually	Please refer to Appendix III.	Q4 2007

Goal: To develop world recognised expertise in hydrology and stormwater, river and coastal zone management

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
	5.4.5 Participate in foreign expert groups and international scientific organisation e.g. WMO/UNESCO, Joint Committee on Urban Drainage of IWA/IAHR/IAHS	Better networking for knowledge transfer.	Active member of internationally recognized institutions in related fields.	Q4 2010
5.5 Generate source of income	5.5.1 Commercialization and patenting research product	New technology and enhance image of department as centre of reference.	<p><u>DID Penang</u></p> <ul style="list-style-type: none"> • GeoProtect <p><u>Coastal</u></p> <ul style="list-style-type: none"> • Patent applied for Labuan Blocks for coastal defence 	Q2 2009

FOCUS AREA #6: EXCELLENT SUPPORT SERVICES

Goal: To ensure efficient and effective support services in facilitating JPS operations				
Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
6.1 Leveraging new technologies in ICT to support business processes and decision-making	6.1.1 Extending high bandwidth network infrastructure progressively to all offices.	<p>All JPS offices nationwide will be connected via NRE*Net regionally.</p> <ul style="list-style-type: none"> • Central • Northern • Southern • Eastern 	<p>Establishing a single high bandwidth network nationwide to support ongoing and future ICT initiatives.</p> <ul style="list-style-type: none"> • NRE*Net will be extended to all JPS offices nationwide <ul style="list-style-type: none"> ○ Central ○ Northern ○ Southern ○ Eastern • All the meeting rooms in HQ will be equipped with wireless access. • Network bandwidth will be upgraded from time to time depending on usage. • Upgrading the Local Area (LAN) in the HQ. 	<p>Q3 2009</p> <p>Q4 2010</p> <p>Q3 2010</p> <p>Q3 2010</p>

Goal: To ensure efficient and effective support services in facilitating JPS operations

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
	6.1.2 Narrowing the digital divide among all levels of personnel throughout all offices	Every personnel will be granted access to ICT facilities;	<p>ICT skills will be developed in JPS to encourage an enabling culture.</p> <ul style="list-style-type: none"> • Consolidating hardware/ software licenses (acquiring departmental wide software licenses). <ul style="list-style-type: none"> ○ AutoCAD : 40 licenses for sharing among users. ○ ArcGIS – 10 licenses for sharing among GIS users. ○ eScan antivirus to all PC's ○ Centralized backup system ○ Dewan Eja for P&P personnel ○ Email system- migration to Zimbra collaborative suite - 10% ○ 2009 to consolidate networks licenses for InfoWorks, FloodWorks and InfoNet • Providing continuous training. Training is provided to all system being rolled out and implemented. <ul style="list-style-type: none"> ○ Emolumen - 1 time training to divisions ○ Laman Web – 2 times training to division ○ Info portal – 2 times training to division's and state officers. 	Q4 2010

Goal: To ensure efficient and effective support services in facilitating JPS operations

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
	6.1.3 Review ICT Strategic Plan (ISP) <ul style="list-style-type: none"> Integrate and align ICT into core business processes 	A comprehensive master plan to further improve coordination of ICT programmed that are viable and workable.	Develop a comprehensive master plan to adhere to.	Q4 2010
	6.1.4 Enhance ICT governance <ul style="list-style-type: none"> Review and formulate guidelines and ICT policy 	Strengthen the current ICT governance framework to further improve coordination of ICT programmed	Adopt policies from the central agencies and enforce. <ul style="list-style-type: none"> Polisi Agihan PC Dasar Keselamatan ICT SOP (<i>Standard Operating Procedure</i>) – Pengurusan Pusat Data SOP – Pengurusan Rangkaian/Internet Polisi E-mel JPS SOP Penggunaan Perisian 	Q4 2010
	6.1.5 Generic web based applications to be rolled-out integrating spatial and non-spatial data.	Standardised applications are used throughout JPS Departments; <ul style="list-style-type: none"> MyAsset ePelan SP3B SMATRAK 	Identify successful applications that can be shared / rolled out to all JPS offices to improved service delivery through community applications initiatives.. <ul style="list-style-type: none"> Applications that were and in the process of rollout are: <ul style="list-style-type: none"> MyAsset (Sistem Pengurusan Aset) 	Q3 2010

