
































5. 要請対象道路の社会・環境上の課題












道路サイト上の障害物のリスト
List of Obstacles on the Initially Proposed Project Sites







(as of Apr 15 2008)













Road ID	Type of Obstacle						Photo		
	Wall	Fence	Farm land	Tree	Utility pole	Others	Photo 1	Photo 2	Photo 3
3			✓ 9 x 50m (Photo 1), 2 x 50m (Photo 2)						
4		✓ 10m (Photo 1)	✓ 9 x 70m (Photo 1)		✓ 2 utility poles (Photo 2)	✓ A goat crib (Photo 1), Concrete box for irrigation valve (Photo 3)			
8	✓ 10m (Photo 1)					✓ A concrete pillar (Photo 2), Concrete basement (2m x 1m) (Photo 2)			
10	✓ 20m (Photo 1)				✓ 2 utility poles (Photo 1)				
















Road ID	Type of Obstacle						Photo		
	Wall	Fence	Farm land	Tree	Utility pole	Others	Photo 1	Photo 2	Photo 3
12		✓ 100 m (Photo 1)	✓ 4 x 100m (Photo 2)	✓ ca. 10 trees (Photo 1)		✓ A plastic tank for irrigation (Photo 3)			
13		✓ 50m, 80m (Photo 1)	✓ 2 x 50m, 2 x 80m (Photo 1)	✓ 2 trees (Photo 1)		✓ 3 concrete boxes for irrigation valves (Photo 1), 2 concrete pillars (Photo 3)			
14	✓ 30m (Photo 1)					✓ Some part of house (Photo 1)			
15	✓ 10m (Photo 1)	✓ 50m (Photos 1 & 2)	✓ 9m x 80m (Photo 1)			✓ A gate (Photo 1)			
16	✓ 10m, 10m (Photo 1)	✓ 150m	✓ 10 x 150m, 5 x 150m, 5 x 150m (Photo 2)	✓ Some three trees, bushes (Photo 3)					







Road ID	Type of Obstacle						Photo		
	Wall	Fence	Farm land	Tree	Utility pole	Others	Photo 1	Photo 2	Photo 3
17				✓ A tree (Photo 1)		✓ A shed and clothes-drying place (Photo 1), a septic tank			
18			✓ 2m x 200m (Photo 1)						
19		✓ 50m (Photo 1), 30m (Photo 2)		✓ ca. five trees (Photo 3)					
20		✓ 20m (Photo 1)			✓ Abandoned house wall				
21			✓ 2 x 180m (Photo 1)						
















Road ID	Type of Obstacle					Photo			
	Wall	Fence	Farm land	Tree	Utility pole	Others	Photo 1	Photo 2	Photo 3
22	✓ 10m, 20m, (Photo 1)	✓ 60m (Photo 2), 80m	✓ 6 x 60m (Photo 2)	✓ 4 date trees (Photo 3)	✓ 1 utility pole	✓ 3 gates			
23			✓ 3 x 40m (Photo 1), 9 x 40m (Photo 2), 9 x 200m						
26		✓ 60m (Photo 1)	✓ Banana farm: 2 x 20m (Photo 2)						
29		✓ 20m							
34	✓ 10m cement block wall (Photo 1)	✓ 100m (Photo 2)	✓ 3m x 100m, 3m x 200m, 3m x 100m (Photo 3)	✓ 3 trees (Photo 2)					

Road ID	Type of Obstacle						Photo		
	Wall	Fence	Farm land	Tree	Utility pole	Others	Photo 1	Photo 2	Photo 3
36			✓ 2 x 140m (Photo 1)						
37		✓ 20m (Photo 1)	✓ 9 x 370m (Photo 1)						
42						✓ A container (Photo 1)			
43			✓ 3 x 200m (Photo 1)	✓ some 10 trees (Photo 2)					
44		✓ 5m (Photo 1)							

Road ID	Type of Obstacle					Photo			
	Wall	Fence	Farm land	Tree	Utility pole	Others	Photo 1	Photo 2	Photo 3
46		✓ 300m (Photo 1)	✓ 300 x 3m (Photo 2)	✓ ca. 4 trees (Photos 1 & 2)	✓ 1 pole (Photo 1)				
57		✓ 10m (Photo 1)	✓ 9 x 450m (Photo 2)						
58		✓ 150m, 10m (Photo 1)	✓ 10 x 150m	✓ Two big tall trees (Photo 1), ca. 15 fruit trees (Photo 2)		✓ A part of house, 5 x 2m (Photo 3)			
59			✓ 4 x 120m (Photo 1)						
61	✓ 2m (Photo 1)	✓ 20m (Photo 2)		✓ 2 palm trees (Photo 1)	✓ 2 poles (Photo 3)	✓ Concrete pillars (Photo 1)			

Road ID	Type of Obstacle					Photo			
	Wall	Fence	Farm land	Tree	Utility pole	Others	Photo 1	Photo 2	Photo 3
62			✓ 2 x 200m (Photo 1)						
63			✓ 8 x 140m (Photo 1)	✓ Cactus & bushes: 2 x 10m (Photo 2)		✓ An abandoned destroyed house (Photo 2)			
65			✓ 9m wide x 30m length						
66		✓ 50m (Photo 1), 60m (Photo 2)	✓ 50m x 5m (Photo 1), 3 x 60m, 10 x 20m	✓ 5 trees (Photo 2)		✓ A goat crib (Photo 3)			
67		✓ 50m (Photo 1)							

