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資料－1　調査団員・氏名

(1)　現地調査

現地調査の調査団員の構成は、以下のとおりである。

氏　　名	担　　当	所　　属
勝田　穂積	総　括	国際協力機構 国際協力専門員
福原　さおり	調査計画管理	国際協力機構 経済基盤開発部 平和構築・都市・地域開発グループ 平和構築・都市・地域開発第一課
越智　裕	業務主任／港湾計画	株式会社エコー
山本　雄平	自然条件調査	株式会社エコー
山田　俊夫	港湾施設計画	株式会社ドラムエンジニアリング
酒井　修二	施工計画／積算	株式会社エコー
畠山　祐二	環境社会配慮	有限会社プロジェクト環境
一之瀬　政男	組織運営管理	一般財団法人国際臨海開発研究センター

(2)　概要説明調査

概要説明現地調査の調査団員の構成は、以下のとおりである。

氏　　名	担　　当	所　　属
勝田　穂積	総　括	国際協力機構 国際協力専門員
越智　裕	業務主任／港湾計画	株式会社エコー
山田　俊夫	港湾施設計画	株式会社ドラムエンジニアリング
一之瀬　政男	組織運営管理	一般財団法人国際臨海開発研究センター

資料－2　調査行程

(1)　現地調査

日順	月	日	JICA団員		コンサルタント団員					
			勝田穂積	福原さおり	越智　裕	山田俊夫	一之瀬政男	畠山祐二	山本雄平	酒井修二
			(a)総括	(b)計画管理	(a) 業務主任/港湾計画	(c) 港湾施設設計	(f) 組織運営管理	(e) 環境社会配慮	(b) 自然条件調査	(d) 施工計画/積算
1	3/7	木			成田→シンガポール　シンガポール→					
2	3/8	金			→ブリスベン　ブリスベン→ホニアラ					
3	3/9	土			港湾活動及び施設状況視察					
4	3/10	日			団内会議、港湾活動及び施設状況視察					
5	3/11	月			SIPA表敬及びインセプション･レポート説明					
					JICAソロモン表敬及びインセプション･レポート説明、港湾施設踏査（国際埠頭、国内埠頭）、背後主要道路視察					
6	3/12	火			現地調査及び資料収集				再委託業者との契約、打合せ（測量範囲の現地確認）	
7	3/13	水								
8	3/14	木								
9	3/15	金	ブリスベン→ホニアラ		現地調査及び資料収集、交通量調査打合せ					
10	3/16	土	団内打合せ、現地踏査							
11	3/16	日	団内打合せ（ミニッツ案）・資料整理							
11	3/17	日	コンテナ船見学・船長ヒアリング				資料整理			
			資料整理							
12	3/18	月	SIPA 全体会議及びミニッツ協議、インフラ開発省表敬及びミニッツ協議							
			ミニッツ最終調整		コンテナ船見学・船長ヒアリング					
13	3/19	火	ドナー関係者への説明（ADB、AusAID、PIAC他）				コンテナヤード荷役状況調査	環境関連資料収集	再委託調査調整 自然条件関連資料収集	
			ミニッツ協議・署名、日本大使館表敬・報告							
14	3/20	水	報告資料作成等		SIPAコンサルタントヒアリング 関連資料収集、港長ヒアリング					
15	3/21	木	ホニアラ→ブリスベン							
16	3/22	金			国内埠頭用地踏査、交通量調査打合せ					
17	3/23	土			資料整理、背後域状況調査					
18	3/24	日								
19	3/25	月			交通量調査視察、資料整理、背後域状況調査		コンテナヤード状況調査 資料収集	環境関連資料収集	再委託調査監理 自然条件関連資料収集	
20	3/26	火			交通量調査視察、SIPAヒアリング、港湾統計資料整理					
21	3/27	水			SIPA打合せ、コンテナ船見学・船長ヒアリング					
22	3/28	木			ステークホルダー会議					
23	3/29	金			資料整理、現地踏査			ホニアラ→ブリスベン ブリスベン→	再委託調査監理、資料収集	
24	3/30	土			交通量調査視察、資料整理		資料整理	→シンガポール シンガポール→成田		
25	3/31	日			資料整理、団内会議			環境カテゴリ協議・決定（JICA東京本部）	資料整理、団内会議	
26	4/1	月			資料整理、現地踏査、施設配置計画立案					
27	4/2	火			現地確認調査、港長との計画内容に係わる打合せ		資料解析･計画立案		再委託調査監理、資料収集	成田→シンガポール シンガポール→
28	4/3	水			船社代理店ヒアリング 資料収集･解析	交通量調査の資料とりまとめ	船社代理店ヒアリング 資料収集･解析			→ブリスベン→ホニアラ SIPA質問書説明
29	4/4	木			JICAソロモン中間報告 資料収集･解析		資料解析･計画立案		JICAソロモン帰国報告 ホニアラ→ブリスベン→	JICAソロモン表敬 SIPA打合せ、資料収集
30	4/5	金			資料解析･計画立案				→シンガポール シンガポール→成田	現地建設業者調査、見積依頼
31	4/6	土			資料整理、現地報告資料作成					現地踏査・再委託調査監理
32	4/7	日			資料整理、団内会議					資料整理、団内会議
33	4/8	月			資料整理、現地報告資料作成		資料解析･計画立案			現地建設業者調査、 再委託業務監理
34	4/9	火								
35	4/10	水			資料整理、現地報告資料作成					
36	4/11	木						成田→シンガポール シンガポール→		
37	4/12	金			SIPA中間報告、Technical Note協議・署名、JICAソロモン報告			→ブリスベン→ホニアラ JICAソロモン報告		SIPA中間報告、 JICAソロモン報告
38	4/13	土			資料整理、団内会議					資料整理、団内会議
39	4/14	日			ホニアラ→ブリスベン　ブリスベン→			スコーピング		現地建設業者調査、 再委託業務監理
40	4/15	月			→シンガポール　シンガポール→成田					インフラ状況調査
41	4/16	火						環境関連団体へのヒアリング		
42	4/17	水						環境省打合せ、SIPA打合せ		関連法規調査
43	4/18	木						環境関連団体へのヒアリング		
44	4/19	金						資料整理 報告資料作成		資料整理 再委託調査監理
45	4/20	土								
46	4/21	日						環境省打合せ、SIPA打合せ		見積書・ 提出依頼書類の回収
47	4/22	月						SIPA報告・打合せ JICAソロモン報告		SIPA報告・打合せ JICAソロモン報告
48	4/23	火						ホニアラ→ブリスベン ブリスベン→		ホニアラ→ブリスベン ブリスベン→
49	4/24	水						→シンガポール シンガポール→成田		→シンガポール シンガポール→成田
50	4/25	木								
51	4/26	金								

(2) 概要説明調査

日順	月 日		JICA団員	コンサルタント団員		
			勝田穂積	越智 裕	山田俊夫	一之瀬政男
			(a) 総 括	(a) 業務主任/港湾計画	(c) 港湾施設設計	(f) 組織運営管理
1	10/1	火	成田→シンガポール シンガポール→			
2	10/2	水	→ブリスベン ブリスベン→ホニアラ JICAソロモン表敬及び準備調査報告書(案)説明			
3	10/3	木	SIPA表敬、準備調査報告書(案)説明・協議			
4	10/4	金	財務省次官及びインフラ開発省次官表敬及び準備調査報告書(案)説明・協議 団内打合せ			
5	10/5	土	団内打合せ、現地踏査			
6	10/6	日	ホニアラ→ブリスベン ブリスベン→	団内会議、資料作成		
7	10/7	月	→シンガポール シンガポール→成田	現地踏査、テクニカルノート(T/N)協議、資料作成		
8	10/8	火		SIPAへの準備調査報告書(案)の詳細説明・協議、T/N協議		
9	10/9	水		日本大使館表敬・報告、JICAソロモン報告 現地コンサルタントヒアリング、T/N署名、資料作成		
10	10/10	木		資料作成 ホニアラ→ブリスベン ブリスベン→		
11	10/11	金		→シンガポール シンガポール→成田		

資料－3　関係者（面談者）リスト

(1) ソロモン諸島国官公庁

1) Ministry of Infrastructure Development (MID)

Mr. Moses Soajonga Virivolomo	Permanent Secretary
Mr. Jimmy Nuake	Director, Civil Engineering

2) Ministry of Finance and Treasury

Mr. Shadrach Fanega	Permanent Secretary

3) Solomon Islands Port Authority (SIPA)

Mr. Glyn Joshua	General Manager (AG), Director, Corporate Service"
Mr. Ronald Ivupitu	Director Engineering
Ms. Bridget Wafuni	Management Accountant
Mr. Leonald Bava	Operation Manager (AG)
Mr. Ashley Hangio	Chief Security
Mr. Hugo John Bugoro	Operation Manager
Mr. Romeo Vilaka	Property Officer
Mr. Santus Siota	Project Engineer
Capt. Judah Kulabule	Harbour Master
Capt. Vitale Tangisi	Harbour Pilot
Mr. Reginald Alatala	Workshop Manager
Mr. George Rausi	Director Finance
Mr. Benny Legua	ICT Manager
Mr. Dean Pitu	Statistic Officer
Mr. Ken Grossmith	Member of Board
Mr. William Berile	CEO

4) Ministry of Natural Resource

Mr. Alison K. P.	Principal Seismology Officer, Seismology Section

5) National Disaster Management Office

Mr. Jonathan T. F.	Deputy Director

6) Environmental and Conservation Division, Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM)

Mr. Tia Masolo	Deputy Director of Environment
Mr. Edward Jonathan Danitofea	Senior Environment Officer

7) Solomon Water

Mr. Silas Talosui	Team Leader, Network Maintenance

8) Honiara City Council

Mr. George Titiulu	Principal Health Inspector
Ms. Christine Ouahikeri	Health Inspector
Ms. Mercy Iilv Nunva	Environmental Health Officer

(2) 国際機関

1) Asian Development Bank (ADB)

Mr. Paula Baleilevuka	Director

2) Australian Agency for International Development (AusAID)

Mr. Scott McNamara	Senior Development Program Specialist

3) Pacific Infrastructure Advisory Centre (PIAC)

Mr. John Austin

Mr. Jan Willen Overbeek

4) World Fish Center (WFC)

Dr. Anne-Maree Schwarz	Scientist
Mr. Waghon Lalao	Business Manager, Corporate Service Division

5) World Wide Fund for Nature (WWF)

Mr. Duddley Marau	Finance manager

(3) 民間会社

1) iBusiness

Ms. Grace NG	CEO
Mr. Jonathan Foong	Consultant

2) iPacific Frontieers Limited

Dr. Deogratias Harorimana	CEO & Chairman
Mr. Salome Kwaiga	Chief Operating Officer

3) Beca

Mr. Graeme Roberts	Technical Director
Mr. John Youdale	Project Director
Mr. Alex Wong	Civil Engineer
Ms. Deborah Robertson	Senior Planner

4) Greater Bali Hai

Mr. Alfred Chan, Capt.	Ship Master, Coral Islander
Mr. Gideon P. Avengoza, Capt.	Ship Master, Tropical Islander

5) Swire Shipping

Capt. Nigel R. S. Prosser	Ship Master, High Land Chief
Capt. Jeff Liew K. F.	Ship Master, Kwangsi

6) Tradco

Mr. Gerald Stenzel	Managing Director

7) Kitano Construction

Mr. Fujii Yasushi	Project Manager

8) Solomon Kitano Mendana Hotel

Mr. Masao Yamagata	General Manager

9) Solomon Sheet Steel Ltd.

Mr. Jason Lee	Managing Director

10) DALGRO (SI) L td.

Mr. Keith Douglas	General Director
Mr. Reginald Douglas	Managing Director
Mr. Armando Marco	Site Manager

11) Nofokava Construction Ltd.

Mr. Francis Nori Nofokava	Managing Director

12) Hatanga Limited

Mr. Jeremy Barllett	Manager

(4) 日本国関係者

1) 在ソロモン日本国大使館

中嶋　敏	大使
岩撫　明	前大使
小幡ひとみ	専門調査員

2) JICA ソロモン諸島支所

臼井太二	支所長
瀧下良信	前支所長
ラカ直子	企画調査員

資料－4　討議議事録(M/D)

(1) 現地調査（2013 年 3 月 18 日）

Minutes of Meetings
on the Second Preparatory Survey for Outline Design
on
the Project for Improvement of Honiara Port Facilities
in Solomon Islands

Agreed upon
Between the Government of Solomon Islands
And Japan International Cooperation Agency

Referring to the result of Preparatory Survey in September 2011, the Government of Japan (hereinafter referred to as "the GOJ") decided to conduct a Second Preparatory Survey for Outline Design on the Project for Improvement of Honiara Port Facilities in the Solomon Islands (hereinafter referred to as "the Project") and entrusted the survey to the Japan International Cooperation Agency (hereinafter referred to as "JICA")

JICA dispatched the Second Preparatory Survey Team for the Project (hereinafter referred to as "the Team") to the Solomon Islands, headed by Mr. Hozumi Katsuta, Advisor, JICA, and conducted the survey from March 14 to March 21, 2013.

The Team held a series of discussions with the officials concerned of the Government of Solomon Islands (hereinafter referred to as "the SIG") and conducted a field survey in the Project area.

As a result of the discussions and field survey, both sides have confirmed the main items described in the attached sheets. It should be noted that implementation of the Second Preparatory Survey does not imply any decision or commitment by JICA to extend its grant for the Project at this stage.

Honiara, 18 March, 2013

Moses Virivolomo
Permanent Secretary
Ministry of Infrastructure Development
Solomon Islands

Hozumi Katsuta
Leader
Second Preparatory Survey Team
Japan International Cooperation Agency

(Witness by)

Glyn Joshua
Acting General Manager
Solomon Island Ports Authority
Solomon Islands

Shadrach Fanega
Permanent Secretary
Ministry of Finance and Treasury
Solomon Islands

ATTACHMENT

1. Objective of the Project

The objective of the Project is to improve the Honiara Port facilities.

2. The Proposed Project Site

Honiara Port in Point Cruz, as shown in Annex 1.

3. Responsible and Implementing Organizations

3-1.The responsible organization is the Ministry of Infrastructure Development

3-2.The implementing organization is the Solomon Island Ports Authority (SIPA)

3-3.The organization chart of SIPA is as shown in Annex 2

4. Items Requested by the SIG

4-1. The components of the Project requested by the SIG for Improvement of Honiara Port Facilities

No.	Items	Description	Quantity
1	International Wharf		
(1)	Sea Wall	Steel sheet pile wall with re-concrete superstructure	150 m
(2)	End Revetment	Steel sheet pile wall and rubble mound revetment	125 m
(3)	Dredging and Filling	-11m and fill for container yard	17,000 m^3
(4)	Mooring Dolphin	Steel pile and grating catwalk	2 nos.
(5)	Removal of Existing Dolphin		1 ls
2	Container Yard		
(1)	Yard Pavement	Concrete pavement with storm drainage	10,500 m^2
3	Accessories		
(1)	Water Supply and Fire Fighting	Water supply piping underground with F/F hydrants along the wharf	1 ls
(2)	Lighting for the Wharf	Outdoor lighting pole	1 ls
(3)	Boundary Security Fence	H2.5m L300m with security gate	1 ls
(4)	Mobile Crane	Capacity 45 t	1 ls

4-2. JICA will assess the necessity, relevancy and degree of urgency of the requested components through the survey and will report the findings to the GOJ. Implementation and components of the Project will be decided by the GOJ.

4-3. Through the site survey and a series of discussion, both sides agreed upon the priority of the Project components, in the following order:

No.	Component	Priority	Remarks
1.	International Wharf		
(1)	Seawall	First	
(2)	End Revetment	First	
(3)	Dredging and Filling	First	
(4)	Mooring Dolphin	First	
(5)	Removal of Existing Dolphin	-	No Significant Obstacle for the Project
2.	Container Yard		
(1)	Yard Pavement	Second	
3.	Accessories		
(1)	Water Supply to the wharf	Second	
(2)	Fire Fighting at the wharf	-	Procured by SIPA
(3)	Lighting for the Wharf	Second	
(4)	Boundary Security Fence	-	Security Fence already installed along the Port Boundary
(5)	Mobile Crane	-	All Container Ships calling to Honiara Port equip ship's gear. And SIPA owns small size crane and the rental is possible.