Goal: To ensure efficient and effective support services in facilitating JPS operations

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
		<ul style="list-style-type: none"> • eAduan • eSaliran • eFiling • SMATKOS • SMAP 	<ul style="list-style-type: none"> ○ ePlan ○ eAduan 	
	<p>6.1.6 Foster collaboration and knowledge / data sharing among all JPS offices and inter agencies/departments to support collaborative decision-making.</p>	<p>A centralised knowledge bank/repository .</p>	<p>Sharing of knowledge and experiences by capturing information across department and across government</p> <ul style="list-style-type: none"> • Implement main portals : Government-to employee portal Citizen centric and business portal <ul style="list-style-type: none"> ○ JPS intranet website (InfoPortal) and JPS public website. • Enhance collaboration with other government agencies especially with NRE and our sister agencies as well as the Central agencies . <ul style="list-style-type: none"> ○ Work closely with NRE and MAMPU on network securities issues through GCERT. • Implement Knowledge Management System (KMS) 	<p>Q4 2010</p>

FOCUS AREA #6: EXCELLENT SUPPORT SERVICES

Goal: To ensure efficient and effective support services in facilitating JPS operations				
Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
6.2 Improve towards comprehensive program budgeting and expenditure tracking	6.2.1 Continuous monitoring, training and advice on budgeting procedures in line with the Treasury's Instructions (AP)	Efficient and effective budgeting and expenditure programs	<ul style="list-style-type: none"> • Implementations of Finance and Account management Committee (JPKA) and Government Removable Assets Committee (JKPAK) • Holding a Budget Examination Meeting every year with Treasury's Budget Review Officer (BRO) • Having quarterly meetings with all PTJ and division on budget performance • Constantly check the issues and problems on finance and account through monthly Finance Management Section meeting. • Sending the staff to suitable finance and account courses every year to refresh and enhanced their knowledge and skills particularly to new instructions and developments. 	Q4 2010

Goal: To ensure efficient and effective support services in facilitating JPS operations

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
<p>6.3 Providing and ensuring logistic matters for JPS personal are well taken care off</p>	<p>6.3.1 Continuous monitoring on building maintenance, water and electricity supplies</p>	<p>Zero complaint from JPS personnel</p>	<p>Maintenance project of JPS :</p> <ul style="list-style-type: none"> • Air-conditioner System ; <ul style="list-style-type: none"> - Suggestion of installation & replacement of existing 'window unit' to 'split unit' air-cond - Installation of 'Switch Board Control' for all AHU unit's which is centralized at Maintenance Unit • Electrical System ; <ul style="list-style-type: none"> - Suggestion of installing decorative lights , P.A system & Spot light at IPJPS - Installation of 'security camera' at all main offices of JPS • Fire alarm system ; <ul style="list-style-type: none"> - Reapirment of existing 'host-reel' - Installation of 'Emergency Alarm' for fire system at all main JPS block's 	<p>Q3 2007</p>

Goal: To ensure efficient and effective support services in facilitating JPS operations

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
			<ul style="list-style-type: none"> • Telephone & Fax system ; - Installation of additional telephone set 'Boss Secretary' for Grade 54 and above - Additional Installation of phone lines - Monthly maintenance TM-Centrex & Fax machine • Water supply & Wastage System; - Reinstallation of new water pipe system at all buildings 	
	6.3.2 Implementing Card Access System for security purposes	Entry of visitors can be monitored efficiently	<p>(a) Develop a systematic monitoring and inspection to ensure & enhance the security level in the building to be maintained</p> <p>(b) To establish a mechanism for effective implementation of Card Access System</p>	Q3 2007