Road ID	Type of Obstacle						Photo		
	Wall	Fence	Farm land	Tree	Utility pole	Others	Photo 1	Photo 2	Photo 3
69					✓ 2 utility poles (Photo 1)				
71			✓ 9 x 40m (Photo 1)						
72		✓ 10m (Photo 1)							
73			✓ Greenhouse : 9 x 80m (Photos 1 & 2)						
74						✓ A crib for goats (Photo 1)			

Road ID	Type of Obstacle						Photo		
	Wall	Fence	Farm land	Tree	Utility pole	Others	Photo 1	Photo 2	Photo 3
76	✓ 20m (left side on Photo 1, right side on Photo 2)		✓ 9 x 40m (left side on Photo 1, right side on Photo 2)						
78			✓ 4 cribs at the maximum. 30 x 250m (Photo 1)			✓ 9 tents/shed (Photo 2), About forty Bedouin people live on the site (Photo 3)			
86	✓ ca. 200m (Photos 1 & 2)								
89		✓ 150m, 200m (Photo 1)	✓ 1 x 50m, 5 x 200m, 5 x 100m (Photos 1 & 2)						
Sidewalk 1		✓ 10m				✓ 2 sign posts			

Road ID	Type of Obstacle					Photo			
	Wall	Fence	Farm land	Tree	Utility pole	Others	Photo 1	Photo 2	Photo 3
Sidewalk 3		✓ 50m				✓ 2 poles for a roof			

6. 交通量調査の結果

現在のジェリコ市の交通状況を把握するため、交通量調査を実施した。

表－1 交通量調査の概要

No.	通り名	観測時間帯	調査日時
1	Al Qudes Street	24 時間調査	2008 年 7 月 29 日(火)
2	Ain Es Sultan Road	24 時間調査	2008 年 7 月 29 日(火)
3	Yafa Street	16 時間調査	2008 年 7 月 31 日(木)
4	Palestine Street	16 時間調査	2008 年 7 月 31 日(木)
5	Amman Street	16 時間調査	2008 年 8 月 3 日(水)
6	Hisham Palace Street	16 時間調査	2008 年 8 月 3 日(水)
7	Al Magtas Street	16 時間調査	2008 年 8 月 4 日(木)
8	Iron Factory Street	16 時間調査	2008 年 8 月 4 日(木)

各道路の 24 時間及び 16 時間の観測交通量調査結果を表-1 に示す。

表－2 24 時間及び 16 時間交通量

Street Name		Pedestrian	Bicycle /MC	Pickup	Passenger car	Mini Bus	Large Bus	Light Truck	H. Truck/ Trailer	Total Vehicles
24-Hour Counts										
Al Qudes St.	24-hour count	125	152	264	7,407	59	47	335	183	8,447
	16-hour count	101	131	199	5,964	42	45	294	170	6,845
Ain Ein Sultan St.	24-hour count	626	442	221	4,218	26	19	204	77	5,207
	16-hour count	523	382	183	3,731	25	19	190	72	4,602
16-Hour Counts										
Amman St.	16-hour count	104	157	204	5,255	51	53	135	74	5,929
	24-hour ADT*	129	182	237	6,526	72	55	154	80	7,317
Palestine St.	16-hour count	438	541	109	1,135	13	4	63	2	1,867
	24-hour ADT*	524	626	132	1,283	14	4	68	2	2,112
Hisham Palace St.	16-hour count	331	412	82	1,382	13	3	85	30	2,007
	24-hour ADT*	396	477	99	1,562	14	3	91	32	2,271
Iron Factory St.	16-hour count	44	19	13	140	-	1	29	116	318
	24-hour ADT*	53	22	16	158	-	1	31	124	360
Al Magtas St.	16-hour count	101	95	115	544	4	2	114	26	900
	24-hour ADT*	121	110	139	615	4	2	122	28	1,018
Yafa St.	16-hour count	354	241	12	568	6	7	43	14	891
	24-hour ADT*	424	279	14	642	6	7	46	15	1,008

* Average Daily Traffic (ADT) factored from traffic counts by using the percentage factor of 16-hour count to 24-hour ADT.

各道路の時間帯別交通量を図に示す。路線により異なる特性を見せているものの、全体的には 19:00 以降の夜間交通が多くみられた。各路線の傾向は以下の通りである。

- ・ 主要幹線道路の Al Qudes Street は、深夜を除き、各時間帯 200～300(台/時・片側)程度と高い。
- ・ Ain Es Sultan Street は、市中心部に位置しており、ピークが朝と夜間(19:00-23:00)にみられ、15:00～18:00 は両方向とも交通量が落ち込んでいる。
- ・ Palestine Street のピークは両方向とも 21:00-22:00、Yafa Street も 20:00-21:00 の夜間が高い。

