

# **Appendices**

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## Appendix 1 List of Participants

### Turkey Side

IMM Transportation Department	
Muzaffer Hacimustafaoglu	Deputy Secretary General and Director of Transportation Department

IMM Project Team	
Atilla Alkan	Team Leader & Manager of Transportation Planning
İhsan Hadi Karadeniz	Deputy Team Leader & Deputy Manager of Transportation Planning
Neriman Şahin	Msc.Civil Engineer
Mehmet Çakır	Urban Planner
Serap Çetinkaya	Msc.Urban Planner
Serkan Şimşek	Geophysics Engineer
Dilek ÇOL	Msc.Urban Planner
Emel Günay	Msc.Urban Planner
Orhan Aktaş	Msc. Statistician
Nilüfer Dünya	Urban Planner
Aysun Sarı	Urban Planner
Çare Olgun Çalışkan	Msc.Urban Planner
Gizem Erdoğan	Msc.Urban Planner
Berna Çalışkan	Msc.Civil Engineer
Eray Sezer	Msc.Urban Planner
Evren Posacı	Urban Planner

Advisors	
Prof.Dr.Gökmen Ergün	Transportation Planner
Prof.Dr.Aykut Toros	Demographer
Doç Dr. Murat Çelik	Transportation Planner
Yrd.Doç.Dr.Darçın Akın	Transportation Planner

Steering Committee	
Mesut Pektas	Istanbul Metropolitan Municipality General Secretary
Muzaffer Hacimustafaoglu	Deputy Secretary General and Director of Transportation Department
Metin Akbaş	Turkish State Railways (TCDD)
Kemal Tuncer	Turkish State Railways (TCDD)
İsmail Özdemir	Turkish State Railways (TCDD)
C.Yaşar Tangül	Turkish State Railways (TCDD)
A. Ufuk Kınık	Turkish State Railways (TCDD)
M.Rahmi Gül	Turkish State Railways (TCDD)
Hikmet Erkut	TCK 17. Regional Directorate
Mehmet Küçüköğlü	TCK 17. Regional Directorate
Asım Öztürk	TCK 17. Regional Directorate
Celal Mahmut Solak	City Gendarme Commandership
M.Ziya Erdem	DLH Marmaray Regional Management
D.Sema Yılmazkardeşler	DLH Marmaray Regional Management
Erhan Kura	DLH Marmaray Regional Management
Mehmet Arslan	DLH Marmaray Regional Management
Erdal Şahin	Istanbul Regional Directorate in Ministry of Transportation
Emre Sinan Purlul	Istanbul Regional Directorate in Ministry of Transportation
Yb. Yavuz Geçim	Istanbul Regional Directorate of Marine Undersecretariat
Erkan Tuncer	Istanbul Regional Directorate of Marine Undersecretariat
Kazım Alpay	Istanbul Regional Directorate of Marine Undersecretariat
Şükrü Uçar	DHMI Atatürk Airport Adiminstration General Directorate
Fevzi Sünbül	National Defence Ministry 1st Army Commandership Logistics Department
Ali Özsoylar	Istanbul Security Directorate
Gürzel Fırat	Istanbul Security Directorate
Turan Odabaş	Istanbul Security Directorate
Abdullah Çınar	Istanbul Chamber of Trades
Ömer Kuray	Istanbul Chamber of Trades
Meltem Duran	Istanbul Chamber of Trades
Mustafa Silah Yürekli	Istanbul Chamber of Trades
Suat Yalkın	Istanbul Chamber of Trades

### Japan Side

JICA Study Team	
Tetsuo WAKUI	Team Leader / Transport Planning
Kenji TANAKA	Urban Planning
Noboru IKENISHI	GIS / Disaster Protection Planning
Yuko SAKAI	GIS
Kenichi SEKINE	Transportation Demand Analysis
Tesuo HORIE	Transportation Demand Analysis
Toshisada KATSURADA	Road Transportation Planning
Seiya MATSUOKA	Traffic Management
Kentaro OKUNO	Road Planning and Designing
Hiroshi IZAWA	Rail Transit Planning
Teruki MISHIMA	Rail Transit Designing
Shogo UCHIDA	Rail Transit Operation and Management
Takashi SHOYAMA	Bus Operation and Management
Akitoshi IIO	Environment Management
Dr.Katsuhiko TAKAHASHI	Finacial and Institutional Planning
Ken KUMAZAWA	Economic / Financial Analysis
Tamaoki WATANABE	Pilot Project Planning and Implementation
Yasuko YAMADA	Coordinator