Goal: To ensure efficient and effective support services in facilitating JPS operations

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
6.4 Ensuring the implementation of the JPS Succession Plan are well planned and co-ordinated	6.4.1 Identifying and short-listing of all personnel with great potentials	Proactive and efficient personnel of JPS	<ul style="list-style-type: none"> Proactive & efficient personnel are given rewards for their excellent performance Personnel that express moral values through various activities such as counseling, religion guidance and report corruption & misbehavior were given letter of appreciation 	Q4 2007

FOCUS AREA #6: EXCELLENT SUPPORT SERVICES

Goal: To ensure efficient and effective support services in facilitating JPS operations				
Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
6.5 Timeliness, cost effectiveness and quality in project delivery	6.5.1 Adopt best project management practice and tools for monitoring project performance	Effective and efficient implementation of development projects	<ul style="list-style-type: none"> • To establish procedures and mechanism for effective monitoring of project implementation <ul style="list-style-type: none"> ○ Create project information monitoring system. ○ Implementation of Quality Assurance and Quality Control (QA & QC) procedures for technical auditing of every major projects. ○ To acquire and enhance capability in application of Critical Path Method (CPM) in project management. • To create a capable and competently strong project management team. <ul style="list-style-type: none"> ○ Competent staff in relevant technical knowledge and experience through continuous training. 	Q4 2010

Goal: To ensure efficient and effective support services in facilitating JPS operations

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
			<ul style="list-style-type: none"> • To become a reference centre for project management <ul style="list-style-type: none"> ○ Provide expert technical advice/support on construction technology. ○ To develop guidelines,/manual /, checklist for quality assurance of construction works. 	

FOCUS AREA #6: EXCELLENT SUPPORT SERVICES

Goal: To ensure efficient and effective support services in facilitating JPS operations				
Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
6.6 Modernization and automation of infrastructure	6.6.1 To formulate assets assessments categories <ul style="list-style-type: none"> Inspection on availability of all the Assets Identification and segregation of infrastructure to NRE & MOA Implementation of Technical Auditing 	<ul style="list-style-type: none"> Asset Management System Efficient assets management system Data of assets categories 	<ul style="list-style-type: none"> Data verification of Federal Asset for M&E equipments and machineries Data collection from ME states Identification, categorization, segregation M&E Infrastructure technical Auditing 	Q4 2009 Q4 2007 Q4 2007 Q4 2010
	6.6.2 Enhance and upgrade all the infrastructure to meet design objectives <ul style="list-style-type: none"> Retrofit, upgrading and automate of all infrastructure 	Modernized, best and good infrastructure management and facilities with remote monitoring and control system <ul style="list-style-type: none"> Replacement from manual to electrical system Engine driven facilities to 	<ul style="list-style-type: none"> Upgrade Mechanical infrastructure to category 5 <ul style="list-style-type: none"> Upgrade Gate infrastructure to category 5 (target 20% in RMK 9) Upgrade Pump infrastructure to category 5 (target 20% in RMK 9) 	Q4 2010

Goal: To ensure efficient and effective support services in facilitating JPS operations

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
		electrical powered facilities • Incorporate SCADA system for remote control and monitoring	<ul style="list-style-type: none"> • 25 new SUV transportation • 5 new lorry/ heavy transportation • 15 new boat • Operation, Repair and Maintenance of Dredger and it's utilities 	
	6.6.3 Preventive maintenance • Perform Scheduled maintenance	To detect problems early and make sure no breakdown for the system and infrastructure during crucial moments	<ul style="list-style-type: none"> • Technical auditing • Periodic testing • Coordinate meeting with ME states – Periodic Maintenance 	Q4 2010
	6.6.4 Upgrade operational and performance research centre • Creation of new ideas and products Implementation to all states	<ul style="list-style-type: none"> • Pump test centre • Continuous research and innovation discoveries in upgrading the performance of infrastructures and in providing services • R&D Centre for Hydromechanical infrastructure 	<ul style="list-style-type: none"> • Upgrading of pump test bay • Trained Technical committee • FRP Trash Screen & Grating • FRP Flap Gate & Screw Down Gate • HDPE Flap Gate and Screw Down Gate 	Q4 2010