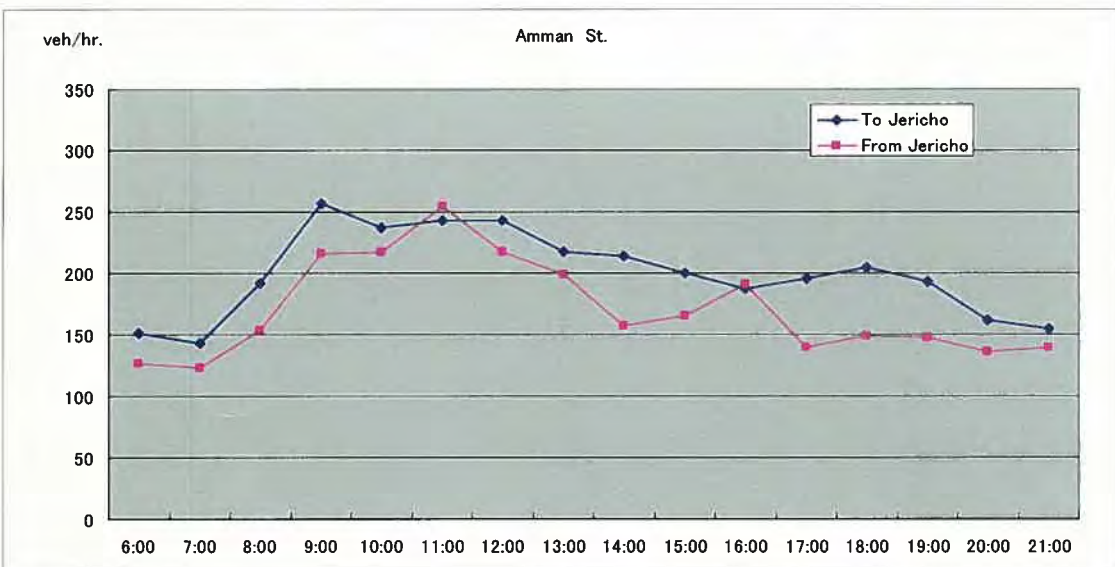
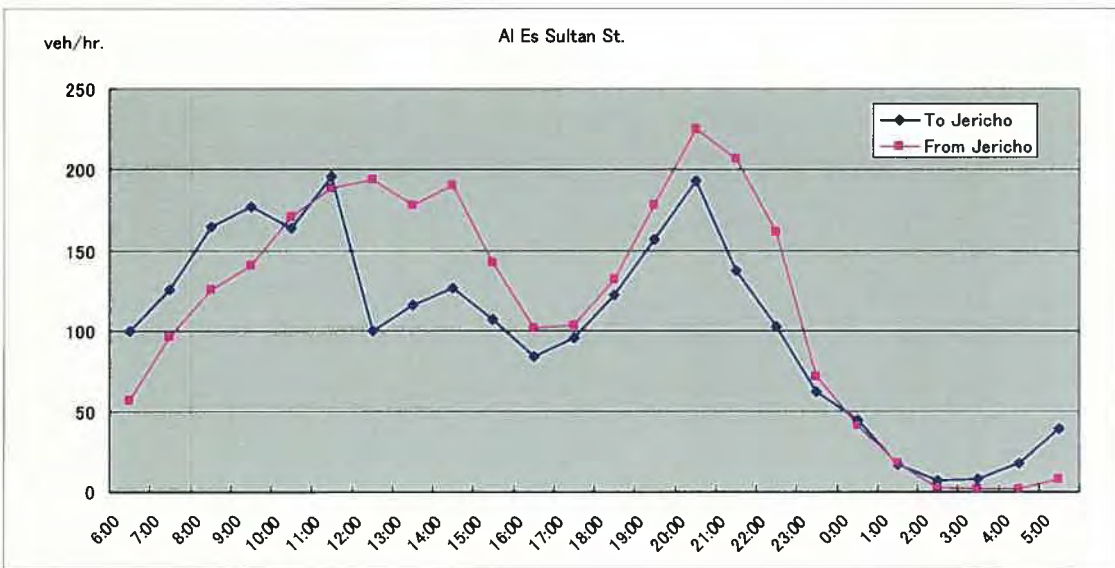
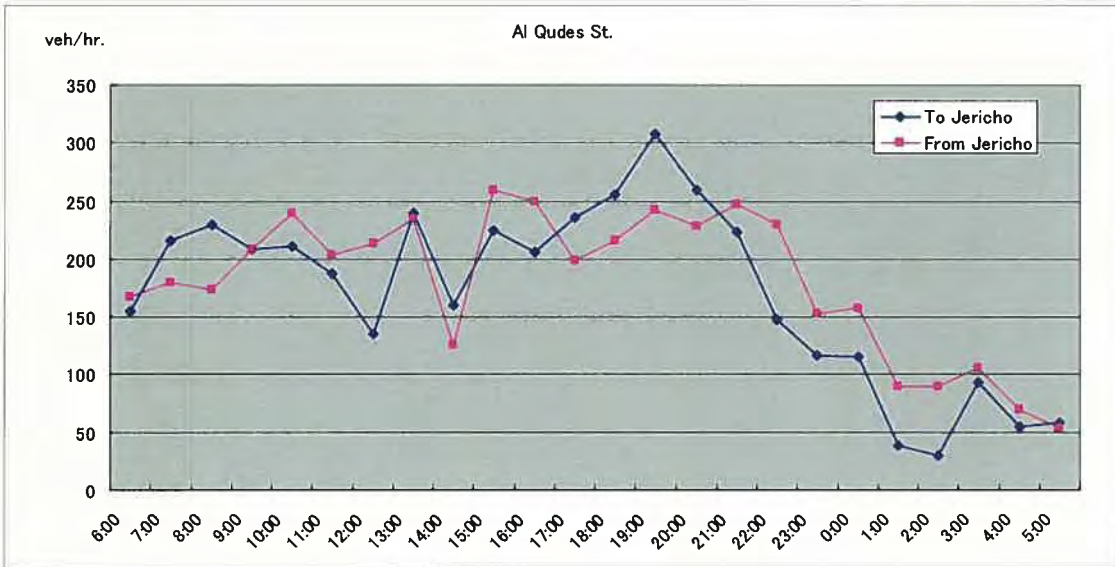