Both sides agreed that the Project components to be constructed by Japan's Grant Aid Scheme be the first and second prioritized.

5. Japan's Grant Aid Scheme

5-1. The SIG understands the Japan's Grant Aid scheme explained by the Team, as described in Annex 3 and 4.

5-2. the SIG will take the necessary measures, as described in Annex 5, to facilitate the smooth implementation of the Project, if the Japan's Grant Aid is implemented, as a condition for the Japanese Grant Aid to be implemented.

6. Environmental and Social Considerations

6-1. The Team explained the outline of JICA Guidelines for Environmental and Social Considerations (hereinafter referred to as "the JICA Guidelines") to the SIG. The SIG understood the concept of the JICA Guidelines and confirmed to conduct the necessary procedure.

6-2. The responsible organization for environmental and social considerations of the Project is SIPA under the direction of Ministry of Environment, Climate Change, Disaster Management and Meteorology.

6-3. The Team explained EIA/IEE (Development Consent) had to be approved by Ministry of Environment, Climate Change, Disaster Management and Meteorology before the

Exchange of Notes to be signed between both governments for the implementation of the Project.

7. Schedule of the Study

7-1. The consultants will proceed to further studies in Honiara until April 25, 2013.

7-2. JICA will prepare the draft report and dispatch a mission in order to explain its contents around September, 2013.

8. Undertakings of the SIG

The SIG shall act as a counterpart agency to the survey team and also as a coordinating body with other organizations concerned for the smooth implementation of the Second Preparatory Survey.

The SIG shall, at its own expense, provide the survey team with the following items in cooperation with other organizations concerned:

(1) security-related information as well as measures to ensure the safety of the survey team;

(2) information as well as support in obtaining medical service;

(3) data and information related to the Second Preparatory Survey;

(4) counterpart personnel;

(5) suitable office space with necessary equipment and secretarial service;

(6) credentials or identification cards;

(7) entry permits necessary for the survey team members to conduct field surveys;

(8) support in making transportation arrangements;

(9) support in obtaining other privileges and benefits if necessary;

(10) the SIG shall assist the team in custom clearance, exempt from any duties with respect to equipment, instruments, tools and other articles to be brought into and out of Solomon Islands in connection with the implementation of the survey. For the equipment for boring works, in particular, the SIG shall proceed necessary procedure of tax exemption for importation of it as soon as possible, and

(11) the SIG shall bear claims, if any arises, against the members of the survey team resulting from, occurring in the course of, or otherwise connected with the discharge of their duties in implementation of the Second Preparatory Survey, except when such claim arise from gross negligence or willful misconduct on the part of the member of the survey team..

9. Other Relevant Issues

(1) Responsibility of SIPA

- The Survey report will be prepared through the full consultation with SIPA.
- Primary accountability about the Project rests with the SIG.

(2) Management structure of SIPA

The SIG confirmed that basic stance of the SIG to implement the Project would not be changed even after the assignment of new General Manager.

(3) Financial condition of SIPA

SIPA explained that financial condition of SIPA was sound and it had accumulated debt amounting up to approximately 1.061US$ (One Million and sixty one Thousand United State Dollar, as of November, 2012) which is in the trend of decrease because of increase of income raised by cargo volume increase.

(4) Separation of cargo operation function

The Team informed that the possibility of separation of cargo operation function from SIPA, as one option of SIPA's restructuring, will be studied because it would be a good opportunity for SIPA to consider the outsourcing scheme of the operation when the new international wharf would be developed. The SIG agreed to consider the study result with the involvement of SIPA in the course of the study.

(5) Wave calmness in front of the new international wharf

The Team explained that the operation rate of the new international wharf would be less than that of the existing international wharf because of less favorable sea condition.

(6) Master Plan Study

SIPA expressed the urgency of the Project and explained that the Master Plan Study is under way to prepare an action plan for the rest of facilities.

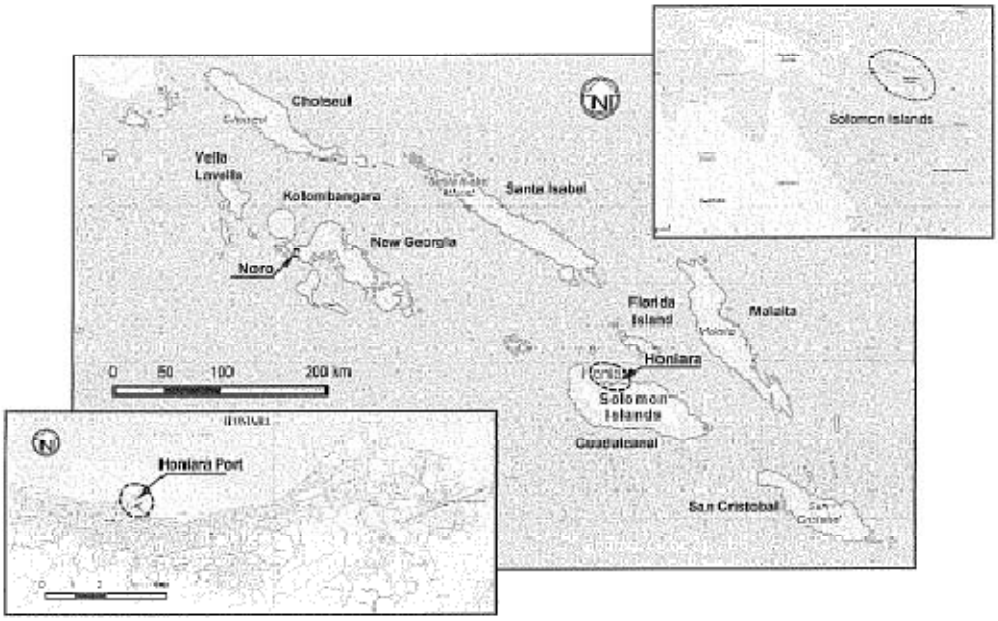
(7) Road issues

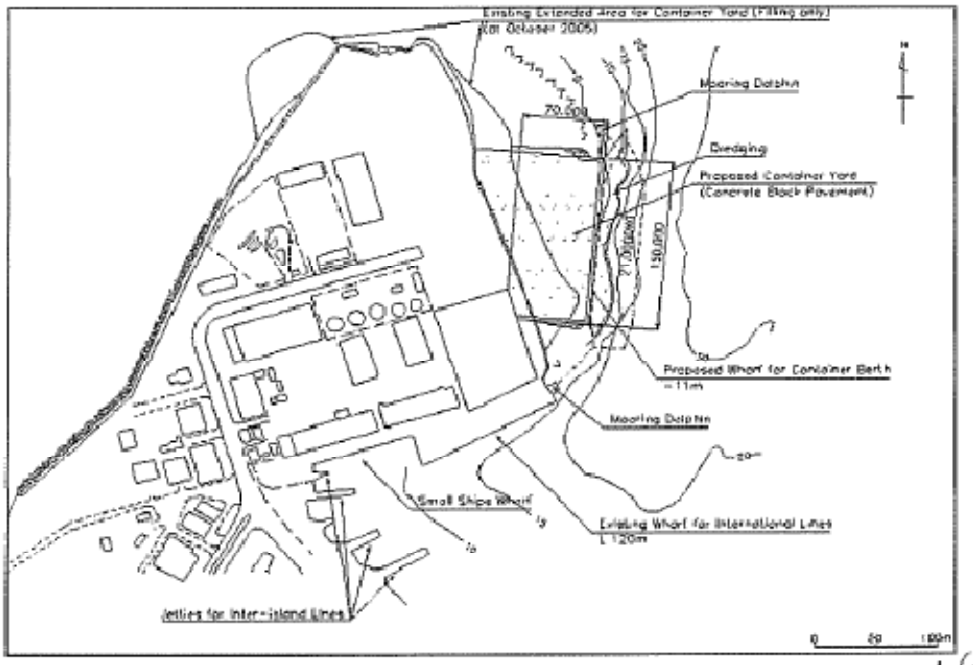
Ministry of Infrastructure Development and SIPA are mindful of road problem/traffic congestion that might be generated partially from the port.

Annex 1: The Propsed Project site
Annex 2: Organization chart of SIPA
Annex 3: Japan's Grant Aid Scheme
Annex 4: Flow chart of Japan's Grant Aid Proceedures
Annex 5: Major Undertakings to be taken by Each Government
Annex 6: List of Attendants

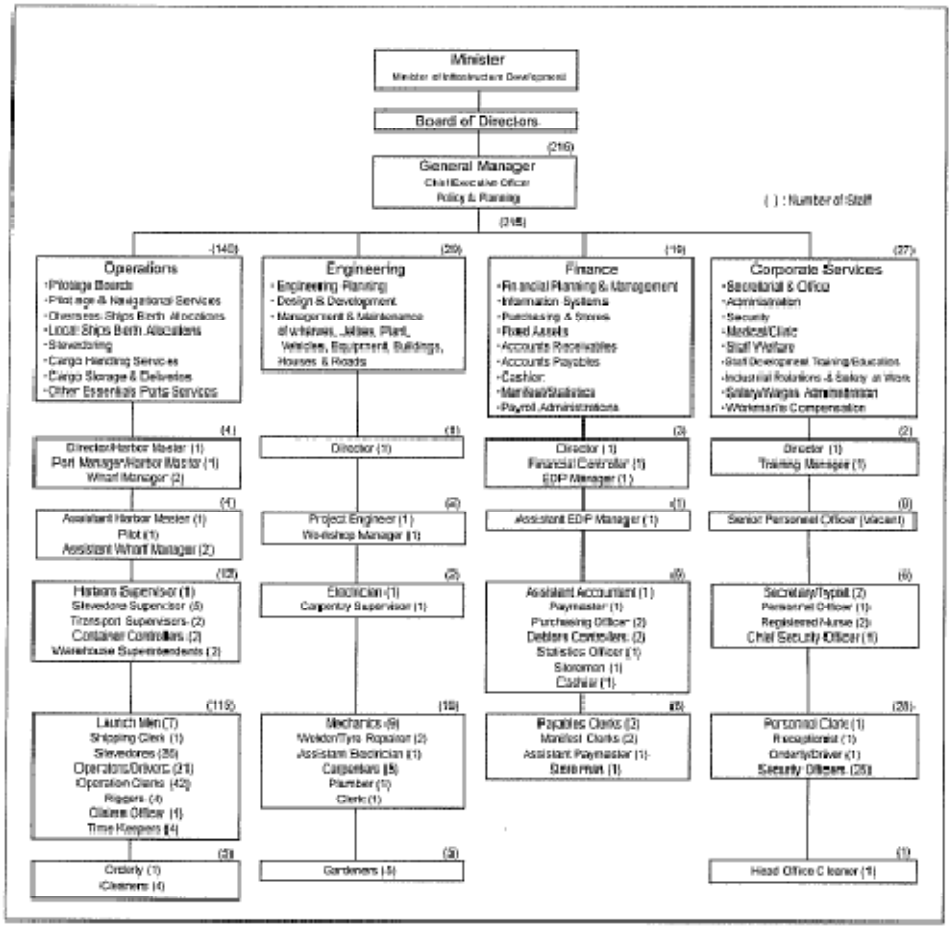
Annex 1

Honiara Port in Point Cruz.





Annex 2


Minister
Board of Directors
(216)
General Manager
Chief Executive Officer
Policy & Planning
( ) : Number of Staff
(216)
(140)
Operations
•Pilotage Boards
•Pilotage & Navigational Services
•Overseas Ships Berth Allocations
•Local Ships Berth Allocations
•Stevedoring
•Cargo Handling Services
•Cargo Storage & Deliveries
•Other Essentials Ports Services
(4)
Director/Harbor Master (1)
Port Manager/Harbor Master (1)
Wharf Manager (2)
(4)
Assistant Harbor Master (1)
Pilot (1)
Assistant Wharf Manager (2)
(12)
Harbors Supervisor (1)
Stevedore Supervisor (5)
Transport Supervisors (2)
Container Controllers (2)
Warehouse Superintendents (2)
(115)
Launch Men (7)
Shipping Clerk (1)
Stevedores (35)
Operators/Drivers (21)
Operation Clerks (42)
Riggers (4)
Claims Officer (1)
Time Keepers (4)
(3)
Orderly (1)
Cleaners (4)
(20)
Engineering
• Engineering Planning
• Design & Development
• Management & Maintenance of Wharves, Jetties, Plant, Vehicles, Equipment, Buildings, Houses & Roads
(1)
Director (1)
(2)
Project Engineer (1)
Workshop Manager (1)
(2)
Electrician (1)
Carpentry Supervisor (1)
(19)
Mechanics (9)
Welder/Tyre Repairer (2)
Assistant Electrician (1)
Carpenters (5)
Plumber (1)
Clerk (1)
(3)
Gardeners (3)
(19)
Finance
•Financial Planning & Management
•Information Systems
•Purchasing & Stores
•Fixed Assets
•Accounts Receivables
•Accounts Payables
•Cashier
•Manifest/Statistics
•Payroll Administration
(3)
Director (1)
Financial Controller (1)
EDP Manager (1)
(1)
Assistant EDP Manager (1)
(6)
Assistant Accountant (1)
Paymaster (1)
Purchasing Officer (2)
Debtors Controllers (2)
Statistics Officer (1)
Storeman (1)
Cashier (1)
(5)
Payables Clerks (2)
Manifest Clerks (2)
Assistant Paymaster (1)
Storeman (1)
(27)
Corporate Services
•Secretarial & Office
•Administration
•Security
•Medical/Clinic
•Staff Welfare
•Staff Development Training/Education
•Industrial Relations & Safety at Work
•Salary/Wages Administration
•Workman's Compensation
(2)
Director (1)
Training Manager (1)
(0)
Senior Personnel Officer (vacant)
(6)
Secretary/Typist (2)
Personnel Officer (1)
Registered Nurse (2)
Chief Security Officer (1)
(20)
Personnel Clerk (1)
Receptionist (1)
Orderly/Driver (1)
Security Officers (25)
(1)
Head Office Cleaner (1)

Annex 3

JAPAN'S GRANT AID

The Government of Japan (hereinafter referred to as "the GOJ") is implementing the organizational reforms to improve the quality of ODA operations, and as a part of this realignment, a new JICA law was entered into effect on October 1, 2008. Based on this law and the decision of the GOJ, JICA has become the executing agency of the Grant Aid for General Projects, for Fisheries and for Cultural Cooperation, etc.

The Grant Aid is non-reimbursable fund provided to a recipient country to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for its economic and social development in accordance with the relevant laws and regulations of Japan. The Grant Aid is not supplied through the donation of materials as such.

1. Grant Aid Procedures

The Japanese Grant Aid is supplied through following procedures:

- Preparatory Survey
  - The Survey conducted by JICA
- Appraisal & Approval
  - Appraisal by the GOJ and JICA, and Approval by the Japanese Cabinet
- Authority for Determining Implementation
  - The Notes exchanged between the GOJ and a recipient country
- Grant Agreement (hereinafter referred to as "the G/A")
  - Agreement concluded between JICA and a recipient country
- Implementation
  - Implementation of the Project on the basis of the G/A

2. Preparatory Survey

(1) Contents of the Survey

The aim of the preparatory Survey is to provide a basic document necessary for the appraisal of the Project made by the GOJ and JICA. The contents of the Survey are as follows:

- Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of relevant agencies of the recipient country necessary for the implementation of the Project.

- Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, financial, social and economic point of view.
- Confirmation of items agreed between both parties concerning the basic concept of the Project.
- Preparation of a outline design of the Project.
- Estimation of costs of the Project.

The contents of the original request by the recipient country are not necessarily approved in their initial form as the contents of the Grant Aid project. The Outline Design of the Project is confirmed based on the guidelines of the Japan's Grant Aid scheme.

JICA requests the Government of the recipient country to take whatever measures necessary to achieve its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization of the recipient country which actually implements the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country based on the Minutes of Discussions.