Goal: To ensure efficient and effective support services in facilitating JPS operations

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
			<ul style="list-style-type: none"> • Replacement for hardwood timber and music nod materials • Data logger (Mizan Logger) • Pump Expert System • Reliability test for new pump • Model test for pump sump • New Materials for Gate using composite • Aluminium Gate Coating for corrosion protection • Solar powered tube well ground water • Winsplatform – standard SCADA system 	
	6.6.5 To promote and develop energy Management	<ul style="list-style-type: none"> • Promote and implement MS 1525; Electrical energy Management Regulation • Promote and implement renewable energy program 	<ul style="list-style-type: none"> • Registration of Electrical installation with Suruhanjaya Tenaga • Established guideline for Electrical Operation and Maintenance 	<p>Q4 2010</p> <p>Q4 2008</p>

Goal: To ensure efficient and effective support services in facilitating JPS operations

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
			<ul style="list-style-type: none"> • Established guideline for energy conservation • Auditing 5 pump house and installation of Energy Gadget (VSD – Variable Speed Drive) 	<p>Q4 2009</p> <p>Q4 2010</p>
	<p>6.6.6 To provide safe operation and healthy working condition and environment</p>	<ul style="list-style-type: none"> • OHSAS certification • Compliance to regulation AKKP 412 • Managing Flood Disaster 	<ul style="list-style-type: none"> • Implement OHSAS 18000 at JPS state office with ME personnel (18) • Monitoring of Minutes of SHC meeting • 80% of all new M&E installation comply with AKKP 412 • Forming 4 zone ERP Team 	<p>Q4 2010</p>

FOCUS AREA #6: EXCELLENT SUPPORT SERVICES

Goal: To ensure efficient and effective support services in facilitating JPS operations				
Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
6.7 Enhancing quality programs	6.7.1 Focus on ISO	Achieving certification from recognized bodies	<ul style="list-style-type: none"> • Promotion on the application of management systems; MS ISO 9001:2000, MS ISO 14001:2004 and OHSAS 18001:1999 from 3rd party certification bodies. • Emphasis is to be given to MS ISO 9000 onto all core processes. 	Q4 2010
6.8 Win Prime Minister's Quality Award	6.8.1 Coordinate Dept's preparation in entering the AKPM competition	Complete documentation	<ul style="list-style-type: none"> • Information acquisition dan preparation of documentation • Establishment of working committee. • Audit JPS against criteria. • Submission of AKPM application and preparation for assessment panel visit. • Acknowledgement of AKPM results 	Q3 2009 Q2 2009 Q4 2009 Q1 2010 Q4 2010

FOCUS AREA #6: EXCELLENT SUPPORT SERVICES

Goal: To ensure efficient and effective support services in facilitating JPS operations				
Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
6.9 To focus on promoting and enhancing value added engineering on all existing and new structures built, operated and maintained by JPS	6.9.1. Inculcate and promote value added engineering knowledge in the design, operations and maintenance of JPS structures amongst the stakeholders	Improvement in the operational, serviceability and durability of structures	Develop a systematic monitoring, and inspection and rehabilitation of all major JPS structures to enhance durability and service life of structures through:- <ul style="list-style-type: none"> • Re-vitalize & upgrade existing asset management system of JPS Structures. 	Q3 2010
			Perform Conditional Assessment of Structures <ul style="list-style-type: none"> • Setting up of CSI Team • Acquiring technical know-how in durability of concrete structures through appraisal, repair & rehabilitation of structures by:- • 2 Repair projects/year • 2 appraisal projects/year • Hand-on training and attending courses in basic forensic and assessment work 	Q3 2010