図-1 方向別時間交通量の変化 (1/3)

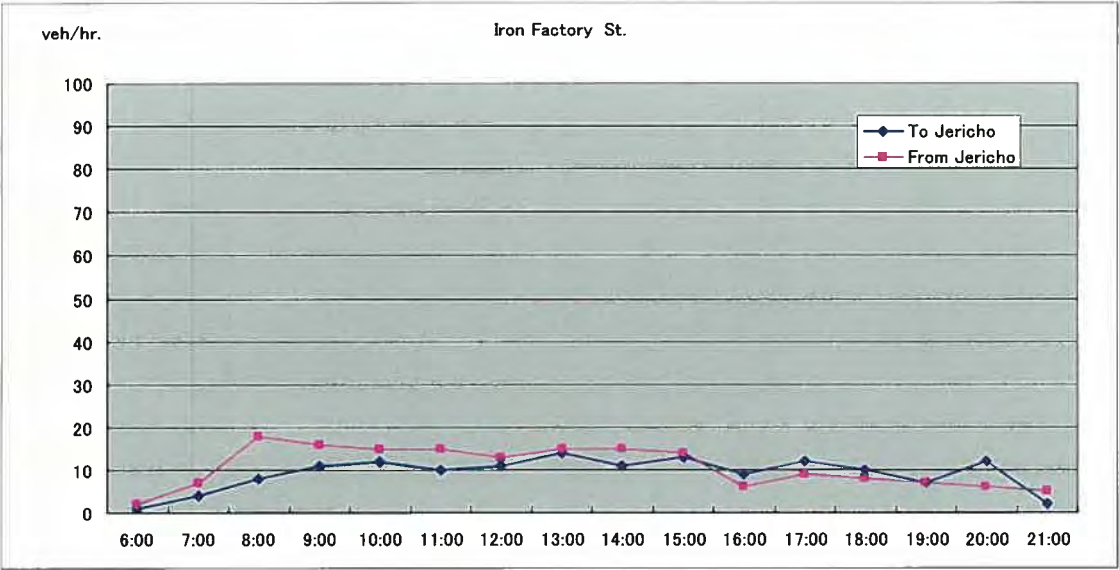
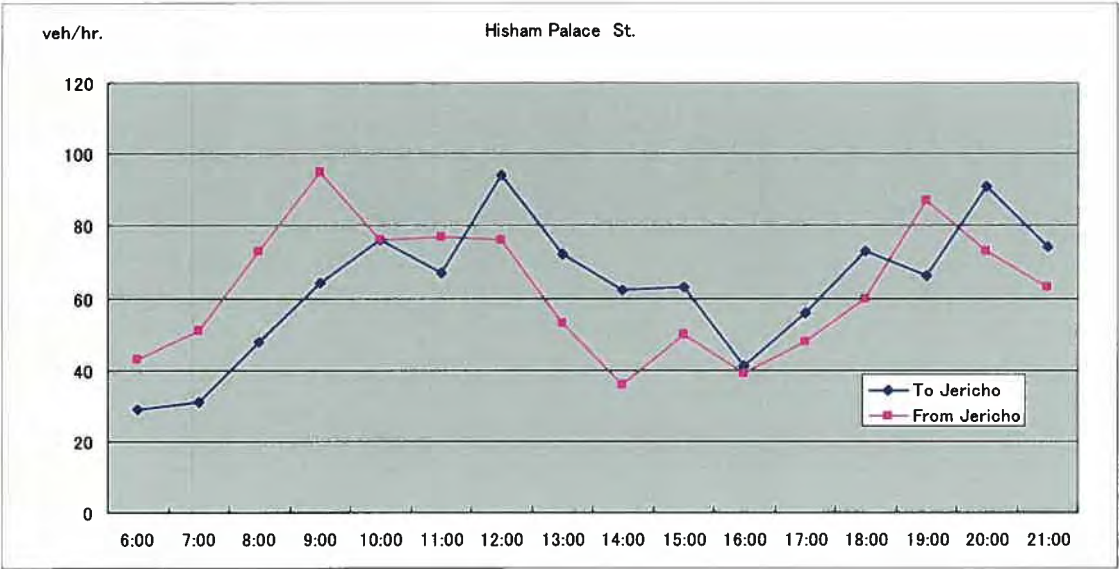
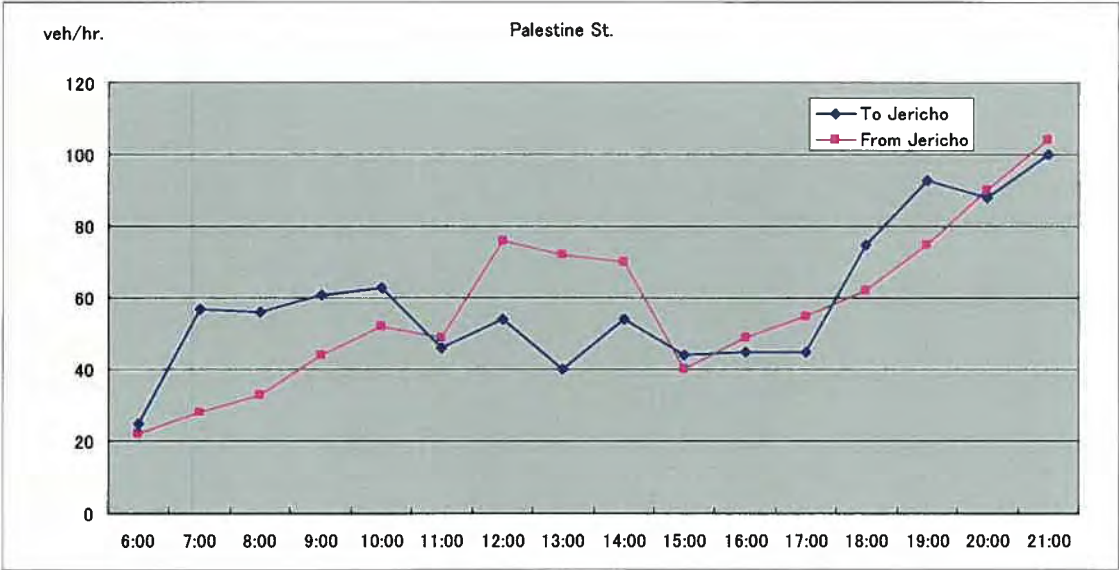