Japan International Cooperation Agency	
Prof.Dr.Tetsuro HYODO	Advisor / Tokyo University of Marine Science and Technology
Kazumasa SANUI	Project Coordinator JICA Head Quarter
Satoshi UMENAGA	Deputy Resident Representative JICA Turkey Office
Ali BEKIN	Program Manager / JICA Turkey Office

Cooperator	
Dr.Metin Şenbil	Transport Engineer
Selim Çevik	Urban Planning and Transport Expert
Selen Zora	Secretary
Ece Işın Doğan	Secretary
Kosuke NASU	Transport Researcher

Özkan Eker	Directorate of Transport Coordination
Boğaçhan Akalın	Directorate of Transport Coordination
Yavuz Delice	Directorate of Transport Coordination
Namık Kaya	Public Transportation Service Directorate
Can Onur Gotuk	Public Transportation Service Directorate
Abdurrahman Uçak	Science Affairs Directorate
Nihat Cirit	Istanbul Sea Buses General Directorate (IDO)
Ali Osman Tekkenat	Istanbul Sea Buses General Directorate (IDO)
Fatih Karahacıoğlu	Istanbul Sea Buses General Directorate (IDO)
Hayrettin Oğuz	Istanbul Sea Buses General Directorate (IDO)
Yusuf Boztepe	Istanbul Sea Buses General Directorate (IDO)
Ömer Yıldız	Transportation Corporation (Istanbul Ulasim A.Ş.)
Ali Metin Yazar	Transportation Corporation (Istanbul Ulasim A.Ş.)
Kaan Yıldızgöz	Transportation Corporation (Istanbul Ulasim A.Ş.)
Faruk Karaosman	IETT General Directorate
Mustafa Hatipoğlu	IETT General Directorate
Şükrü Var	IETT General Directorate
Köksal Altinkaynak	IETT General Directorate

Participants Attendance in Weekly Routine Meetings		Times of Attendance*
Gülşen Teslime Aydın	BIMTAS	30
M.Metin Yazar	Transportation Corporation (Istanbul Ulasim A.S.)	12
Metin Küçükkoğlu	TCK 17. Regional Directorate	11
Hikmet Erkut	TCK 17. Regional Directorate	10
Evren Posacı	IMM City Planning Department	10
A.Ufuk Kınık	Turkish State Railways (TCDD)	8
Oğuzhan İmamoğlu	IMM City Planning Department	6
Hayrettin Oğuz	Istanbul Sea Buses General Directorate (IDO)	6
İsa Cerrah	IMM City Planning Department	5
Ömer Yıldız	Transportation Corporation (Istanbul Ulasim A.S.)	5
Abdullah Kazdal	IETT General Directorate	4
Mustafa Murteza	IMM Transportation Planning Department	4
Hasan Üstündağ	Istanbul Sea Buses General Directorate (IDO)	4
Yusuf Boztepe	Istanbul Sea Buses General Directorate (IDO)	4
Mustafa D.Güler	Transportation Corporation (Istanbul Ulasim A.S.)	4
D.Sema Yılmazkardeşler	DLH Marmaray Regional Management	3
Erhan Kura	DLH Marmaray Regional Management	3
Murat Dil	IMM City Planning Department	3
M.Tarık Dündar	Transportation Corporation (Istanbul Ulasim A.S.)	3
M.Rahmi Gül	Turkish State Railways (TCDD)	3
Mevlüt Mert	DLH Marmaray Regional Management	2
Ertan Şimşek	IMM Transportation Planning Department	2
Eser Dağ	IMM Transportation Planning Department	2
Murat Arısal	Transportation Corporation (Istanbul Ulasim A.S.)	2
Kamil Demircan	Transportation Corporation (Istanbul Ulasim A.S.)	2
İbrahim Eren	Turkish State Railways (TCDD)	2
Gülşay Çevik	BIMTAS	1
Murat Diren	BIMTAS	1
Mehmet Tekgül	DLH Marmaray Regional Management	1
Gülbin Saldır	DLH Marmaray Regional Management	1
Faruk Karaosman	IETT General Directorate	1
Kadri Yapıcıoğlu	IETT General Directorate	1
Yavuz Fırıncı	IETT General Directorate	1
İhsan Yılmaz	IMM City Planning Department	1
Engin Yetkin	IMM Planning Department	1
Tülay Mesutol	IMM Transportation Planning Department	1
Hale Erez Külekçi	IMM Transportation Planning Department	1
Melda Haznedaroğlu	IMM Transportation Planning Department	1
Lokman Yengin	Istanbul Sea Buses General Directorate (IDO)	1
Fahrettin Ulku	Istanbul Sea Buses General Directorate (IDO)	1
Şefika Demirci	Istanbul Sea Buses General Directorate (IDO)	1
Güngör Evren	Istanbul Technical University	1
Mümin Kahveci	Transportation Corporation (Istanbul Ulasim A.S.)	1
Soner Kazaca	Turkish State Railways (TCDD)	1
Metin Akbaş	Turkish State Railways (TCDD)	1