(2) Selection of Consultants

For smooth implementation of the Survey, JICA employs (a) registered consulting firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms.

(3) Result of the Survey

JICA reviews the Report on the results of the Survey and recommends the GOJ to appraise the implementation of the Project after confirming the appropriateness of the Project.

3. Japan's Grant Aid Scheme

(1) The E/N and the G/A

After the Project is approved by the Cabinet of Japan, the Exchange of Notes(hereinafter referred to as "the E/N") will be singed between the GOJ and the Government of the recipient country to make a pledge for assistance, which is followed by the conclusion of the G/A between JICA and the Government of the recipient country to define the necessary articles to implement the Project, such as payment conditions, responsibilities of the Government of the recipient country, and procurement conditions.

(2) Selection of Consultants

In order to maintain technical consistency, the consulting firm(s) which conducted the Survey will be recommended by JICA to the recipient country to continue to work on the Project's implementation after the E/N and G/A.

(3) Eligible source country

Under the Japanese Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased. When JICA and the Government of the recipient country or its designated authority deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country. However, the prime contractors, namely, constructing and procurement firms, and the prime consulting firm are limited to "Japanese nationals".

(4) Necessity of "Verification"

The Government of the recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by JICA. This "Verification" is deemed necessary to fulfill accountability to Japanese taxpayers.

(5) Major undertakings to be taken by the Government of the Recipient Country

In the implementation of the Grant Aid Project, the recipient country is required to undertake such necessary measures as Annex.

(6) "Proper Use"

The Government of the recipient country is required to maintain and use properly and effectively the facilities constructed and the equipment purchased under the Grant Aid, to assign staff necessary for this operation and maintenance and to bear all the expenses other than those covered by the Grant Aid.

(7) "Export and Re-export"

The products purchased under the Grant Aid should not be exported or re-exported from the recipient country.

(8) Banking Arrangements (B/A)

a) The Government of the recipient country or its designated authority should open an account under the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank"). JICA will execute

the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts.

b) The payments will be made when payment requests are presented by the Bank to JICA under an Authorization to Pay (A/P) issued by the Government of the recipient country or its designated authority.

(9) Authorization to Pay (A/P)

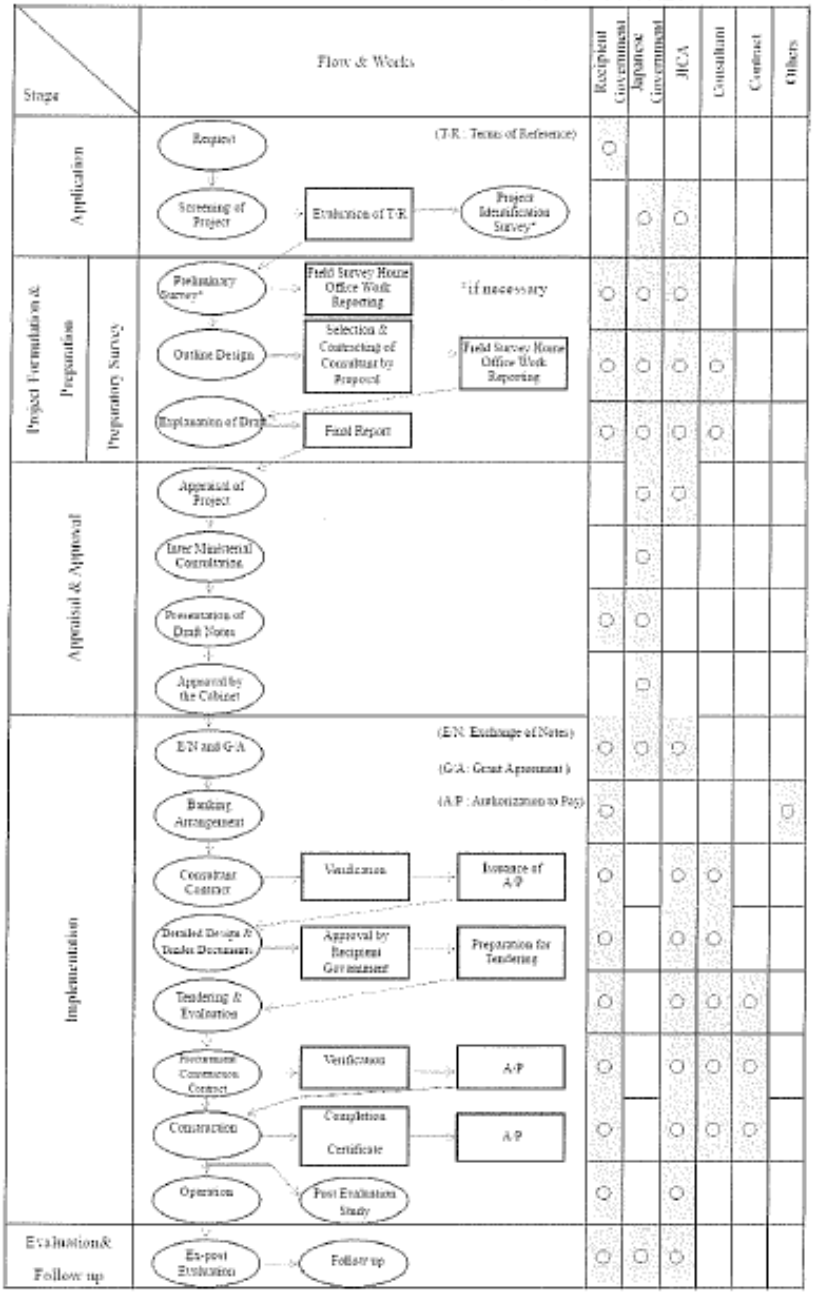
The Government of the recipient country should bear an advising commission of an Authorization to Pay and payment commissions paid to the Bank.

(10) Social and Environmental Considerations

A recipient country must carefully consider social and environmental impacts by the Project and must comply with the environmental regulations of the recipient country and JICA socio-environmental guidelines.

Annex 4

FLOW CHART OF JAPAN's GRANT AID PROCEDURES



Annex 5

Major Undertakings to be taken by Each Government

No.	Items	To be covered by Grant Aid	To be covered by Recipient Side
1	to secure a lot of land necessary for the implementation of the Project and to clear the site sites;		●
2	To ensure prompt unloading and customs clearance of the products at ports of disembarkation in the recipient country and to assist internal transportation of the products		
	1) Marine (Air) transportation of the Products from Japan to the recipient country	●	
	2) Tax exemption and custom clearance of the Products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site	(●)	(●)
3	To ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the purchase of the products and the services be exempted		●
4	To accord Japanese nationals and nationals of third countries whose services may be required in connection with the supply of the products and the services such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of the work		●
5	To ensure that the Facilities and the products be maintained and used properly and effectively for the implementation of the Project		●
6	To bear all the expenses, other than those covered by the Grant, necessary for the implementation of the Project		●
7	To bear the following commissions paid to the Japanese bank for banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●
8	To give due environmental and social consideration in the implementation of the Project.		●

(B/A : Banking Arrangement, A/P : Authorization to pay)

Annex 6

SIG Side:

Mr. Shadrach Fanega, Permanent Secretary, Ministry of Finance and Treasury
Mr. Moses Virivolomo, Permanent Secretary, Ministry of Infrastructure Development
Mr. Glyn Joshua, Acting General Manager, Solomon Island Ports Authority
Mr. Ronald Ivapitu, Director, Engineering, Solomon Island Ports Authority
Ms. Bridget WAFUNI , Management accountant, Solomon Island Ports Authority
Mr. Reginald Alatala, Workshop Manager, Solomon Island Ports Authority
Mr. Hugo John Bugoro, Acting Operations Manager, Solomon Island Ports Authority
Captain Judah KULABULE, Harbourmaster, Solomon Island Ports Authority
Captain Vitale TANGISI, Harbour Pilot, Solomon Island Ports Authority
Mr. Santus SIOTA, Project Engineer, Solomon Island Ports Authority

Japanese Side:

Mr. Hozumi Katsuta, Leader, Second Preparatory Study Team, JICA
Ms. Saori Fukuhara, Member, Second Preparatory Study Team, JICA
Mr. Yutaka Ochi, Consultant, Second Preparatory Study Team, JICA
Mr. Yuhei Yamamoto, Consultant, Second Preparatory Study Team, JICA
Mr. Toshio Yamada, Consultant, Second Preparatory Study Team, JICA
Mr. Yuji Hatakeyama, Consultant, Second Preparatory Study Team, JICA
Mr. Masao Ichinose, Consultant, Second Preparatory Study Team, JICA
Mr. Yoshinobu Takishita, Representative, Solomon Islands Office, JICA
Ms. Naoko Laka, Project Formulation Adviser, Solomon Islands Office, JICA

(2) 概要説明時（2013 年 11 月 15 日）

Minutes of Discussions
on the Second Preparatory Survey for Outline Design
on
the Project for Improvement of Honiara Port Facilities
in the Solomon Islands

In March 2013, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched a Second Preparatory Survey Team for "the Project for Improvement of Honiara Port Facilities in the Solomon Islands" (hereinafter referred to as "the Project") to Solomon Islands. The Second Preparatory Survey Team held a series of discussions with the concerned officials of the Solomon Islands Government (hereinafter referred to as "SIG") and conducted field surveys. After returning back to Japan, based on the discussions, field survey results and technical examination, JICA prepared a draft report of the survey.

In order to explain and discuss with the SIG on the contents of the draft report, JICA sent to the Solomon Islands, the Explanation Team for the Draft Outline Design Report of the Second Preparatory Survey (hereinafter referred to as "the Team"), which is headed by Mr. Hozumi KATSUTA, Advisor, JICA, from October 1st to 11th, 2013.

As a result of the discussion through the Explanation Team and the Resident Representative of JICA Solomon Islands Office with SIG side, both sides confirmed the main items described in the attached sheets.

Honiara, November 15, 2013

Seth Gukuma
Hon. Minister
Ministry of Infrastructure Development
Solomon Islands

Taiji Usui
Resident Representative
Solomon Islands office
Japan International Cooperation Agency

Rick Nelson Houenipwela
Hon. Minister
Ministry of Finance and Treasury
Solomon Islands

ATTACHMENT

1. Components of the Draft Outline Design Report

   SIG agreed and accepted in principle the contents of the Draft Outline Design Report of the Preparatory Survey as a Technical Notes sighed by both sides on October 9th, 2013.

2. Japan's Grant Aid Scheme

   SIG reconfirmed the Japan's Grant Aid scheme. SIG reassured to take the necessary measurements as explained by the Second Preparatory Survey Team and described in the Annex-5 of the Minutes of Discussions signed by both sides on March 18th, 2013. SIG agreed to undertake all necessary works written in Annex-1 (2).

3. Schedule of the Study

   JICA will complete the Final Outline Design Report of the Second Preparatory Survey in English, in accordance with the confirmed items and send the report to the SIG through JICA Solomon Office by the end of December, 2013.

4. Cost Estimation

   Both sides agreed that in order to secure a fair and equitable procurement, the Project Cost Estimation attached in Annex-1 should never be duplicated or released to any third parties before the signing of all the Contract(s) for the Project.

5. Other Relevant Issues

   JICA insists on immediate settling of uncertainties surrounding the management and governance of SIPA for smooth implementation of the Project.

Annex1 Cost Estimation

CONFIDENTIAL

Project Cost to be Borne by Japan's Grant Aid

「施工・調達業者計約認証まで非公表」

資料－5　参考資料

資料 5.1　Technical Notes（T/N）

(1) 現地調査（2013 年 4 月 12 日）

Technical Notes
on the Second Preparatory Survey for Outline Design
on the Project for Improvement of Honiara Port Facilities
in Solomon Islands

Referring to the result of Preparatory Survey in September 2011, the Government of Japan (hereinafter referred to as "the GOJ") decided to conduct a Second Preparatory Survey for Outline Design on the Project for Improvement of Honiara Port Facilities in the Solomon Islands (hereinafter referred to as "the Project") and entrusted the survey to the Japan International Cooperation Agency (hereinafter referred to as "JICA")

JICA dispatched the Second Preparatory Survey Team for the Project (hereinafter referred to as "the Team") to the Solomon Islands, headed by Mr. Hozumi Katsuta, Advisor, JICA, and conducted the survey from March 14 to March 21, 2013.

The Consultant members of the Team continued field survey in the study area and carried out a preliminary analysis of collected data and information. In the course of the discussions and field survey, both sides have confirmed the main items described in the attached sheets.

Honiara, April 12, 2013

Mr. Yutaka Ochi
Chief Consultant
Second Preparatory Survey Team
Japan International Cooperation Agency

Mr. Glyn Joshua
Acting General Manager
Solomon Island Ports Authority
Solomon Islands

ATTACHMENT

1. Beacons of Ancillary Facility of Berth

Beacons installed at both end of the new berth are necessary as a basic ancillary of the new international wharf for night time navigation safety.

2. Structural Type of Berthing Facility

Regarding the berthing facility, a steel pile wall type structure, which is a part of the existing international wharf, is preferable through discussion with the JICA study team.

3. Application of Construction Permit Issued by Honiara City Council

Applications of Development Permit necessary for the project implementation stage will be undertaken by Solomon Islands Ports Authority (hereinafter referred to as "SIPA") to Honiara City Council.

4. Design Standard of Port Structures

Japanese design standard for the port structures, which is internationally recognized, will be adopted.

5. Temporary Construction Yard

Temporary construction yards required for the construction works of the Project will be allocated in the area of Honiara Port.

6. Pavement of Existing Container Yard

Pavement works of unpaved area next to the existing container yard will be carried out by SIPA to cater for increase of container volume.

7 Drainage Relocation

Drainage system to discharge rain water to sea where outlets are located behind the Project site will be relocated by SIPA.

8. Extension of Electricity and Water Supply Line

Internal extension of electricity and water supply line within the existing port area will be carried out by SIPA to the point adjacent to the Project site.

Over

(2) 概要説明調査（2013 年 10 月 9 日）

Technical Notes
on the Second Preparatory Survey for Outline Design
on the Project for Improvement of Honiara Port Facilities
in Solomon Islands
(Explanation of the Draft Outline Design Report)

In March 2013, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched a Second Preparatory Survey Team for "Improvement of Honiara Port Facilities in Solomon Islands (hereinafter referred to as "the Project") to Solomon Islands. The Second Preparatory Survey Team held a series of discussions with the officials concerned in the Solomon Islands Government (hereinafter referred to as "SIG") and conducted field surveys. Based on the discussion, field survey results and technical examination, JICA prepared a draft report of the survey in Japan.

In order to explain to and discuss with SIG the contents of the draft report, JICA sent to Solomon Islands, the Explanation Team for the Draft Outline Design Report of the Second Preparatory Survey (hereinafter referred to as "the Team"), headed by Mr. Hozumi KATSUTA, Advisor, JICA from October 1st to 7th, 2013.

The Consultant members of the Team remained and continued the field survey and discussion with Solomon Islands Port Authority (hereinafter referred to as "SIPA") to finalise the technical matters in the Draft Report. As the results of the discussions and field survey, both sides have confirmed the main items described in the attached sheet.

Honiara
October 9, 2013

Mr. Yutaka Ochi
Chief Consultant
Second Preparatory Survey Team
Japan International Cooperation Agency

Mr. Ronald Ivupitu
Director Engineering
Solomon Island Ports Authority
Solomon Islands

ATTACHMENT

1. Components of the Draft Outline Report

SIPA, the implementing agency of the Project agreed and accepted in principle the Draft Outline Report of the Preparatory Survey.

2. EIA Procedure

EIA procedure of the Project is currently on finalization stage as scheduled. The final stakeholder meeting and publicity is scheduled to be held in November, 2013. The environmental license is expected to be issued around December, 2013.

3. Planning Approval and Building Permit

Planning approval is expected to be issued around January, 2014 by Honiara City Council. Similarly building permit from Honiara City Council is expected to be issued around August, 2014. Any fees associated with obtaining planning approval and building permit will be borne by SIPA.