図-1 方向別時間交通量の変化 (2/3)

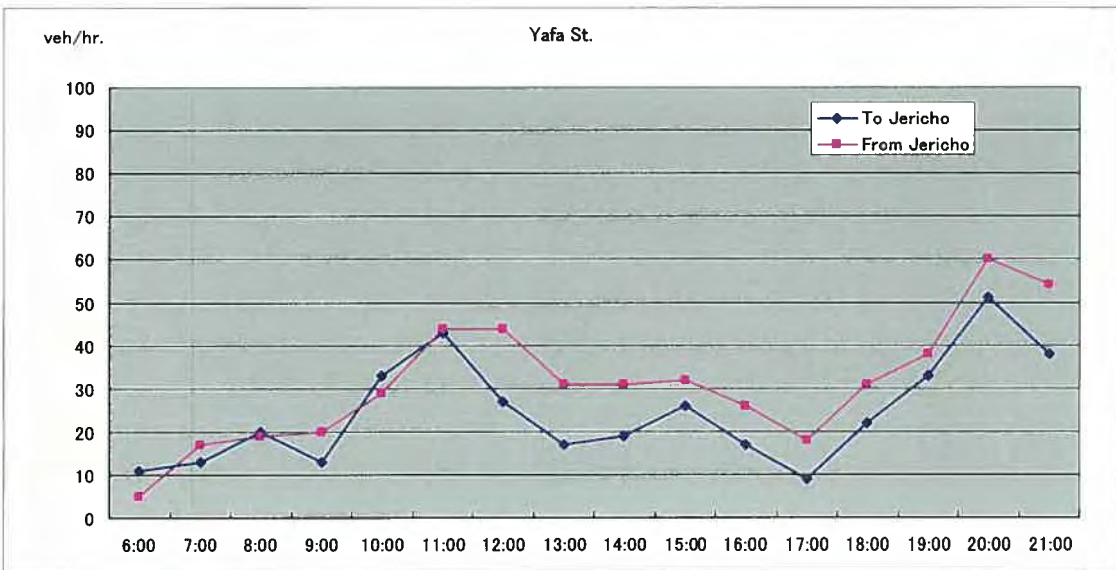
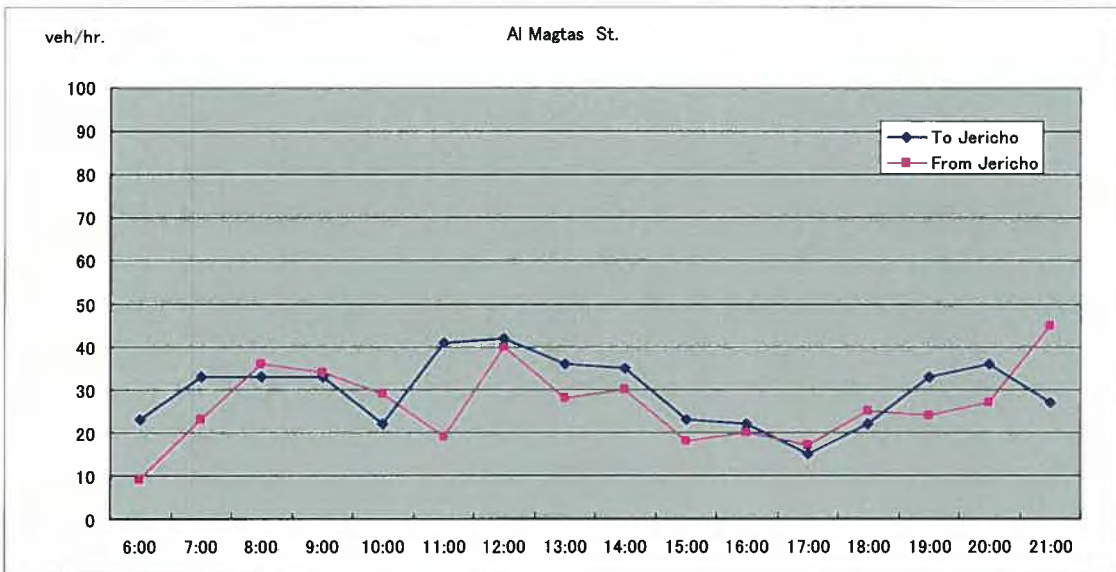