\* Weekly routine meetings were held 50 times in total.

**Appendix 2 Ranking and Priority of Maximum Network Project**

**(1) Road**

Code	Project	Length (km)	Const. Cost (US\$ mil.)	Economic Return	Demand	Congestion Alleviation	Land Use	Financial Return	Environment		Non-Economic Aggregated
									Natural	Social	
RD001	Tophane - Iplikci Tunnel	1.67	62.8	A	B	B	B	C	B	B	C
RD002	Widening of Hatboyu street (Coastal road Linkage) in Umraniye	8.07	195.2	B	C	B	B	C	A	A	B
RD003	Bakirkoy between D-100 Land Route (İncirli Junction) - Coastal Road (Atakoy Junction) underpass - flyover project	9.45	118.3	B	B	C	B	C	A	C	C
RD004	Widening project between Kıraç and Esenyurt construction road	2.83	9.4	A	A	C	B	C	A	A	B
RD005	Between Hadimkoy bridge- Yassioren road, road, junction project	9.23	28.6	A	A	C	B	C	A	B	B
RD006	Beykoz, Miharabat Street-TEM Highway Linkage project	1.44	12.3	A	B	C	B	C	A	A	B
RD007	Umraniye, between Kucuksu junction- İsfalt association (Kucuksu street) road rehabilitation project	12.85	50.6	A	C	B	B	C	A	B	C
RD008	Beylerbeyi - Harem Tunnel	4.15	210.0	A	B	C	B	C	B	B	C
RD009	Beylerbeyi - Hekimbasi Tunnel	3.09	175.8	C	B	C	B	C	B	B	C
RD010	Kadikoy - KUSDİLLİ Tunnel	1.03	48.4	A	C	C	B	C	A	B	C
RD011	Tophane - Haskoy Tunnel	1.19	24.9	A	B	C	B	C	A	B	C
RD012	Road Construction For W. Trade Center by Private Sector	9.24	40.3	A	C	C	B	C	A	A	C
RD013	Kucukcekmece D-100 Highway Cbancesme Junction - Olympics Road Linkage Road and Junction Project	26.54	291.8	C	B	B	B	C	A	A	B
RD014	Yakuplu Kumcular Servis Road Project	7.29	24.5	A	B	C	B	C	A	A	B
RD015	Derbent Haciosman Tunnel Project	2.87	61.9	B	B	C	B	C	C	B	C
RD016	Armutlualti - Poligon Mah. Tunnel Project	2.68	68.1	A	B	B	C	C	B	BB	C
RD017	Armutlualti - Ayazaga Tunnel Project	2.55	73.5	B	B	B	B	C	A	B	B
RD018	Kuyumcu Kent - Otagar - Eyüp Tunnel Project	13.83	332.8	B	B	C	B	C	A	B	C
RD019	Road rehabilitation project between Bagcilar, Malazgirt underpass-Mehmet Akif avenue (8.St-1/3St-1/13 St-2/13 St)	3.10	8.8	C	B	C	B	C	A	A	B
RD020	Tuzla Formula-1 Road Network 6 numbered road project	5.70	25.0	A	A	C	B	C	A	A	B
RD021	Link Road between Malazgirt Rd and Mahmat Akif Bulbari	0.90	4.3	A	B	A	B	C	A	B	B
RD022	Road project in Bakirkoy,(D-100 Highway Sefakoy junction - airport A-14 Apron linkage road)	0.52	9.7	A	B	C	B	C	A	A	B
RD023	Sultanbeyli Necip Fazil street - Kartal TEM linkage road project	0.33	4.1	A	B	C	B	C	A	B	C
RD024	Between Umraniye Mandira st - Bag st road project	0.60	4.5	C	C	C	B	C	A	A	C
RD025	New linkage road project between Umraniye Karadeniz street - Mandira street (continuous section of Hatboyu street)	0.21	4.5	A	C	C	B	C	A	A	C
RD026	Kartal Sahit Ahmet Yalcin St - Arkoz St - Cavusoglu St, Adnan Kahveci Viaduct Linkage road junction project	2.02	12.7	A	B	C	B	C	A	A	B
RD027	Umraniye, between Sile Road Yenidogan junction - Pasakoy junction road, junction implementation project	4.24	19.3	A	A	C	B	C	A	A	B
RD028	Re-organizing The existing road in Umraniye Cekmekoy Cavusbasi street according to the construction plan as 20m	2.49	7.5	A	B	C	B	C	A	A	B
RD029	Kartal between Tekel street - D-100 road, junction implementation project	2.48	25.0	A	B	C	B	C	A	A	B
RD030	Uskudar between Zubeyde Hanım Street - Hekimbasi Ciftlik street construction roads implementation projects	1.34	13.8	A	C	C	B	C	A	B	C
RD031	Beykoz , between Kavacik junction – Cekmekoy junction (Cavusbasi road) road, junction implementation project	11.10	31.6	A	B	C	B	C	A	B	C
RD032	West Buyukcekmece Road Network Package	40.46	495.6	A	A	B	A	C	A	B	A
RD033	East Silivri Road network Package	66.30	842.0	B	B	A	A	C	A	B	A
RD034	Silivri Center Road network Package	74.57	827.2	B	B	A	A	C	A	B	A
RD035	West Silivri (Port Area and University Area) Road Network Package	91.85	844.6	C	B	A	A	C	A	B	A
RD037	Tuzla Center Road Network Package	58.51	477.7	C	A	A	A	AA	A	B	A
RD038	New Motorway west section Package	102.43	965.4	A	A	A	A	AA	A	B	A
RD039	New Motorway Kucucekmece section Package	40.49	547.7	B	A	A	A	C	A	B	A
RD040	New Motorway Kagithane section Package	17.30	520.5	C	A	B	B	B	A	B	C
RD041	New Bosphorus Crossing	7.77	843.0	C	A	C	B	A	C	C	B
RD042	New Motorway Kadikoy Branch Package	10.97	332.5	B	B	A	B	C	B	C	C