4. The Master Plan Study of Honiara Port under SIPA

The Master Plan Study of Honiara Port carried out by SIPA is currently under way to prepare an action plan for port facility development. The port facility layout plan of the master plan will incorporate the layout plan of the Project.

5. Other Relevant Issues

5-1 Particulars of the project facilities described in the draft report are agreed in principle.

5-2 Extension point of electricity and water line to the Project Site is confirmed to be near the existing bank adjacent to the north access road of the new international wharf.

5-3 Site clearance and preparation of the temporary construction yard are confirmed to be carried out by SIPA.

Over

資料－6　その他の資料・情報

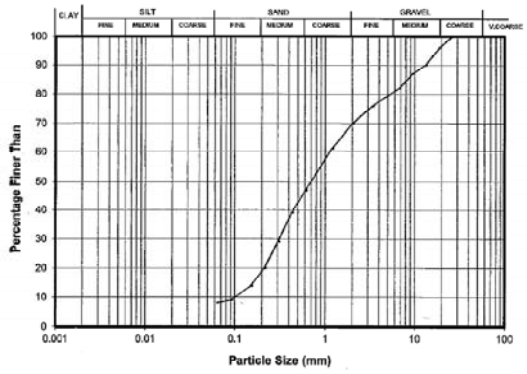
資料 6.1　ボーリング調査結果（各地点の粒径加積曲線）

ボーリング調査において得られた各地点の粒径加積曲線は、以下に示すとおりである。
（ボーリング調査地点は、2-2-3 章を参照。）

(1) BH-1 地点

DL-11.05～-11.60m

Solid Density: 2.40 t/m^3, Unit Weight: 1.68 t/m^3

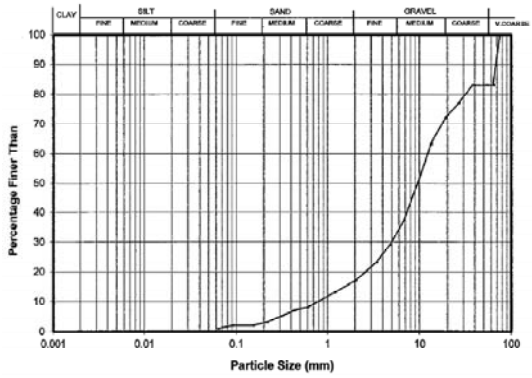


Sieve (mm)	Total % Passing
75.0	---
63.0	---
53.0	---
37.5	---
26.5	100
19.0	96
13.20	90
9.50	87
6.70	82
4.75	79

Sieve (mm)	Total % Passing
3.35	76
2.00	70
1.180	61
0.600	47
0.425	39
0.300	29
0.212	20
0.150	14
0.090	9
0.063	8

DL-15.05～-15.60m

Solid Density: 2.45 t/m^3, Unit Weight: 1.79 t/m^3

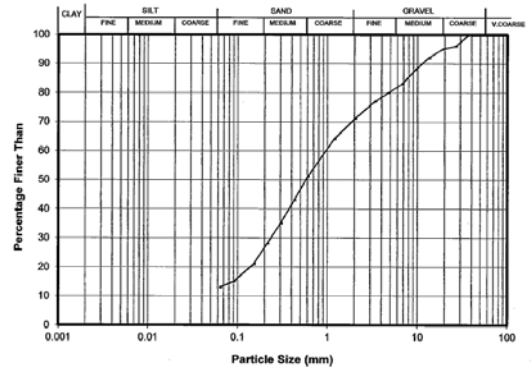


Sieve (mm)	Total % Passing
75.0	100
63.0	83
53.0	83
37.5	83
26.5	77
19.0	72
13.20	63
9.50	50
6.70	37
4.75	29

Sieve (mm)	Total % Passing
3.35	23
2.00	17
1.180	13
0.600	8
0.425	7
0.300	5
0.212	3
0.150	2
0.090	2
0.063	1

DL-22.05～-22.60m

Solid Density: 2.42 t/m^3, Unit Weight: 1.70 t/m^3



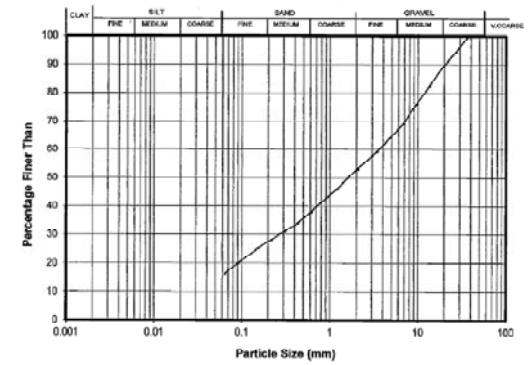
Sieve (mm)	Total % Passing
75.0	---
63.0	---
53.0	---
37.5	100
26.5	96
19.0	95
13.20	92
9.50	88
6.70	83
4.75	80

Sieve (mm)	Total % Passing
3.35	77
2.00	71
1.180	64
0.600	51
0.425	43
0.300	35
0.212	28
0.150	21
0.090	15
0.063	13

(2) BH-2 地点

DL-10.25～-10.80m

Solid Density: 2.43 t/m^3, Unit Weight: 1.65 t/m^3

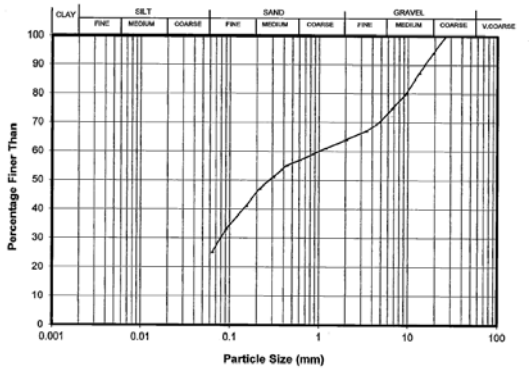


Sieve (mm)	Total % Passing
63.0	---
53.0	---
37.5	100
26.5	94
19.0	89
13.2	82
9.50	76
6.70	69
4.75	64
3.35	59

Sieve (mm)	Total % Passing
2.00	53
1.18	46
0.600	38
0.425	34
0.300	31
0.212	28
0.150	25
0.090	20
0.063	16

DL-17.25～-17.80m

Solid Density: 2.40 t/m^3, Unit Weight: 1.62 t/m^3

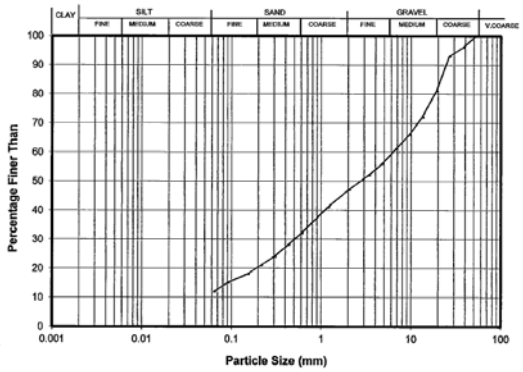


Sieve (mm)	Total % Passing
63.0	---
53.0	---
37.5	---
26.5	100
19.0	94
13.2	87
9.50	80
6.70	75
4.75	70
3.35	67

Sieve (mm)	Total % Passing
2.00	64
1.18	61
0.600	57
0.425	55
0.300	51
0.212	47
0.150	41
0.090	33
0.063	25

DL-24.25～-24.60m

Solid Density: 2.51 t/m^3, Unit Weight: 1.79 t/m^3



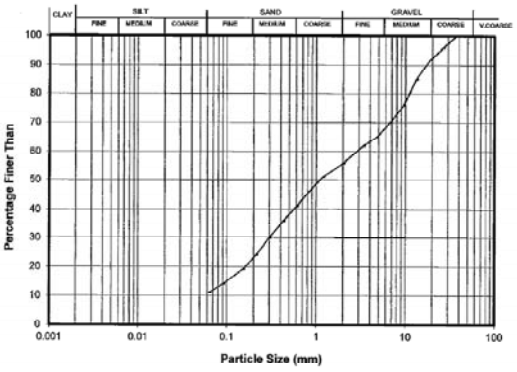
Sieve (mm)	Total % Passing
63.0	---
53.0	100
37.5	96
26.5	93
19.0	81
13.2	72
9.50	66
6.70	61
4.75	56
3.35	52

Sieve (mm)	Total % Passing
2.00	47
1.18	41
0.600	32
0.425	28
0.300	24
0.212	21
0.150	18
0.090	15
0.063	12

(3) BH-3 地点

DL-11.65～-12.00m

Solid Density: 2.59 t/m^3, Unit Weight: 1.63 t/m^3

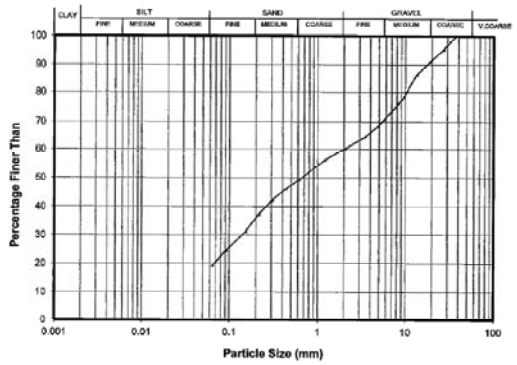


Sieve (mm)	Total % Passing
63.0	---
53.0	---
37.5	100
26.5	96
19.0	92
13.2	85
9.50	76
6.70	70
4.75	65
3.35	62

Sieve (mm)	Total % Passing
2.00	56
1.18	51
0.600	41
0.425	36
0.300	30
0.212	24
0.150	19
0.090	14
0.063	11

DL-15.80～-16.20m

Solid Density: 2.55 t/m^3, Unit Weight: 1.63 t/m^3

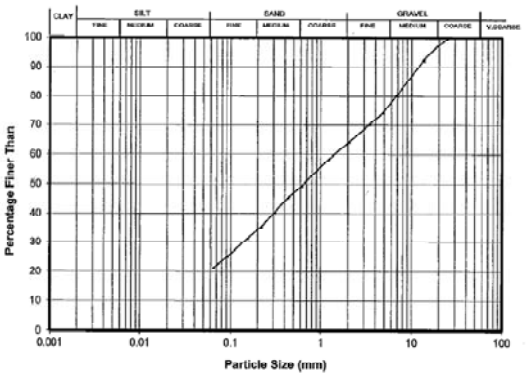


Sieve (mm)	Total % Passing
63.0	---
53.0	---
37.5	100
26.5	95
19.0	91
13.2	86
9.50	78
6.70	73
4.75	68
3.35	64

Sieve (mm)	Total % Passing
2.00	60
1.18	56
0.600	49
0.425	46
0.300	42
0.212	37
0.150	31
0.090	24
0.063	19

DL-22.65～-23.00m

Solid Density: 2.52 t/m^3, Unit Weight: 1.73 t/m^3



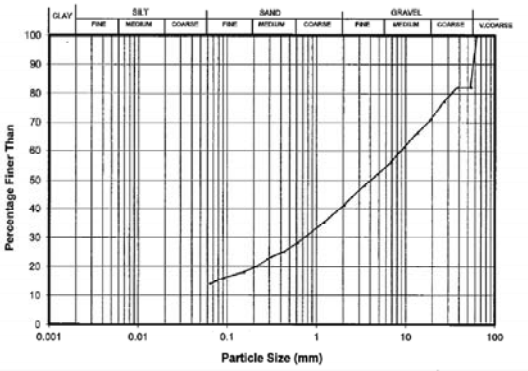
Sieve (mm)	Total % Passing
63.0	---
53.0	---
37.5	---
26.5	100
19.0	97
13.2	92
9.50	86
6.70	80
4.75	74
3.35	70

Sieve (mm)	Total % Passing
2.00	64
1.18	58
0.600	49
0.425	45
0.300	40
0.212	35
0.150	31
0.090	25
0.063	21

(4) BH-4 地点

DL-10.55～-11.10m

Solid Density: 2.40 t/m^3, Unit Weight: 1.81 t/m^3

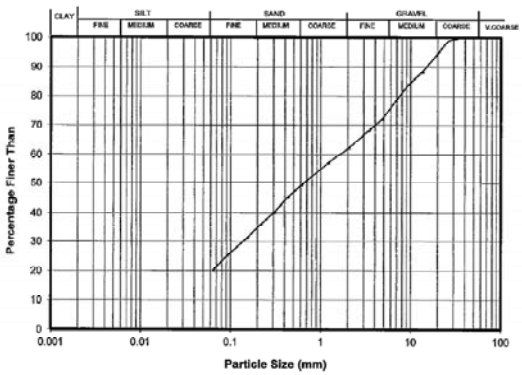


Sieve (mm)	Total % Passing
75.0	---
63.0	100
53.0	82
37.5	82
26.5	77
19.0	71
13.20	66
9.50	61
6.70	56
4.75	52

Sieve (mm)	Total % Passing
3.35	48
2.00	41
1.180	35
0.600	28
0.425	25
0.300	23
0.212	20
0.150	18
0.090	16
0.063	14

DL-21.55～-22.10m

Solid Density: 2.45 t/m^3, Unit Weight: 1.63 t/m^3

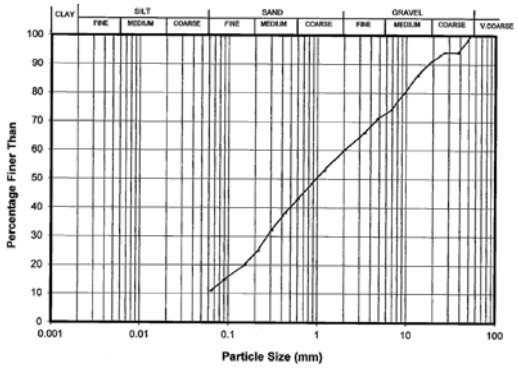


Sieve (mm)	Total % Passing
75.0	---
63.0	---
53.0	---
37.5	100
26.5	99
19.0	94
13.20	88
9.50	84
6.70	78
4.75	72

Sieve (mm)	Total % Passing
3.35	68
2.00	62
1.180	57
0.600	49
0.425	45
0.300	40
0.212	36
0.150	31
0.090	25
0.063	20

DL-27.55～-28.10m

Solid Density: 2.42 t/m^3, Unit Weight: 1.87 t/m^3



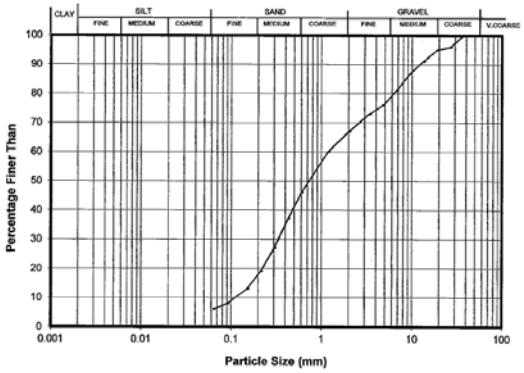
Sieve (mm)	Total % Passing
63.0	---
53.0	100
37.5	94
26.5	94
19.0	91
13.2	86
9.50	80
6.70	74
4.75	71
3.35	66

Sieve (mm)	Total % Passing
2.00	60
1.18	53
0.600	43
0.425	38
0.300	32
0.212	25
0.150	20
0.090	15
0.063	11

(5) BH-5 地点

DL-7.45～-8.00m

Solid Density: 2.52 t/m^3, Unit Weight: 1.63 t/m^3

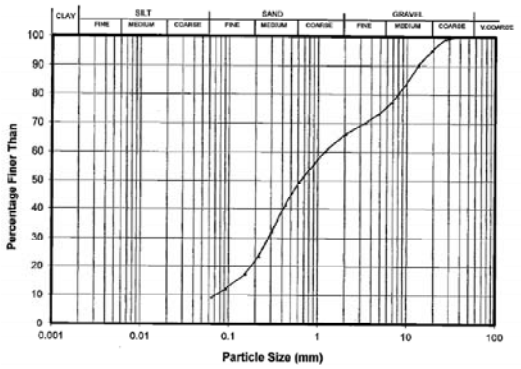


Sieve (mm)	Total % Passing
63.0	---
53.0	---
37.5	100
26.5	96
19.0	95
13.2	91
9.50	87
6.70	81
4.75	76
3.35	73