Goal: To ensure efficient and effective support services in facilitating JPS operations

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
		<ul style="list-style-type: none"> Bringing aesthetical value and added attraction to all sites. 	<ul style="list-style-type: none"> Identify and develop jointly with stakeholders on projects related to beautification and attraction of JPS site and infrastructures 	Q3 2010
	6.9.2 Collaborate and monitor with the stakeholders in enhancing the practice of value added engineering in the O & M of JPS structures	O & M performance auditing, remedial and restoration planning and design	<ul style="list-style-type: none"> Implement standard structural monitoring and assessment Guideline/ checklist to all states/project offices Categorization of Structure conditions for rehabilitation and repair priority Condition assessment and evaluation problematic structures Program to identify and implement functional enhancement / improvement of JPS structures (1 product /year) 	Q4 2009

Goal: To ensure efficient and effective support services in facilitating JPS operations

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
<p>6.10 Building capacity in the field of structural, geotechnical and hydraulic engineering relevant to JPS environment.</p>	<p>6.10.1 To acquire skill and knowledge in the use of related technology / software)</p>	<ul style="list-style-type: none"> • Competent JPS Engineers <ul style="list-style-type: none"> ○ (Minimum of 2 competent engineers at all times for each commonly used software) • Efficient & effective technical output in term of comprehensiveness, quality, economy & safety 	<ul style="list-style-type: none"> • Relevant Softwares to be used in Technical works (10 per year) • Schedule Software Training (In-house + outsource training). <ul style="list-style-type: none"> ○ StaadPro = 6 engineers Dec 2009 ○ Plaxis = 4 engineers/TA (2009) ○ Hec Ras = 4 engineers (2009 - 2010) ○ Slope W = 5 engineers/TA (2009 – 2010) ○ SeepW = 3 engineers/ TA (2009 - 2010) • Acquiring new/upgrade software • (3 new + 3 upgrading proposed) 	<p>Q4 2009</p>

Goal: To ensure efficient and effective support services in facilitating JPS operations

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
	6.10.2 Acquiring sound understanding and knowledge in soil investigation & its interpretation	<ul style="list-style-type: none"> • Expert advice on (engineering) problems • Reliable and good SI data for design & decision making in problems solving 	<ul style="list-style-type: none"> • In-house review and interpretation of SI reports for planning and design works <ul style="list-style-type: none"> ○ 5 projects per year • Technical personnel to be attached to Contractor during SI works (2 per year) • Participate in soil investigation test such as load bearing, PDA, etc (2 per year) • Strengthening of Site Investigation Team (S.I.T.E)” that act as a Quick Response Team to collect preliminary data especially in emergency cases <ul style="list-style-type: none"> ○ No of projects = 8 per year 	Q3 2009
	6.10.3 Upgrade capacity & level of competency through in-house design works		<ul style="list-style-type: none"> • All Unit to carry-out hand-on design projects (min. 2 project / Engineer (J44 & below) / year • Quality Assurance of Design Works 	Q3 2009

Goal: To ensure efficient and effective support services in facilitating JPS operations

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
			<ul style="list-style-type: none"> ○ Review of Arahan Teknik for documentation of design Procedures ○ Develop design guides and manual for standardization and quality design works ○ Nationally integrated digital drawings database for ease of design works (e-Plan roll-out) 	
	<p>6.10.4 Upgrade capacity & level of competency through Technical advice services in engineering works</p>	<p>Dissolve all technical problems in quick, professional and in line with best practices/Standard</p> <ul style="list-style-type: none"> ● Emergency works ● Technical design /construction problems (both Dept and Consultant design) 	<p>Competent Technical advices/support</p> <ul style="list-style-type: none"> ● in Structural & Geotechnical (20 no. per year) ● Hydraulic (Flood Mitigation, river & storm management studies/design) and Dam (Consultant's Design) – 50 No. per year 	<p>Q4 2009</p>