RD043	New Motorway Uskudar-Umraniye Package	20.75	360.0	B	B	C	B	B	A	A	B
RD044	New Motorway Umraniye-Tuzla Package	55.98	683.5	B	A	A	A	C	C	B	B
RD045	Widening of TEM Highway (Umraniye-Tuzla) Package	69.48	490.4	B	A	A	B	C	A	B	A
RD046	Widening of Connection road (TEM-D100) in Kartal	15.23	112.0	B	B	C	B	C	A	B	A
RD047	Kucucekmece Road Network Package	17.50	135.8	Z	A	B	A	C	A	B	C
RD048	Bahcesehir Road Network Package in Avcilar	10.68	202.7	B	A	A	A	C	A	B	A
RD049	New Truck Route for Ambarli Port - Logistic Center(tunnel for about half length)	11.89	358.9	B	B	A	B	C	A	B	A
RD050	E-W Missing Linkage in Gungoren (tunnel)	1.10	57.4	A	B	C	B	C	A	B	B
RD051	N-S Missing Link in Bahcelievler (tunnel)	2.40	121.4	C	B	C	B	C	A	B	C
RD052	Connection Tunnel between Bosna Bulvari and Hatboyu St (tunnel)	1.13	52.4	A	B	C	B	C	A	A	C
RD053	Re-Construction of Ankara Road between Pendik and Baglanti Road (incl. 2km new road)	15.43	63.0	A	B	B	B	C	A	A	B
RD054	Connection Road between New Motorway and Uskudar Tunnel (50% tunnel)	4.06	123.9	A	B	C	B	C	A	B	C
RD055	Widening of Kennedy Street between Road Tunnel and Mustafa Kemal St. in Eminonu	1.93	38.2	A	A	B	B	C	A	A	A