Sieve (mm)	Total % Passing
2.00	67
1.18	60
0.600	46
0.425	37
0.300	27
0.212	19
0.150	13
0.090	8
0.063	6

DL-12.45～-13.00m

Solid Density: 2.55 t/m^3, Unit Weight: 1.79 t/m^3

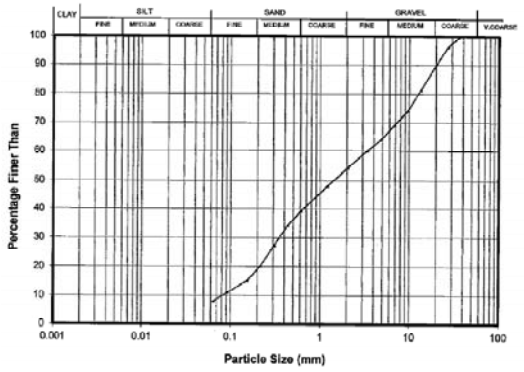


Sieve (mm)	Total % Passing
63.0	---
53.0	---
37.5	100
26.5	99
19.0	95
13.2	90
9.50	83
6.70	77
4.75	73
3.35	70

Sieve (mm)	Total % Passing
2.00	66
1.18	60
0.600	49
0.425	41
0.300	32
0.212	23
0.150	17
0.090	12
0.063	9

DL-16.45～-17.00m

Solid Density: 2.54 t/m^3, Unit Weight: 1.75 t/m^3



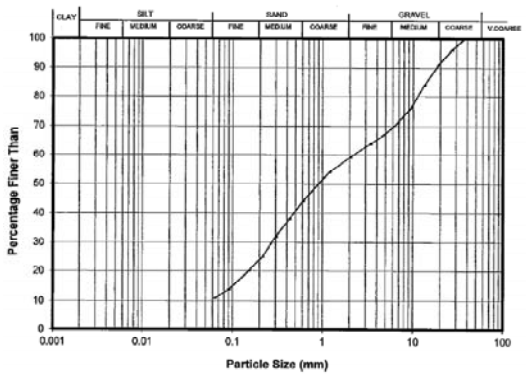
Sieve (mm)	Total % Passing
63.0	---
53.0	---
37.5	100
26.5	96
19.0	89
13.2	81
9.50	74
6.70	69
4.75	64
3.35	60

Sieve (mm)	Total % Passing
2.00	54
1.18	48
0.600	39
0.425	34
0.300	27
0.212	20
0.150	15
0.090	11
0.063	8

(6) BH-6 地点

DL-5.65～-6.20m

Solid Density: 2.50 t/m^3, Unit Weight: 1.76 t/m^3

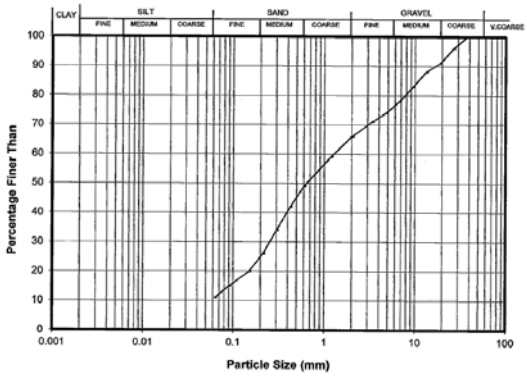


Sieve (mm)	Total % Passing
63.0	---
53.0	---
37.5	100
26.5	96
19.0	91
13.2	84
9.50	76
6.70	71
4.75	67
3.35	64

Sieve (mm)	Total % Passing
2.00	59
1.18	54
0.600	44
0.425	38
0.300	32
0.212	25
0.150	20
0.090	14
0.063	11

DL-9.65～-10.20m

Solid Density: 2.52 t/m^3, Unit Weight: 1.67 t/m^3

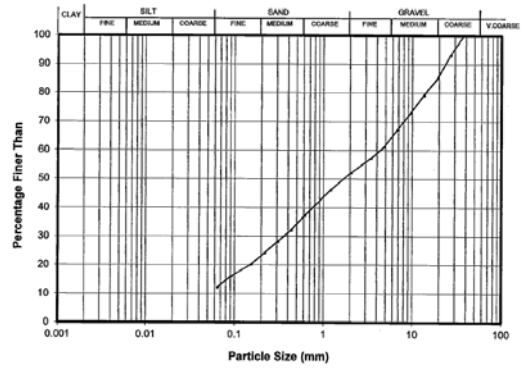


Sieve (mm)	Total % Passing
63.0	---
53.0	---
37.5	100
26.5	96
19.0	91
13.2	88
9.50	83
6.70	78
4.75	74
3.35	71

Sieve (mm)	Total % Passing
2.00	66
1.18	59
0.600	49
0.425	42
0.300	34
0.212	26
0.150	20
0.090	15
0.063	11

DL-19.20～-20.20m

Solid Density: 2.63 t/m^3, Unit Weight: 2.00 t/m^3



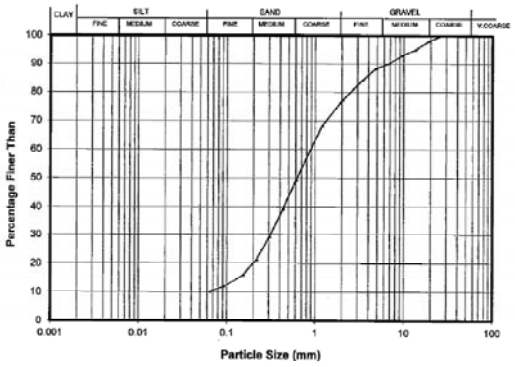
Sieve (mm)	Total % Passing
63.0	---
53.0	---
37.5	100
26.5	93
19.0	85
13.2	79
9.50	73
6.70	67
4.75	61
3.35	57

Sieve (mm)	Total % Passing
2.00	52
1.18	46
0.600	37
0.425	32
0.300	28
0.212	24
0.150	20
0.090	16
0.063	12

(7) BH-7 地点

DL-8.55～9.10m

Solid Density: 2.51 t/m^3, Unit Weight: 1.81 t/m^3

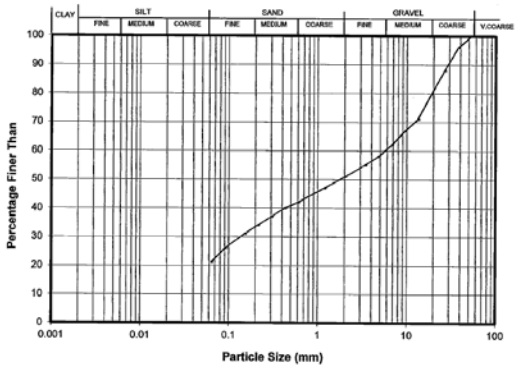


Sieve (mm)	Total % Passing
63.0	---
53.0	---
37.5	---
26.5	100
19.0	98
13.2	95
9.50	93
6.70	90
4.75	88
3.35	84

Sieve (mm)	Total % Passing
2.00	77
1.18	68
0.600	49
0.425	39
0.300	29
0.212	21
0.150	16
0.090	12
0.063	10

DL-12.55～-13.10m

Solid Density: 2.55 t/m^3, Unit Weight: 1.84 t/m^3

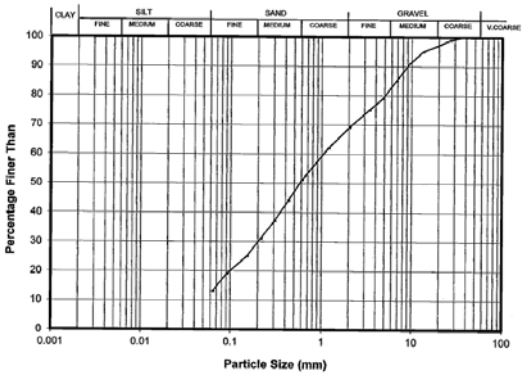


Sieve (mm)	Total % Passing
63.0	---
53.0	100
37.5	96
26.5	88
19.0	80
13.2	71
9.50	67
6.70	62
4.75	58
3.35	55

Sieve (mm)	Total % Passing
2.00	51
1.18	47
0.600	42
0.425	40
0.300	37
0.212	34
0.150	31
0.090	26
0.063	21

DL-19.55～-20.10m

Solid Density: 2.62 t/m^3, Unit Weight: 1.86 t/m^3



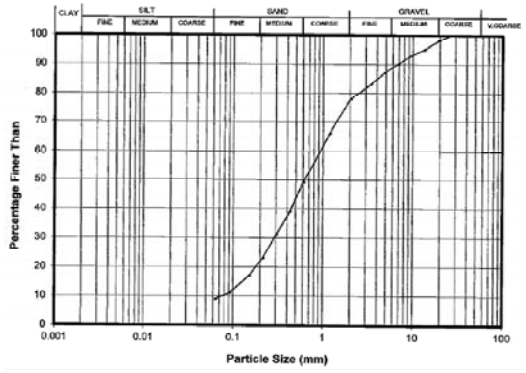
Sieve (mm)	Total % Passing
63.0	---
53.0	---
37.5	100
26.5	99
19.0	97
13.2	95
9.50	91
6.70	85
4.75	79
3.35	75

Sieve (mm)	Total % Passing
2.00	69
1.18	62
0.600	51
0.425	44
0.300	37
0.212	31
0.150	25
0.090	19
0.063	13

(8) BH-8 地点

DL-7.45～-8.00m

Solid Density: 2.48 t/m^3, Unit Weight: 1.71 t/m^3

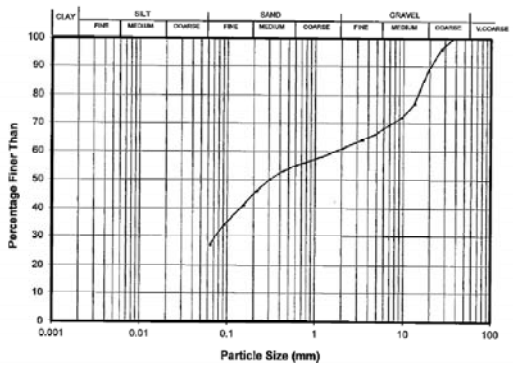


Sieve (mm)	Total % Passing
63.0	---
53.0	---
37.5	---
26.5	100
19.0	98
13.2	95
9.50	93
6.70	90
4.75	87
3.35	83

Sieve (mm)	Total % Passing
2.00	78
1.18	66
0.600	49
0.425	39
0.300	31
0.212	23
0.150	17
0.090	11
0.063	9

DL-11.45～-11.90m

Solid Density: 2.37 t/m^3, Unit Weight: 1.65 t/m^3

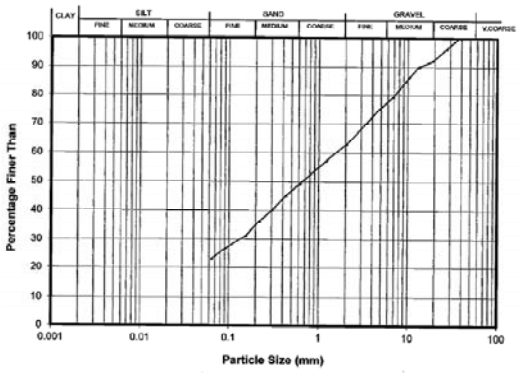


Sieve (mm)	Total % Passing
63.0	---
53.0	---
37.5	100
26.5	96
19.0	88
13.2	77
9.50	72
6.70	69
4.75	66
3.35	64

Sieve (mm)	Total % Passing
2.00	61
1.18	58
0.600	55
0.425	53
0.300	50
0.212	46
0.150	41
0.090	34
0.063	27

DL-21.45～-22.00m

Solid Density: 2.46 t/m^3, Unit Weight: 1.75 t/m^3



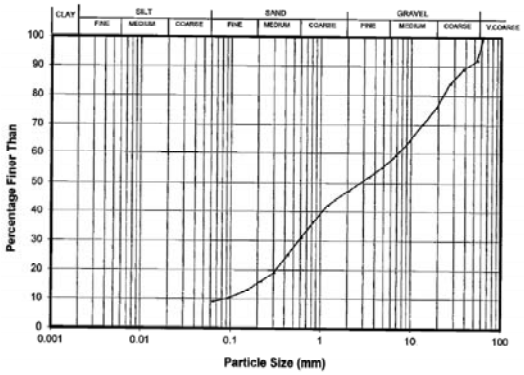
Sieve (mm)	Total % Passing
63.0	---
53.0	---
37.5	100
26.5	96
19.0	92
13.2	90
9.50	85
6.70	79
4.75	75
3.35	70

Sieve (mm)	Total % Passing
2.00	63
1.18	57
0.600	49
0.425	45
0.300	40
0.212	36
0.150	31
0.090	27
0.063	23

(9) BH-9 地点

DL-2.15～-2.70m

Solid Density: 2.53 t/m^3, Unit Weight: 1.73 t/m^3

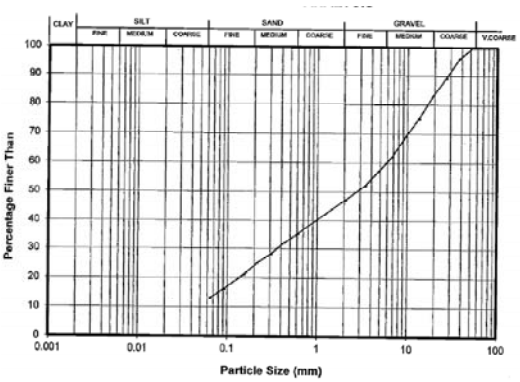


Sieve (mm)	Total % Passing
63.0	100
53.0	92
37.5	89
26.5	84
19.0	76
13.2	70
9.50	64
6.70	59
4.75	55
3.35	52

Sieve (mm)	Total % Passing
2.00	47
1.18	42
0.600	31
0.425	25
0.300	19
0.212	16
0.150	13
0.090	10
0.063	9

DL-9.15～-9.70m

Solid Density: 2.50 t/m^3, Unit Weight: 1.68 t/m^3

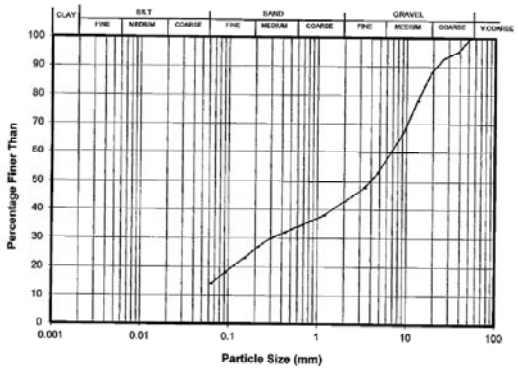


Sieve (mm)	Total % Passing
63.0	---
53.0	100
37.5	96
26.5	89
19.0	83
13.2	75
9.50	69
6.70	62
4.75	57
3.35	52

Sieve (mm)	Total % Passing
2.00	47
1.18	42
0.600	35
0.425	32
0.300	28
0.212	25
0.150	21
0.090	16
0.063	13

DL-14.15～-14.70m

Solid Density: 2.60 t/m^3, Unit Weight: 1.75 t/m^3



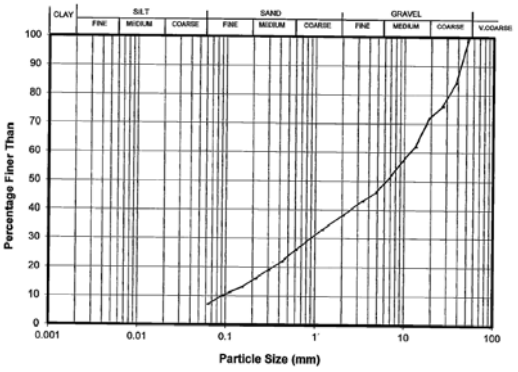
Sieve (mm)	Total % Passing
63.0	---
53.0	100
37.5	95
26.5	93
19.0	88
13.2	78
9.50	68
6.70	60
4.75	53
3.35	48