図-1 方向別時間交通量の変化 (3/3)

各道路の時間帯別の歩行者数を図-2 に示す。

- ・ 歩行者数の多い時間帯は夜間 19:00-22:00 であり、ピークは 20:00-21:00 となっており、逆に昼間は非常に少ない。このことから、歩行者と交通事故を削減するためには、歩道設置とともに街灯設置も重要であり、ドライバーが道路上の歩行者を認知できるようにすることが、事故の削減に繋がると考えられる。
- ・ また、市中心部に近い Ain Es Sultan Street では 10:00～13:00 にもピークがみられる。

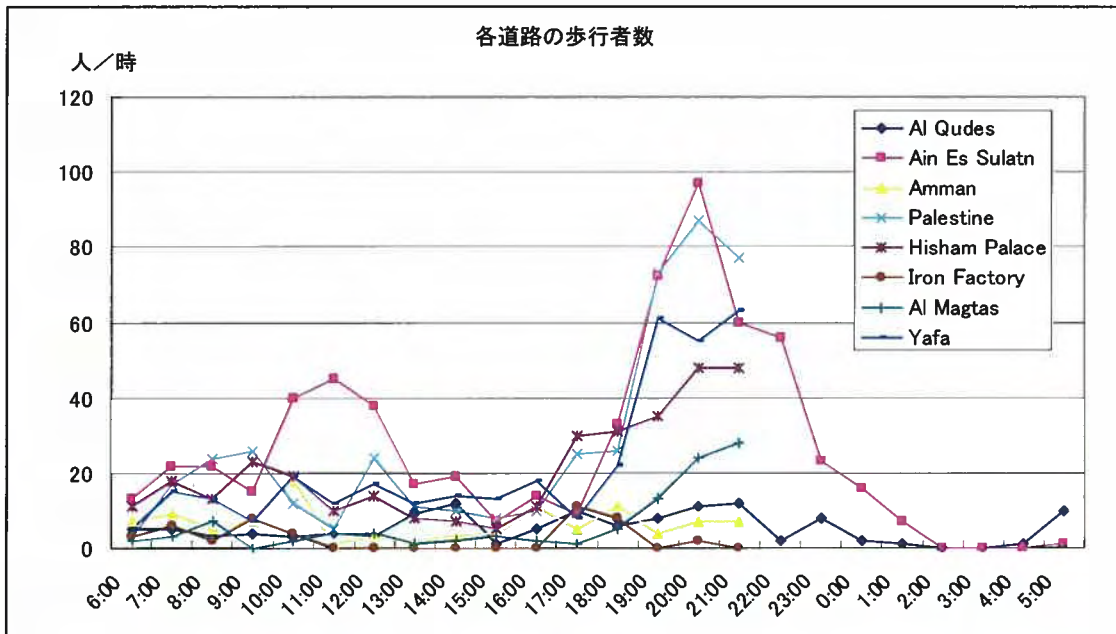


図-2 道路別時間歩行者数の変化

7. 事業費積算結果

A. 道路舗装・街灯・歩道の工事単価

Item	Description	Unit	Unit Price (US\$)
1	EARTH WORK		
(1)	Excavation Unclassified excavation and earth works including watercourses ; ditches ; and compaction and hauling the excavated materials	M3	5
(2)	Embankment Embankment by using selected materials	M3	8
(3)	Sub-grade Sub- grade layer (200mm) by using selected materials (topping) and preparing the sub- grade surface ready to receive the pavement structures and shoulders . Wadi Gravel	M3	9
(4)	Base-course Crushed aggregate base- course material class A, including , mixing , spreading on prepared sub- base or sub- grade , compacted and finishing a-thickness after compaction (200) mm , compacted in two layers.	M2	7
2	BITUMINOUS CONSTRUCTION		
(1)	Supplying spreading and compacting (6)cm thickness (after compaction) bituminous wearing course (3/4)' asphalt mix includes primcort and all tests required the mix should be according to direction of the Engineer	M2	16
(2)	Asphalt milling, (3) cm deep including cleaning and dumping the milled materials to sites approved by the municipality.	M2	2
3	STREET LIGHTING		
(1)	Electric Cable Supply, install, connect, commission and testing the cables with flexible conduits under the ground complete ready for work with all accessories according to engineer's approval. XLPE (5x16 mm2) cables.	LM	25
(2)	Lighting Pole Supply, install, connect, commission and testing the following lighting poles made of octagonal galvanized steel minimum 4 mm thick with its base and casting needed concrete (one cube) and fixing the pole with all protections devices. The po	No	1,700 2,000
(3)	Street Lighting Fixtures Supply, install, connect, commission and testing street lighting fixtures with tubs, starters, bulbs, capacitors, ballasts, wires (4 mm2) and all what is necessary ready for work according to engineer's approval. Price includes o	No	500
(4)	Feeder Pillar Supply, install, commission, labeling and testing feeder pillar including the body made of 2 mm thick galvanized iron over painted with necessary circuit breakers, photocell, timer, KWHM, Contractors with all accessories ready for work accor	No	1,200
4	SIDE WALK		
(1)	supply and install the curbstone including the layor of base course 15cm under the curbstone and also include the concrete works behind and under the curbstone as well as clearing and leveling works.	LM	22
(2)	supply and construct interlocking block including the layor of base course 15cm. The work will include the compaction according to the engineer instruction	M2	25