Goal: To ensure efficient and effective support services in facilitating JPS operations

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
6.11 To develop, promote, and enhance dam safety surveillance system	6.11.1 Carry out automation of instrumentation data delivery system and performance measuring device	Establishment of dam automation electronic data delivery system from dam operator to the Dam Unit in BSGE	Establish Dam Automation System for every dam monitored by JPS Dam unit.	Q2 2009
	6.11.2 Carry out dam isotopic characterization	<ul style="list-style-type: none"> • Establishment of permanent baseline data. • Able to determine source of uncontrolled seepage • Support analysis with regards to seepage problems 	Yearly collection of isotopic data in the field	Q4 2009
	6.11.3 Carry out catchments monitoring system using remote sensing	Establishment of system for monitoring intrusion, encroachment, land opening activities in the catchments area	Yearly acquisition of satellite images for all JPS dams and continuous monitoring	Q4 2009
	6.11.4 Carry out monitoring of sediment loading	Support analysis with regards to trend of incoming sediment into the dam storage.	Facilitate ANM (Agensi Nuklear Malaysia) in establishment of monitoring procedure	Q4 2010

Goal: To ensure efficient and effective support services in facilitating JPS operations

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
6.12 To promote the services in the design and construction of building for other departments	6.12.1 Carry out design and construction services to other department	<ul style="list-style-type: none"> • Better image for JPS • Completed construction of building that complies with best standard & specification. 	Enhancing capability to handle Building Related Projects for other Department (10 projects per year)	Q4 2010
6.13 To put up engineering guidelines relevant to JPS works	6.13.1 To prepare, review and update technical guides/specifications	<ul style="list-style-type: none"> • Standard technical guides /specification to be adopted for use by the Department • Provide up-to-date technical guidelines on design of hydraulic structures • Provide up-to-date information on the use of construction material technology • Quality technical outputs in terms of consistency, safety, effectiveness and cost 	Development of Design manuals as follows: - (4 No. by 2010) <ul style="list-style-type: none"> • Specification of works and guide to repair and rehabilitate age / problems structures • Guideline on the design of culverts • Standardization and guideline for the design of Arch Bridges • Guide to estimation of scour depth in river bend • Preparation and review of DID Manual • Revision of Guidelines (Arahan Teknik) for documentation of design projects 	Q4 2007 Q4 2007 Q4 2009 Q2 2009 Q2 2009 Q4 2009

Goal: To ensure efficient and effective support services in facilitating JPS operations

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
6.14 Prospect for new and improved construction technology and materials	6.14.1 To continuously source for new, innovative or improved construction technology and materials	<ul style="list-style-type: none"> • Improved effectiveness and efficiency in the application of new or improved construction technology/materials • Better products that meet the requirement of stakeholders. • An establish forum/mechanism for creating, studying and reviewing new or improved construction technology and materials 	<ul style="list-style-type: none"> • Identify, develop & enhance products through. literature study, pilot project, and laboratory test etc <ul style="list-style-type: none"> ○ Min 5 new/improved materials • Establishing network with all relevant industry stakeholders (private and public sectors) • Active engagement /participation in organisation/institution formulating standard, guidelines or approval of construction technology/ materials. • Study and recommend any new products before full adoption by JPS <ul style="list-style-type: none"> ○ 3 No. per year • Pursuing intellectual property rights to JPS innovative ideas and products <ul style="list-style-type: none"> ○ No. per year 	<p>Q3 2010</p> <p>Q3 2010</p> <p>Q3 2010</p> <p>Q3 2010</p> <p>Q3 2010</p>