Sieve (mm)	Total % Passing
2.00	43
1.18	38
0.600	34
0.425	32
0.300	30
0.212	27
0.150	23
0.090	18
0.063	14

(10) BH-10 地点

DL-2.15～-3.30m

Solid Density: 2.46 t/m^3, Unit Weight: 1.86 t/m^3

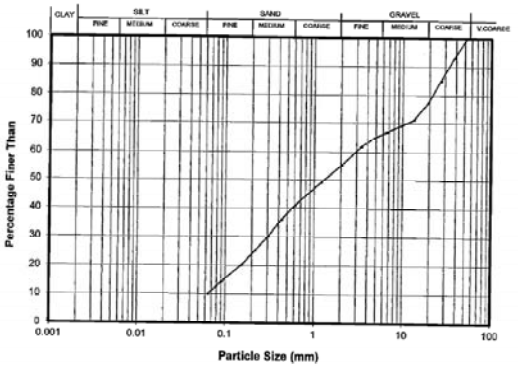


Sieve (mm)	Total % Passing
63.0	---
53.0	100
37.5	84
26.5	76
19.0	72
13.2	62
9.50	57
6.70	51
4.75	46
3.35	43

Sieve (mm)	Total % Passing
2.00	38
1.18	33
0.600	26
0.425	22
0.300	19
0.212	16
0.150	13
0.090	10
0.063	7

DL-6.15～6.70m

Solid Density: 2.36 t/m^3, Unit Weight: 1.70 t/m^3

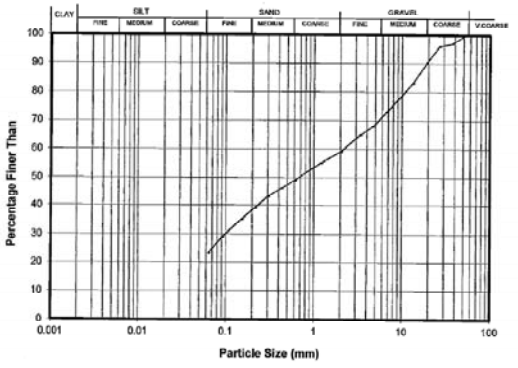


Sieve (mm)	Total % Passing
63.0	---
53.0	100
37.5	93
26.5	85
19.0	77
13.2	71
9.50	69
6.70	67
4.75	65
3.35	62

Sieve (mm)	Total % Passing
2.00	55
1.18	49
0.600	41
0.425	36
0.300	30
0.212	25
0.150	20
0.090	14
0.063	10

DL-13.30～13.70m

Solid Density: 2.34 t/m^3, Unit Weight: 1.67 t/m^3



Sieve (mm)	Total % Passing
63.0	---
53.0	100
37.5	97
26.5	96
19.0	90
13.2	83
9.50	78
6.70	73
4.75	68
3.35	65

Sieve (mm)	Total % Passing
2.00	59
1.18	55
0.600	49
0.425	46
0.300	43
0.212	39
0.150	35
0.090	29
0.063	23

資料 6.2　波浪解析

(1) 波浪解析手法

対象地点に来襲する波浪は、図 A6.2-1 に示すように、1) 南太平洋で発生する波浪と、2)New Georgia Sound 内で発生する波浪に分類できる。南太平洋で発生する波浪は、Santa Isabel 島と Malaita 島の間の Indispensable Strait から侵入し、Florida 諸島による遮蔽の影響を受けつつ、対象地点（ホニアラ港沖合）に到達する。一方、New Georgia Sound で発生する波浪は、対象地点に直接到達する。これら 2 種類の波浪を合成し、ホニアラ港沖合に到達する波浪を求めた。本件では、この手法により、通常時と異常時（設計波）について、それぞれ解析を行った。図 A6.2-2 に解析フローを示す。

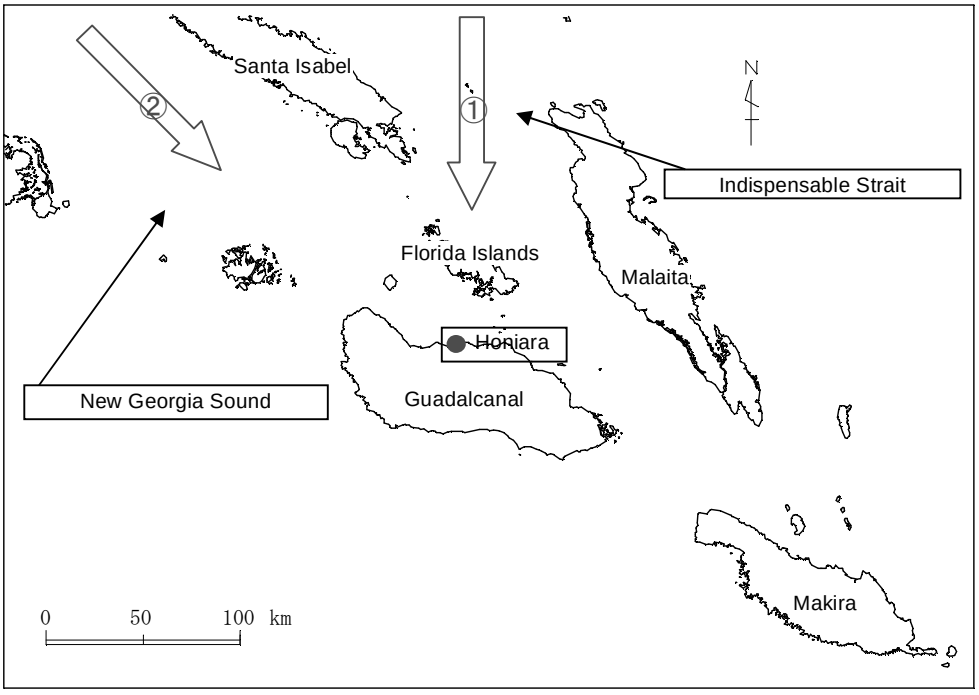


図 A6.2-1　対象地点の波浪発生海域

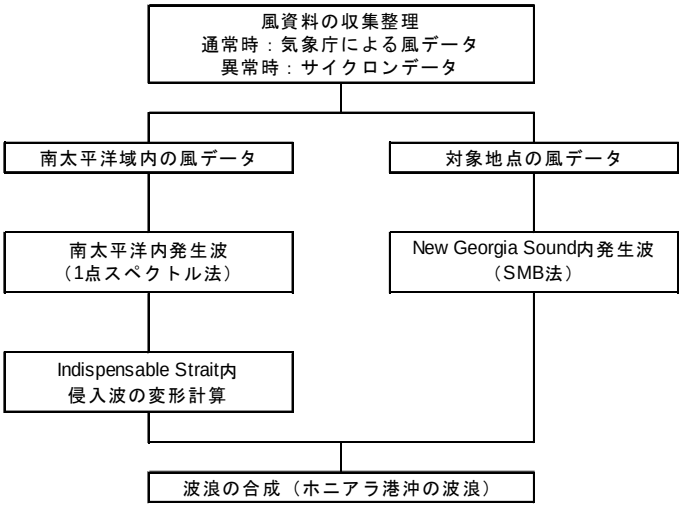


図 A6.2-2　対象地点での波浪解析フロー

南太平洋で発生する波浪は、「1 点スペクトル法」を用いて推算した。この方法は、風波及びうねりの発生・発達・伝搬において波浪の不規則性を取り入れながら、推算対象地点から放射状に伸びる計算格子点上で、波浪を推算する手法である。図 A6.2-3 は、「1 点スペクトル法」に用いる推算対象点と波浪推算格子点の位置を示したものである。

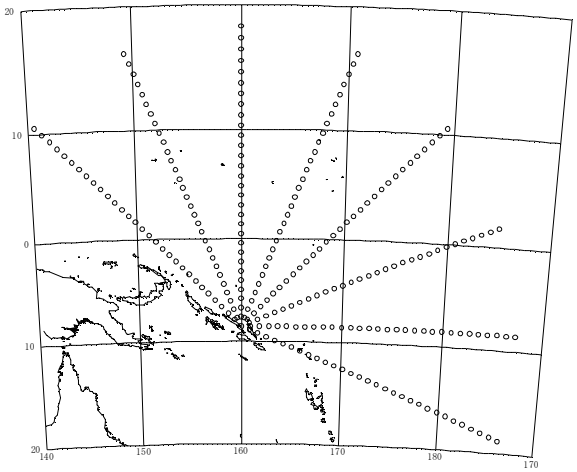


図 A6.2-3　推算対象点及び推算格子点位置図

一方、New Georgia Sound 内で発生する波浪については、「SMB 法」を用いて波浪推算を行った。この方法は、風向、風速データと対象風向毎の吹送距離のデータから波浪諸元を求める手法である。吹送距離については、風向の変化や風域の幅を考慮し、有効吹送距離を算定して用いた。図 A6.2-4 は、New Georgia Sound 内発生波の推算に用いた有効吹送距離の計算例（図の場合は、波向 NW）、表 A6.2-1 は有効吹送距離の一覧を示したものである。New Georgia Sound 内発生波の有効吹送距離の最大値は、NNW 方向の 103km である。

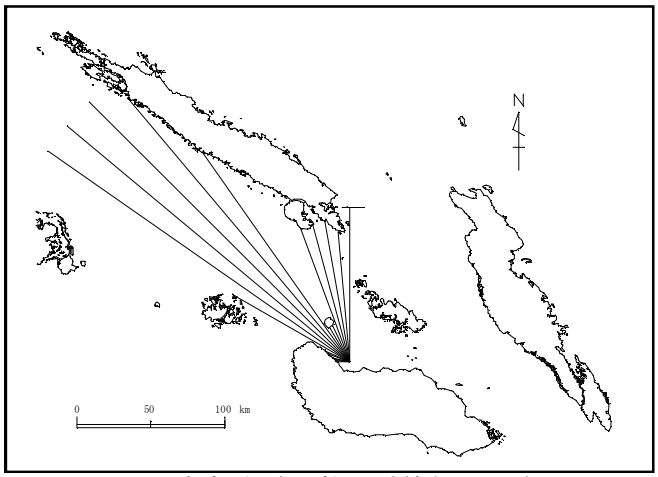


図 A6.2-4　有効吹送距離の計算例（風向 NW）

表 A6.2-1　有効吹送距離（New Georgia Sound 内発生波）

風　向	WNW	NW	NNW	N	NNE	NE	ENE	E
有効吹送距離(km)	73.9	97.7	103.3	70.7	50.1	52.5	59.5	53.6

(2) 通常時波浪の推算結果（ホニアラ港沖）

1) 南太平洋で発生する波浪

南太平洋の風の平面データ（気象庁資料）から、「1 点スペクトル法」を用いて、南太平洋内で発生する波浪の推算を行った。推算期間は 2002～2006 年の 5 年間である。計算結果より、Indispensable Strait 沖の波浪頻度表を表 A6.2-3，4 に示す。

風向の出現率が高い ESE の波浪が卓越し、全体の 56%程度を占め、続いて NNE、NE の順になっている。波高は最大で 3.5m程度である。また周期は 4～10 秒程度に分布しているが、最も出現率が高いのは 6～9 秒である。通年において、波高 1m、2m、3m 以上となる出現率はそれぞれ 38.6%、4.3%、0.2%である。

この波浪について、Indispensable Strait 内に侵入する波浪の変形計算を、エネルギー平衡方程式を解く方法を用いて行った。変形計算結果例を図 A6.2-5 に示す。波浪変形計算における波浪の周期は、推算された波浪の頻度表から、8 秒に設定した。計算結果より、ホニアラ港沖での波高比及び入射波向を表 A6.2-2 に示す。

表 A6.2-2　波浪変形計算結果（Indispensable Strait 内侵入波）

沖波波向	NW	NNW	N	NNE	NE	ENE	E	ESE
波高比	0.35	0.33	0.37	0.36	0.28	0.13	0.13	0.07
入射波向	NW	NNE	NNE	NNE	NNE	ENE	ENE	ENE

2) New Georgia Sound 内で発生する波浪

対象地点における、風の時系列データ（気象庁資料）から、「SMB 法」を用いて、New Georgia Sound 内で発生しホニアラ港沖合に到達する波浪を推算した。推算結果は表 A6.2-5，6 に示すとおりである。波向は WNW～N～E に広く分布している。ESE～S～W については、風の出現率は高いものの、対岸距離が短いため、高波浪の出減率は小さくなっている。周期は 0～5 秒程度まで分布しており、南太平洋発生波と較べると短周期である。通年において、波高 1m、1.5m、2m 以上となる出現率はそれぞれ 3.3%、0.9%、0.3%である。

3) 南太平洋で発生する波浪と New Georgia Sound 内で発生する波浪の合成

波高はエネルギー合成法、周期は谷本・木村の方法（港研報告 Vol.25,No,2）を用いて、波浪の合成を行った。合成波の波向は、合成する 2 つの波浪のうち、波高の大きいものの波向を採用した。計算結果より、波浪の頻度表を表 A6.2-7, 8 に、波向分布図を図 A6.2-6 に示す。

波向は WNW～N～E に広く分布しているが、出現率が高いのは、ENE 及び NNE である。これは、南太平洋で発生し海峡内へ侵入した波浪の影響と考えられ、波高は比較的小さい。一方、波向 WNW から NNW の波浪は、New Georgia Sound 内で発生した波浪と考えられ、出現率は合計で 11.6%程度であるが、比較的高波の出現率が高く、最大 3.2m 程度に達している。周期は、幅広く分布しているが、波高 0.5m を超える波浪の周期は、3～10 秒程度、波高 1.0m を超える波浪の周期は、3～7 秒程度である。通年において、波高 0.5m、1m、1.5m、2m 以上となる出現率はそれぞれ、14.2%、4.0%、1.1%、0.5%である。また、季節的にみると、12～5 月に高波浪の出現する割合が多くなっている。

表 A6.2-3　波向別波高階級別頻度表（Indispensable Strait 沖、通年、2002～2006 年）

WAVE DIRECTION	U.K.	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
WAVE HEIGHT(M)																		
CALM	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0
0.00 - 0.50	0 .0	1038 2.4	2564 5.9	1507 3.4	77 .2	138 .3	3294 7.5	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	250 .6	486 1.1	9354 21.3
0.50 - 1.00	0 .0	1200 2.7	3256 7.4	1899 4.3	178 .4	526 1.2	9344 21.3	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	736 1.7	487 1.1	17626 40.2
1.00 - 1.50	0 .0	637 1.5	1260 2.9	497 1.1	232 .5	204 .5	7083 16.2	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	598 1.4	379 .9	10890 24.9
1.50 - 2.00	0 .0	171 .4	111 .3	16 .0	7 .0	69 .2	3399 7.8	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	302 .7	22 .1	4097 9.4
2.00 - 2.50	0 .0	31 .1	4 .0	0 .0	0 .0	39 .1	1213 2.8	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	134 .3	8 .0	1429 3.3
2.50 - 3.00	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	257 .6	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	76 .2	13 .0	346 .8
3.00 - 3.50	0 .0	2 .0	0 .0	0 .0	0 .0	0 .0	59 .1	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	7 .0	1 .0	69 .2
3.50 - 4.00	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	6 .0	0 .0	6 .0
4.00 - 5.00	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0
5.00 - 6.00	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0
6.00 - 7.00	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0
7.00 -	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0
TOTAL	0 .0	3079 7.0	7195 16.4	3919 8.9	494 1.1	976 2.2	24649 56.3	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	2109 4.8	1396 3.2	43817 100.0