B. 道路舗装・街灯・歩道の建設費

1. Asphalt Pavement

Ranking	Project Road No.	Street Name	Length (m)	Width (m)	Cost Million US\$	Evaluation
1	5	Ibn Al Nafis	1,030	9	0.173	B
2	35	Al Forosia Street	1,280	12	0.229	C
3	16	Al Malga Street	440	9	0.074	D
4	14	Hashim Balou	350	9	0.059	D
			50	5	0.007	
5	24	Al Kutafi	400	9	0.067	D
6	67	Abu Al Mounther	320	9	0.054	D
			80	5	0.011	
7	23	Hammad	370	8	0.060	D
8	57	Najuan Kaabna	360	9	0.060	D
9	42	Al Tahan	330	9	0.055	D
10	10	Baghdad	290	8	0.047	D
			30	5	0.004	
11	25	Al Burtukal	230	9	0.039	D
12	1	Al Furat	240	9	0.040	D
13	21	Al Shikh Harb	210	9	0.035	D
14	55	Isa Abu Rahmih	200	8	0.033	D
15	44	Musa Al Bakar	190	9	0.032	D
16	9	Fouad Hijazi	180	9	0.030	D
17	74	Bilal	180	9	0.030	D
18	28	Al Mushasha	135	4	0.015	D
19	75	Yaghi	130	9	0.022	D
20	3	Al Namari	115	9	0.019	D
21	71	Shahrazad	540	9	0.091	E
22	64	Tretement Center Street	500	9	0.084	E
23	36	Al Shalabi	270	9	0.045	E
24	38	Eskan Jericho Municipality	500	9	0.084	E
25	49	Al Salman	290	9	0.049	E
26	50	Abu Arab	290	9	0.049	E
27	51	Tayseer Bali	280	9	0.047	E
28	48	Abass Al Awar	460	9	0.077	F
29	62	Edkadik	230	8	0.037	F
30	77	Al Halawani	140	9	0.024	F
31	54	Abdel Hafith Abu Sarah	130	9	0.022	F
32	52	Aber Ekrimawi	120	9	0.020	F
33	56	Mahmoud Abu Srou	300	9	0.050	F
34	59	Al Karboutly	270	4	0.029	F
35	45	Tareq Zaki	260	9	0.044	F
36	40	Khalid Amar	200	9	0.034	F
37	91	Al Sahouri	160	7	0.025	F
38	6	Al Tholam	150	9	0.025	F
39	11	Al Yazuri	150	6	0.022	F
40	30	Yousif Abuodi	150	3	0.012	F
41	33	Abu Zaitun	140	4	0.015	F
42	32	Khadigeh Hijazi	90	4	0.010	F

2. Street Lighting

Ranking	Project Road No.	Street Name	Length (m)	Cost Million US\$	Evaluation
1	6	Amman Street	570	0.106	A
2	5	Al Magtas Street	2,200	0.178	A
3	13	Bisan Street	2,000	0.162	A
4	12	Hisham Palace Street	680	0.056	A
5	4	Mohammad Al Dora Street	1,060	0.088	B
6	2	Mikhael Naema	500	0.020	B
7	3	Al Manar	630	0.037	B
8	16	Bilal	370	0.027	B
9	9	Dimashq	270	0.024	B
10	1	Al Shuhada Street	820	0.068	C
11	17	Gaza	330	0.029	D
12	10	Ali Bin Abi Talib	250	0.017	D
13	8	Al Furusia	1,280	0.050	E
14	15	Al Nile	790	0.065	E
15	14	Araif Al Aref	870	0.072	E
16	7	Al Qadesia	1,200	0.212	F
17	11	Bshara Khuri	0	-	
Total			13,820	1.211	

3. Sidewalk

Ranking	Project Road No.	Street Name	Length (m)	Cost Million US\$	Evaluation
1	4	the Library Street	250	22,000	A
2	6	Yafa Street	480	42,000	B
3	3	Palestine Street	600	52,000	B
4	2	Alkedawi Street	1,090	94,000	B
5	7	Ministry of Education Street	450	39,000	B
6	5	the Hospital Street	780	67,000	C
7	1	Hisham Palace Street	1,430	124,000	D
Total			5,080	440,000	