## (2) Railway

Code	Project	Length (km)	Project Cost (US\$ Mil)	Economic Return	Demand	Congestion Alleviation	Land Use	Financial Return	Environment		Non-Economic Aggregated
									Natural	Social	
RL001	Bagcilar - Halkali Light Metro (Extension of C-5 line)	7.5	493.7	A	A	B	B	A	A	B	A
RL002	Tekstilkent - Istoc - Olimpiyat Koyu - Bahcesehir (Ispartakule) Metro (Extension of D-2 line)	12.0	1196.8	B	A	A	B	C	A	B	A
RL003	Umraniye - Bostanci Metro	14.0	1225.4	C	B	B	B	C	A	B	B
RL004	Kartal - Pendik (S. Gokcen Airport) - Tuzla Metro (Extension of C-3)	18.1	1261.3	B	B	A	A	C	A	B	A
RL005	Seyrantepe - Alibeykoy - Gop - Kazlicesme Metro	19.5	1186.8	B	B	A	B	B	A	A	A
RL006	Kartal D-100 - Kartal IDO Monorail	3.0	94.3	C	C	C	B	C	A	A	C
RL007	S. Gokcen Airport - Formula 1 Monorail	7.7	242.2	A	C	B	A	C	A	A	B
RL008	Darusafaka - Cayirbasi Metro (Extension of C-4 line)	2.7	193.5	A	C	C	C	C	A	B	C
RL009	4. Levent - Gultepe Mah. - Sanayi Mah. - Celiktepe Mah. Monorail	8.6	248.0	A	C	B	B	C	A	B	C
RL010	Besiktas - Sariyer Metro	14.1	787.0	C	C	C	C	C	C	C	C
RL011	Ispartakule - Ambarli - Yakuplu Metro	10.5	1197.0	B	A	A	A	C	A	B	A
RL012	Ispartakule - Kirac - Buyukcekmece - Silivri Suburban Railway	25.8	1319.2	A	A	A	A	A	C	B	A
RL013	Uskudar - Beykoz Metro	15.0	881.0	C	C	C	C	C	C	C	C
RL014	Ikiteilli Olimpiyat Koyu - Altinsehir Metro (Extension of C-6 line)	13.0	932.0	B	B	C	B	C	B	B	C
RL015	Ataturk Airport Access Rail (Extension of Marmaray railway)	2.5	160.0	C	C	C	B	C	A	A	C
RL017	Seyrantepe - Bosphorus Crossing - Umraniye metro	9.8	816.2	B	B	A	B	B	C	C	C
RL018	Topkapi - 2nd Bosphorus Bridge - Goztepe AGT	8.6	776.4	C	B	B	B	B	A	A	A
RL019	Kadikoy - Ibrahimaga - Esensehir - Sabiha Gokcen Airport Metro	36.8	2364.8	C	B	A	A	C	A	B	A
RL020	Bakirkoy - Beylikpuzu Extension	1.0	65.8	B	A	C	A	A	A	B	A
RL021	Silivri - Gumusyaka Extension	48.9	2200.0	A	B	A	A	B	B	B	A
RL022	Halkali - Hadimkoy Suburban Railway (Extension of Marmaray Project)(Electrification)	20.4	536.0	A	A	A	B	A	B	A	A

Note1: A; No impact is predicted,  
 B; some impact is predicted or unknown  
 C: serious impact is predicted

### Definition of Ranking

Criteria	Indicator	A	B	C	
Economic Return	Economic IRR	X>30%	30>X>15%	15%>X	
Demand	V-km/km	X>30000	30000-10000	10000<X	
Congestion Alleviation	$\Delta V/Q$	X>2%	2>X>1%	1%>X	
Contribution to realize Land Use Plan	-	Very Supportive	Fairly supportive	Not supportive	
Financial Return	Financial IRR	X>15%	15>X>5%	5%>X or No income	
Environmental Evaluation	Natural	(SEA result)	No impact (no mark)	Some impact (+)	Serious impact (++)
	Social	(SEA result)	No impact (no mark)	Some impact(+)	Serious impact (++)
Urgent Needs	-	Some reason of urgency			