表 A6.2-4　波高・周期階級別頻度表（Indispensable Strait 沖、通年、2002～2006 年）

WAVE PERIOD(S)	CALM	0- 1	1- 2	2- 3	3- 4	4- 5	5- 6	6- 7	7- 8	8- 9	9-10	10-11	11-12	12-13	13-14	14-	TOTAL
WAVE HEIGHT(M)																	
CALM	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0
0.00 - 0.50	0 .0	0 .0	0 .0	0 .0	0 .0	27 .1	260 .6	1004 2.3	4293 9.8	3529 8.1	216 .5	25 .1	0 .0	0 .0	0 .0	0 .0	9354 21.3
0.50 - 1.00	0 .0	0 .0	0 .0	0 .0	0 .0	357 .8	2258 5.2	3400 7.8	4617 10.5	5231 11.9	1690 3.9	72 .2	1 .0	0 .0	0 .0	0 .0	17626 40.2
1.00 - 1.50	0 .0	0 .0	0 .0	0 .0	0 .0	58 .1	2320 5.3	3473 7.9	1951 4.5	1462 3.3	1360 3.1	243 .6	16 .0	7 .0	0 .0	0 .0	10890 24.9
1.50 - 2.00	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	460 1.0	2017 4.6	1024 2.3	377 .9	132 .3	46 .1	28 .1	13 .0	0 .0	0 .0	4097 9.4
2.00 - 2.50	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	11 .0	708 1.6	558 1.3	107 .2	35 .1	10 .0	0 .0	0 .0	0 .0	0 .0	1429 3.3
2.50 - 3.00	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	125 .3	186 .4	35 .1	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	346 .8
3.00 - 3.50	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	1 .0	67 .2	1 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	69 .2
3.50 - 4.00	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	6 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	6 .0
4.00 - 5.00	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0
5.00 - 6.00	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0
6.00 - 7.00	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0
7.00 -	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0
TOTAL	0 .0	0 .0	0 .0	0 .0	0 .0	442 1.0	5309 12.1	10728 24.5	12702 29.0	10742 24.5	3433 7.8	396 .9	45 .1	20 .0	0 .0	0 .0	43817 100.0

表 A6.2-5　波向別波高階級別頻度表（New Georgia Sound 発生波ホニアラ港沖、通年、2002～2006年）

WAVE DIRECTION	U.K.	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
WAVE HEIGHT(M)																		
CALM	7	33	8	14	12	6	862	34	45	59	19	30	31	27	8	12	4	1211
	.0	.1	.0	.0	.0	.0	2.0	.1	.1	.1	.0	.1	.1	.1	.0	.0	.0	2.8
0.00 - 0.24	0	645	579	659	968	587	12361	7084	2728	1123	759	832	1417	2364	686	540	504	33836
	.0	1.5	1.3	1.5	2.2	1.3	28.2	16.2	6.2	2.6	1.7	1.9	3.2	5.4	1.6	1.2	1.2	77.2
0.25 - 0.49	0	279	238	430	847	678	0	0	0	0	0	0	0	0	489	305	315	3581
	.0	.6	.5	1.0	1.9	1.5	.0	.0	.0	.0	.0	.0	.0	.0	1.1	.7	.7	8.2
0.50 - 0.74	0	173	121	221	498	518	0	0	0	0	0	0	0	0	325	256	148	2260
	.0	.4	.3	.5	1.1	1.2	.0	.0	.0	.0	.0	.0	.0	.0	.7	.6	.3	5.2
0.75 - 0.99	0	124	91	72	278	360	0	0	0	0	0	0	0	0	269	177	99	1470
	.0	.3	.2	.2	.6	.8	.0	.0	.0	.0	.0	.0	.0	.0	.6	.4	.2	3.4
1.00 - 1.24	0	33	27	16	98	88	0	0	0	0	0	0	0	0	281	150	64	757
	.0	.1	.1	.0	.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	.6	.3	.1	1.7
1.25 - 1.49	0	12	7	0	4	19	0	0	0	0	0	0	0	0	194	47	9	292
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4	.1	.0	.7
1.50 - 1.74	0	4	0	0	0	8	0	0	0	0	0	0	0	0	88	69	4	173
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.2	.0	.4
1.75 - 1.99	0	0	0	0	0	2	0	0	0	0	0	0	0	0	61	31	4	98
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.2
2.00 - 2.24	0	0	0	0	0	1	0	0	0	0	0	0	0	0	41	47	4	93
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.2
2.25 - 2.49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	30	10	44
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1
2.50 - 2.74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	4	0	7
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2.75 - 3.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3.00 -	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
TOTAL	7	1303	1071	1412	2705	2267	13223	7118	2773	1182	778	862	1448	2391	2449	1670	1165	43824
	.0	3.0	2.4	3.2	6.2	5.2	30.2	16.2	6.3	2.7	1.8	2.0	3.3	5.5	5.6	3.8	2.7	100.0

表 A6.2-6　波高・周期階級別頻度表（New Georgia Sound 発生波ホニアラ港沖、通年、2002～2006 年）

WAVE PERIOD(S)	CALM	0- 1	1- 2	2- 3	3- 4	4- 5	5- 6	6- 7	7- 8	8- 9	9-10	10-11	11-12	12-13	13-14	14-	TOTAL
WAVE HEIGHT(M)																	
CALM	7	995	209	0	0	0	0	0	0	0	0	0	0	0	0	0	1211
	.0	2.3	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.8
0.00 - 0.24	0	18781	3575	4554	5876	1045	5	0	0	0	0	0	0	0	0	0	33836
	.0	42.9	8.2	10.4	13.4	2.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	77.2
0.25 - 0.49	0	0	153	3428	0	0	0	0	0	0	0	0	0	0	0	0	3581
	.0	.0	.3	7.8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	8.2
0.50 - 0.74	0	0	0	689	1571	0	0	0	0	0	0	0	0	0	0	0	2260
	.0	.0	.0	1.6	3.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	5.2
0.75 - 0.99	0	0	0	0	1457	13	0	0	0	0	0	0	0	0	0	0	1470
	.0	.0	.0	.0	3.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.4
1.00 - 1.24	0	0	0	0	234	523	0	0	0	0	0	0	0	0	0	0	757
	.0	.0	.0	.0	.5	1.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.7
1.25 - 1.49	0	0	0	0	0	292	0	0	0	0	0	0	0	0	0	0	292
	.0	.0	.0	.0	.0	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.7
1.50 - 1.74	0	0	0	0	0	162	11	0	0	0	0	0	0	0	0	0	173
	.0	.0	.0	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4
1.75 - 1.99	0	0	0	0	0	5	93	0	0	0	0	0	0	0	0	0	98
	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
2.00 - 2.24	0	0	0	0	0	0	93	0	0	0	0	0	0	0	0	0	93
	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
2.25 - 2.49	0	0	0	0	0	0	44	0	0	0	0	0	0	0	0	0	44
	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
2.50 - 2.74	0	0	0	0	0	0	2	5	0	0	0	0	0	0	0	0	7
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2.75 - 3.00	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3.00 -	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
TOTAL	7	19776	3937	8671	9138	2040	248	7	0	0	0	0	0	0	0	0	43824
	.0	45.1	9.0	19.8	20.9	4.7	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	100.0

表 A6.2-7　波向別波高階級別頻度表（ホニアラ港沖、通年、2002～2006 年）

WAVE DIRECTION	U.K.	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
WAVE HEIGHT(M)																		
CALM	0 .0	0 .0	0 .0	0 .0	8 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	8 .0
0.00 - 0.24	0 .0	223 .5	6522 14.9	302 .7	20515 46.8	289 .7	22 .1	689 1.6	420 1.0	219 .5	61 .1	28 .1	37 .1	58 .1	201 .5	511 1.2	134 .3	30231 69.0
0.25 - 0.49	0 .0	249 .6	3721 8.5	386 .9	876 2.0	634 1.4	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	392 .9	825 1.9	274 .6	7357 16.8
0.50 - 0.74	0 .0	180 .4	510 1.2	263 .6	519 1.2	551 1.3	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	326 .7	425 1.0	173 .4	2947 6.7
0.75 - 0.99	0 .0	127 .3	129 .3	79 .2	301 .7	362 .8	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	239 .5	175 .4	101 .2	1513 3.5
1.00 - 1.24	0 .0	47 .1	49 .1	33 .1	116 .3	103 .2	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	306 .7	179 .4	75 .2	908 2.1
1.25 - 1.49	0 .0	22 .1	11 .0	0 .0	7 .0	19 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	234 .5	52 .1	23 .1	368 .8
1.50 - 1.74	0 .0	7 .0	4 .0	0 .0	0 .0	7 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	86 .2	69 .2	4 .0	177 .4
1.75 - 1.99	0 .0	0 .0	0 .0	0 .0	0 .0	3 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	58 .1	29 .1	2 .0	92 .2
2.00 - 2.24	0 .0	0 .0	0 .0	0 .0	0 .0	1 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	55 .1	39 .1	5 .0	100 .2
2.25 - 2.49	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	29 .1	39 .1	4 .0	72 .2
2.50 - 2.74	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	4 .0	21 .0	9 .0	34 .1
2.75 - 3.00	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	2 .0	6 .0	0 .0	8 .0
3.00 -	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	2 .0	0 .0	2 .0
TOTAL	0 .0	855 2.0	10946 25.0	1063 2.4	22342 51.0	1969 4.5	22 .1	689 1.6	420 1.0	219 .5	61 .1	28 .1	37 .1	58 .1	1932 4.4	2372 5.4	804 1.8	43817 100.0

表 A6.2-8　波高・周期階級別頻度表（ホニアラ港沖、通年、2002～2006 年）

WAVE PERIOD(S)	CALM	0- 1	1- 2	2- 3	3- 4	4- 5	5- 6	6- 7	7- 8	8- 9	9-10	10-11	11-12	12-13	13-14	14-	TOTAL
WAVE HEIGHT(M)																	
CALM	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	8 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	8 .0
0.00 - 0.24	0 .0	559 1.3	8068 18.4	3925 9.0	1388 3.2	2394 5.5	4742 10.8	4175 9.5	2882 6.6	1464 3.3	350 .8	156 .4	60 .1	44 .1	11 .0	13 .0	30231 69.0
0.25 - 0.49	0 .0	0 .0	31 .1	2899 6.6	599 1.4	423 1.0	646 1.5	730 1.7	611 1.4	558 1.3	454 1.0	149 .3	79 .2	41 .1	26 .1	111 .3	7357 16.8
0.50 - 0.74	0 .0	0 .0	0 .0	348 .8	2004 4.6	152 .3	60 .1	121 .3	100 .2	70 .2	32 .1	10 .0	20 .0	10 .0	6 .0	14 .0	2947 6.7
0.75 - 0.99	0 .0	0 .0	0 .0	0 .0	1368 3.1	114 .3	0 .0	0 .0	13 .0	18 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	1513 3.5
1.00 - 1.24	0 .0	0 .0	0 .0	0 .0	179 .4	729 1.7	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	908 2.1
1.25 - 1.49	0 .0	0 .0	0 .0	0 .0	0 .0	368 .8	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	368 .8
1.50 - 1.74	0 .0	0 .0	0 .0	0 .0	0 .0	138 .3	39 .1	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	177 .4
1.75 - 1.99	0 .0	0 .0	0 .0	0 .0	0 .0	5 .0	87 .2	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	92 .2
2.00 - 2.24	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	100 .2	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	100 .2
2.25 - 2.49	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	72 .2	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	72 .2
2.50 - 2.74	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	31 .1	3 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	34 .1
2.75 - 3.00	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	8 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	8 .0
3.00 -	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	2 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	0 .0	2 .0
TOTAL	0 .0	559 1.3	8099 18.5	7172 16.4	5538 12.6	4323 9.9	5777 13.2	5047 11.5	3606 8.2	2110 4.8	836 1.9	315 .7	159 .4	95 .2	43 .1	138 .3	43817 100.0