43	2	Abu Raausha	780	7	0.124	F*
44	39	Hisham Baluo	135	9	0.023	F*
45	70	Al Dahia	860	7	0.137	F*
46	7	Omar Bin Al Khatab	220	9	0.037	F*
47	31	Sultan Abu Gazaleh	170	5	0.023	F*
48	47	Zain Al Mughrabi	100	8	0.016	F*
49	18	Abu Faris Esed	400	7	0.064	F*
50	13	Arif Al Arif	870	9	0.146	G(C)
51	72	Hisham Palace	920	9	0.155	G(C)
52	26	Hitham Suti	570	6	0.084	G(D)
53	4	Yabrodi Dinameter	460	7	0.073	G(D)
54	43	Al Moughrabi Qasem	210	9	0.035	G(D)
			150	4	0.016	
55	58	Ibrahim Al Hilou	280	7	0.045	G(D)
56	22	Al Sakakini	310	9	0.052	G(D)
57	15	Al Hadad	180	8	0.029	G(D)
58	17	Abu Aljaj	210	9	0.035	G(D)
59	20	Al Satafi	90	9	0.015	G(D)
60	69	Al Douk	580	9	0.097	G(D)
61	73	Bshara Khuri	80	9	0.013	G(D)
62	12	AL Baiad	130	4	0.014	G(D)
63	66	Mohamad Yousif Auajnih	170	9	0.029	G(E)
64	34	Rasmieh Al Owaiwi	250	9	0.042	G(F)
65	63	Abu odeh Al Mughrabi	220	4	0.024	G(F)
66	61	Fayez Al Muakit	200	4	0.022	G(F)
67	76	Dalal Al Mughrabi	100	9	0.017	G(F)
68	46	Khader Darwish	320	9	0.054	G(F)
69	29	Ishaque Balu	150	3	0.012	G(F)
70	8	Al Mimi	140	3	0.011	G(F)
71	19	Abu Earam	200	5	0.027	G(F)
72	65	Salah Abdo	150	9	0.025	G(F)
73	60	Abed Al raouf Al Namari	200	8	0.033	G(F)
74	53	Small Entrances	310	3	0.025	F**
75	41	Ahmed Shatat	30	3	0.002	F**
76	27	Al Samarat	30	4	0.003	F**
77	68	Vegitable Market	-	-	0.100	F**
78	37	Abed Elkader Al Husini	950	9	0.499	F**
79	78	Iron Factory Street	2,100	20	1.843	G(F**)
Total			25,985		6.097	

1-2 Rehabilitaion

Ranking	Project Road No.	Street Name	Length (m)	Width (m)	Cost Million US\$	Evaluation
1	79	Al Qudes Street	500	20	0.626	A
2	82	Ein Es Sultan	500	20	0.126	A
3	84	Dumping Silte Street	1100	9	0.185	A
4	85	Yafa	480	9	0.043	B
5	80	Khalid Bin Al Walid	300	8	0.022	B
6	81	Tounis	130	8	0.009	B
7	90	Saaid Sayel	580	8	0.042	E
8	83	Al Yarmouk	420	8	0.030	E
9	88	Al Fityani	130	8	0.009	E
10	89	Khawla Bnt Al Azwar	380	9	0.064	E
11	86	Aum Al Rashrash	170	8	0.019	E
12	87	Batari Factory Street	300	9	0.050	F
Total			4,990		1.225	

8. 収集資料リスト

調査名・パレスチナ暫定自治政府 ジェリコ市内生活道路整備計画 事前調査 収集資料リスト

番号	名称	形態 (図書・ビデオ・地図・写真等)	オリジナル・コピー	発行機関	発行年
1	The article description for road	道路に関する条項 (アラビア語)	コピー	Ministry of Public Works and Housing	
2	Arternael Photo of Jericho City	航空写真	電子データ		2006
3	Palestinian Environmental Law	パレスチナ環境法 (英語)	電子データ	Palestinian National Authority	1999
4	The Palestinian Environmental Assessment Policy-April 2000	パレスチナ環境評価規定 (英語)	電子データ	Ministry of Environmental Affairs(現在のEQA)	2000
5	Environmental Approval Application Form	環境許可申請書書式(アラビア語、一部英語翻訳付き、本来パレスチナ環境評価規定に付属するもの)	コピー	Ministry of Environmental Affairs(現在のEQA)	2000
6	Environmental Standard for Air Pollution Emissions from Stationary Sources	パレスチナの定点起源の大気汚染物質排出に関する環境基準(アラビア語、一部英語翻訳付き)	オリジナル	Palestinian Standards Institution (PSI)	不明
7	Environmental Standard for Outdoor Noise	パレスチナの騒音に関する環境基準 (アラビア語、一部英語翻訳付き)	オリジナル	Palestinian Standards Institution (PSI)	不明
8	Environmental Standard for Industrial Effluent Wastewater	パレスチナの産業排水に関する環境基準 (アラビア語、一部英語翻訳付き)	オリジナル	Palestinian Standards Institution (PSI)	不明
9	Land use data for GIS	ジェリコ市内の土地利用状況を示すGISソフトウェア用データ(Shapefile、解析上のデータ)	電子データ	Engineering Department, Municipality of Jericho	2008
10	Cadastral Maps for proposed road sites	対象道路を示す公図	地図	Engineering Department, Municipality of Jericho	2008
11	Law of Planning Cities and Villages and Constructions (Law No. 79, 1966)	都市計画のための私有地収用に関するパレスチナの法律 (アラビア語、一部英語翻訳)	コピー	Palestinian National Authority	1966
12	Letter from the Ministry of Tourism and Antiquities to the Municipality of Jericho	観光史跡省からジェリコ市長宛に送られた公文書(No. 26, 60, 65, 72の道路周辺には貴重な史跡があるため、委員会が調査をすることを通告、アラビア語および英語翻訳)	公文書	Jericho Office, Ministry of Tourism and Antiquities	2008
13	Palestine Socio-Economic Profile (PASSIA Diary)	パレスチナの社会経済情報 (英語)	コピー	Palestinian Academic Society for the Study of International Affairs (PASSIA)	2008
14	Daily rainfall data at Jericho Station_2005-2008	ジェリコ市の降水量データ (英語)	電子データ	Meteorological Office, Ministry of Transport	2008