FOCUS AREA #6: EXCELLENT SUPPORT SERVICES

Goal: To ensure efficient and effective support services in facilitating JPS operations				
Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
6.15 Staff training and career development via <ul style="list-style-type: none"> Develop competencies of individuals via training and non-training interventions Building in-house capabilities and capacities through extensive and focussed training programs 	6.15.1 Conduct and review planned programs and courses	Well planned and relevant programs / courses	<ul style="list-style-type: none"> Annual training program (local & oversea) Impact assessment on selected courses 	Q4 2010
	6.15.2 Introduce supplementary programs / courses to meet specific needs from time to time	Ad-hoc and urgently needed courses are conducted	<u>2009</u> <ul style="list-style-type: none"> Special Management Course (Grade 48 and above) Media Course for JUSA , Division Directors and State Directors Cash Flow Management Public Relation Techniques for PRO 	Q4 2010
	6.15.3 Adopt external best practices to assist in competency development <ul style="list-style-type: none"> Facilitate in-house design Counterpart attachment in consultancy firm 	Competent staff	<ul style="list-style-type: none"> Dissemination of knowledge through “Brown Bag” concept PPLKK program (Engr < 5 yrs service) Competency Index Development of Engineer’s Database and Support Group I Database TNA for Technical Staff (1) 	Q4 2010

Goal: To ensure efficient and effective support services in facilitating JPS operations

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
	6.15.4 Facilitate staff in matters pertaining to confirmation, promotion & career development	Competent and motivated staff	<ul style="list-style-type: none"> • Conduct PTK • Conduct Dept. Exam. / Special Exam. • Conduct Induction Course 	Q4 2010
	6.15.5 Enhance training facilities & improve conduciveness of the learning environment	A conducive learning environment and up-to-date training facilities	<ul style="list-style-type: none"> • Upgrading of hostel's facilities • Upgrading of sport and recreational facilities • Upgrading of learning facilities 	Q4 2010

FOCUS AREA #6: EXCELLENT SUPPORT SERVICES

Goal: To ensure efficient and effective support services in facilitating JPS operations				
Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
6.16 Improve effectiveness of Procurement and Contract Management through the use of innovative Best Practice Management	6.16.1 Contract administration processes to be web-enabled	<ul style="list-style-type: none"> • Enhanced efficiency through automatic generation of certificates and documents • Automatic updating of contract information (SMATRAK) through use of online forms 	<ul style="list-style-type: none"> • Upgrading SMATRAK System (online) to produce standard forms and certificates automatically: • Letter of Acceptance • Certificate of Delay And Extension of Time • Variations Order & PHK • Certificate of Practical Completion • Certificate Making Good Defect • Interim & Final Payment • MRK01, MRK02 & MRK03 Forms for submission by States JPS to PKK 	Q3 2009

Goal: To ensure efficient and effective support services in facilitating JPS operations

Strategies	Action	Expected Outcomes	Programme/ Project/ Strategic Action	Expected Timeframe
	6.16.2 Consultancy Services Information to be available on-line	<ul style="list-style-type: none"> • Accessibility of information on Consultants • Automatic updating of Consultant's information (SMAP) through use of online forms 	<ul style="list-style-type: none"> • SMAP (online) • List of Awarded Consultants • List of Consultant Profile • Online Profile Updating by Consultant 	Q4 2007
	6.16.3 Establish Integrated web-based procedures and guidelines system	<ul style="list-style-type: none"> • Enhanced accessibility to current procedures and guidelines • Efficiency in contract administration • Consistency in project management & supervision 	Preparing Procedure and Guidelines using Web based flowchart <ul style="list-style-type: none"> • Procurement <ul style="list-style-type: none"> ○ 'Garis panduan Tatacara Perolehan' • Contract Administration <ul style="list-style-type: none"> ○ DID Manual (Flow Charts) 	Q2 2009
	6.16.4 Standardize Specifications and Bills of Quantities	<ul style="list-style-type: none"> • Reliable database for contract rates (SMATKOS) • Uniformity of Standard Specifications/ Bills of Quantities. 	Preparing of:- <ul style="list-style-type: none"> • Standard Specification • Standard BQ • SMATKOS 	Q3 2009