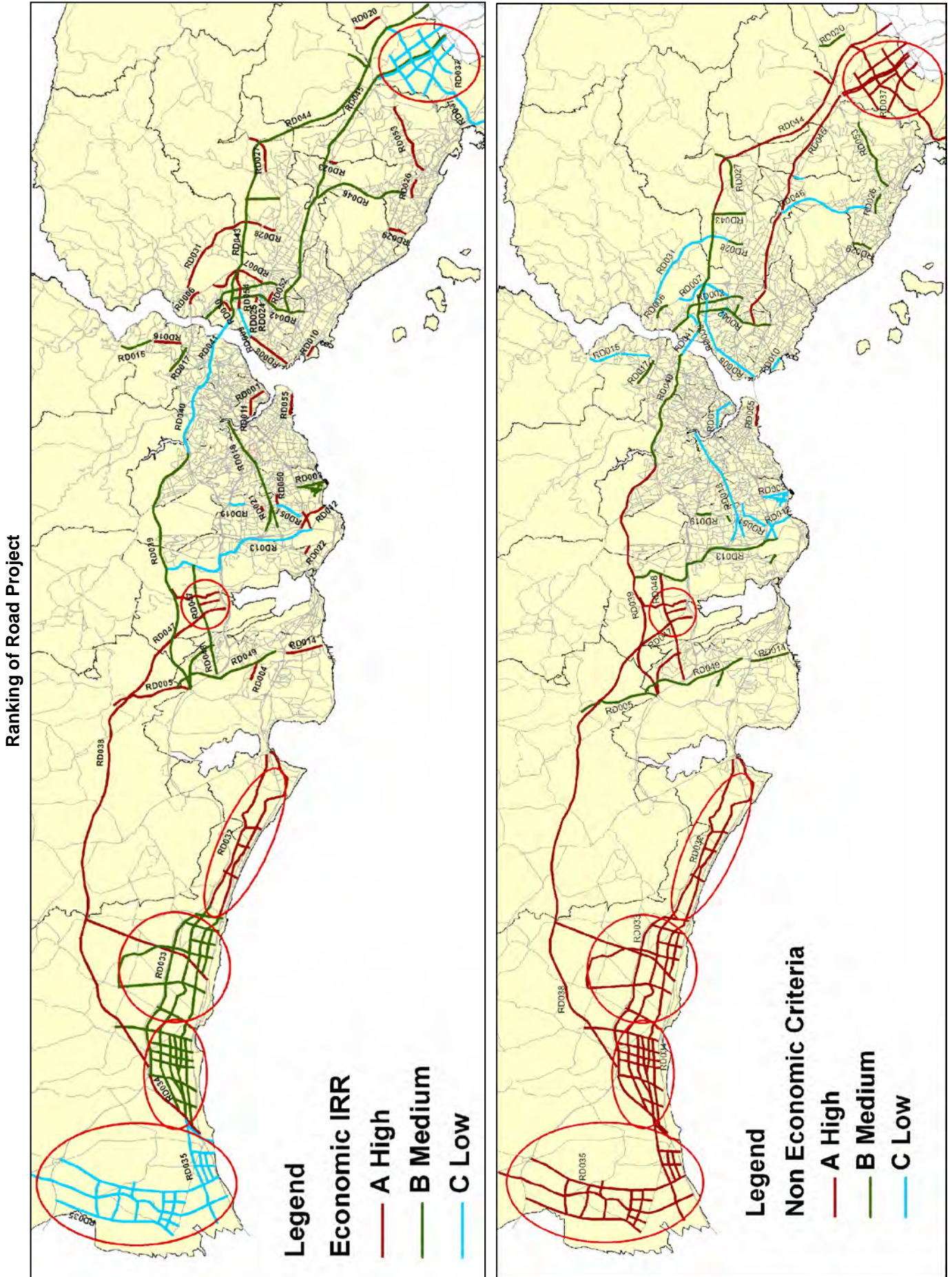








**Appendix 4 Project Location Maps**





**Road Development Schedule**



**Ranking of Railway Project**





**Railway Development Schedule**