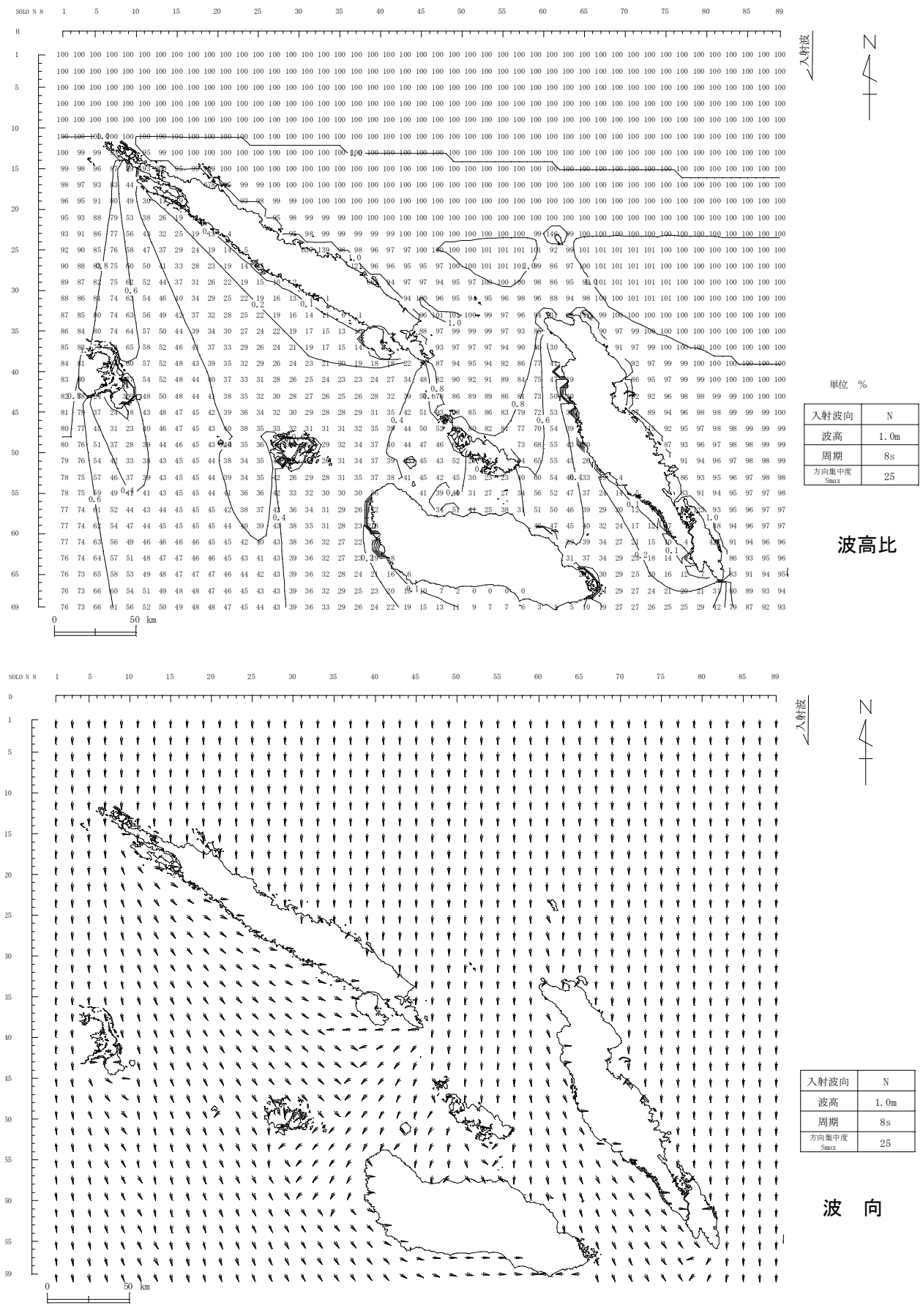


図 A6.2-5　波浪変形計算結果例（New Georgia Sound 内侵入波、波向：N、周期：8 秒）

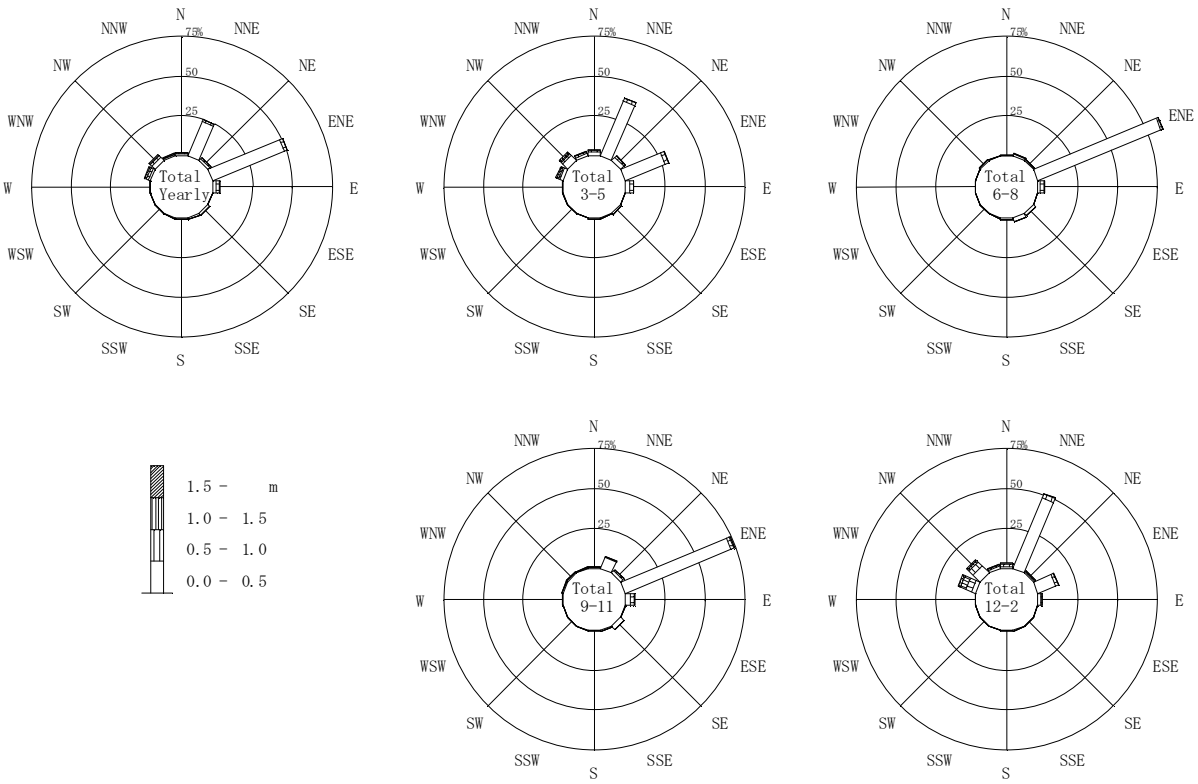


図 A6.2-6　波向分布図（ホニアラ港沖、通年、2002～2006 年）

(3) 異常時波浪（設計波）の推算

対象地点は、南太平洋で発生するサイクロンによる波浪の影響を受ける。ここでは、通常時の波浪解析で用いたのと同じ手法を用いて、サイクロン来襲時の波浪を検討した。

図 A6.2-7 は、1945 年～2011 年の間に「ソ」国周辺を通過したサイクロンのなかで、対象地点への影響が大きいと考えられるサイクロンを抽出して、その経路を示したものである。サイクロンは南緯 5°以南の海域で発生・発達し、主として南側に向かって進行する。「ソ」国は南緯 8～10°付近に位置しているが、この付近の海域では、サイクロンは発達途上にあり、波浪が十分に発達する前の段階にあるものと考えられる。また、サイクロンのあるものは SW 方向に、あるものは SE～E 方向に進行するというように、その進行経路にはバラツキが多い。

1) 南太平洋で発生する波浪

「1 点スペクトル法」を用いて、Indispensable Strait に来襲する波浪を推算した。図 A6.2-7 に示したサイクロンのうち、対象に地点に対する影響が大きいと考えられる、1972 年 5～6 月のサイクロン（サイクロン番号 7231）、及び 1996 年 11 月のサイクロン（サイクロン番号 9606）、を選定し波浪推算を行った。図 A6.2-8，9 に推算結果を示す。最大波高は 5.53m、周期は 9.68 秒、波向は NNW であった。また、この間の対象地点周辺の風況は、風向 N～NNW、風速 25m/s 程度であり、吹送時間は 3 時間程度と推算された。

2) New Georgia Sound 内で発生する波浪

これらのサイクロンから、New Georgia Sound 内での波浪を推算した。上記サイクロン時の最大風速の風向は N～NW であり、対象地点であるホニアラ港沖から New Georgia Sound の方向は WNW～NW である。ここでは、危険側を考慮して、New Georgia Sound 方向と上記サイクロン時の風向が一致するものとした。New Georgia Sound の最大吹送距離は約 400km である。サイクロン時の最大風速は 25m/s、その最大継続時間は 3 時間である。これらの結果から、サイクロン時の最大波浪を SMB 法により求めると、波高 3.18m、周期 6.02s となる。

3) 南太平洋で発生する波浪と New Georgia Sound 内で発生する波浪の合成

通常時波浪の場合と同様に、南太平洋内発生波の Indispensable Strait 内侵入波と、New Georgia Sound 内発生波を合成すると、表 A6.2-9 のとおりとなる。これらを整理し、ホニアラ港沖の設計波浪を示したものが表 A6.2-10 である。波向については、サイクロンの経路や、New Georgia Sound 内の対岸距離、フロリダ島と対象地点との位置関係などを考慮し、NW～N と設定した。

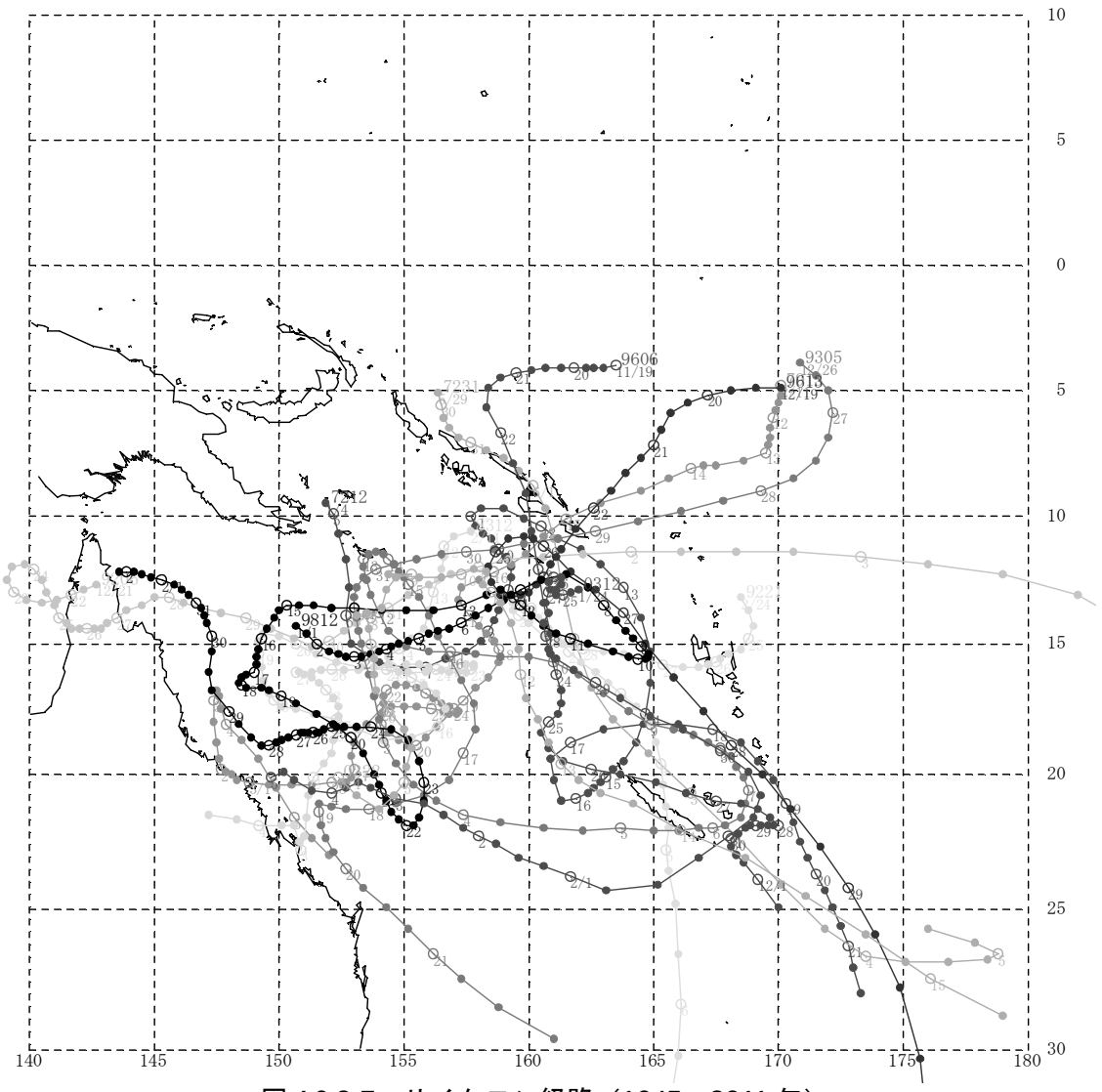


図 A6.2-7　サイクロン経路（1945～2011 年）

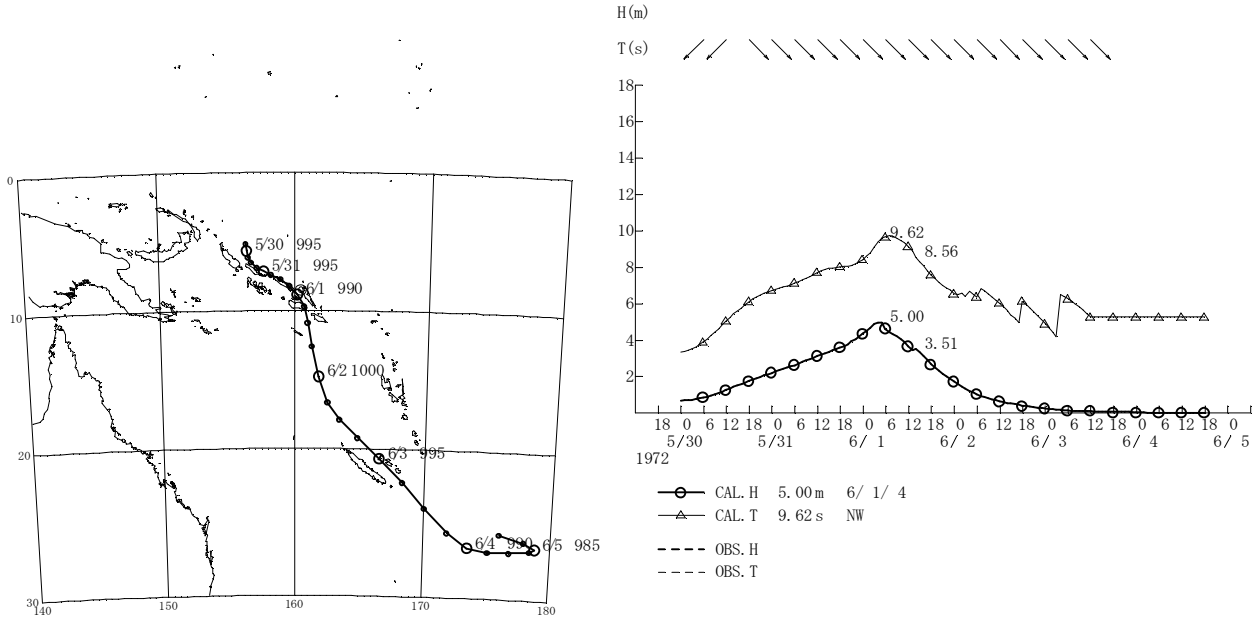


図 A6.2-8　波浪推算結果（サイクロン 7231、1972 年 5～6 月）

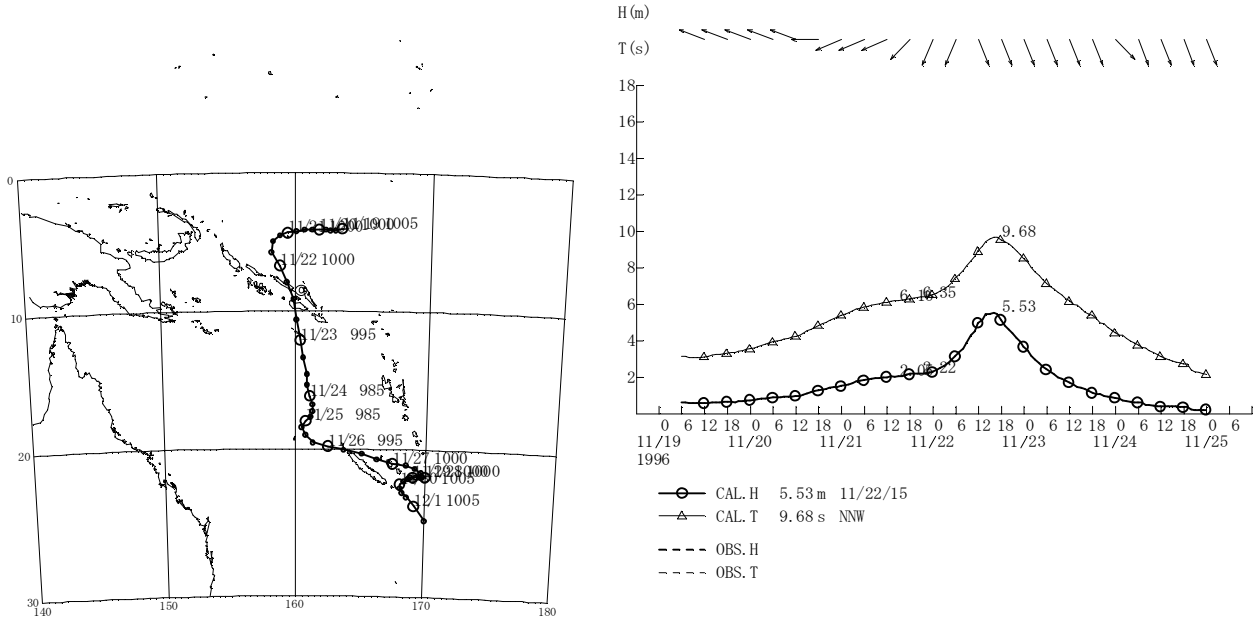


図 A6.2-9　波浪推算結果（サイクロン 9606、1996 年 11 月）

表 A6.2-9　ホニアラ港沖の波浪（サイクロン来襲時）

諸　　元	南太平洋 発生波	波高比 （海峡内侵入波）	南太平洋発生波 の侵入波	New Georgia Sound 内 発生波	合成波 (ホニアラ港沖)
波高（H）	5.53m	0.33	1.82m	3.18m	3.66m
周期（T）	9.68		10s	6.02s	6.7s
波　向	NNW		NNE	NW	NW

表 A6.2-10　ホニアラ港の設計波浪（沖波諸元）

波高（H）	3.66m
周期（T）	6.7s
波　向	NW～N

4) 岸壁前面における設計波の算定

表 A6.2-10 の波浪に対し、浅海域における波浪変形計算を実施し、ホニアラ港コンテナヤード岸壁前面の設計波浪を求めた。波浪変形計算は、エネルギー平衡方程式を解く方法を用いた。この計算方法は、防波堤や島などを陸地としてエネルギーを吸収させることにより、不規則波の回折現象も擬似的に取り入れた計算方法である。計算結果から計算対象領域の各格子点における、波高比、入射浪向などの緒元が求められる。

図 A6.2-10 は、変形計算の計算対象領域を示したものである。このように、計算領域は、東西、南北ともに約 2.5km で格子間隔は何れも 50m である。例として、波向 N による計算結果を図 A6.2-11 に示す。また、岸壁前面での波浪緒元（換算沖波波高、入射浪向）を整理した結果を表 A6.2-11 に示す。換算沖波波高は、沖波浪向 N の場合が最も大きく、2.78m、入射浪向は N25.4°E（岸壁への入射角は約 65°）となる。

表 A6.2-11　換算沖波波浪諸元

沖波波浪			岸壁前面での波浪緒元		
波向	波高	周期	屈折係数	換算沖波 波高(m)	入射波向
NW	3.66m	6.7s	0.53	1.94	N3.3°E
NNW	〃	〃	0.67	2.45	N13.3°E
N	〃	〃	0.76	2.78	N25.4°E

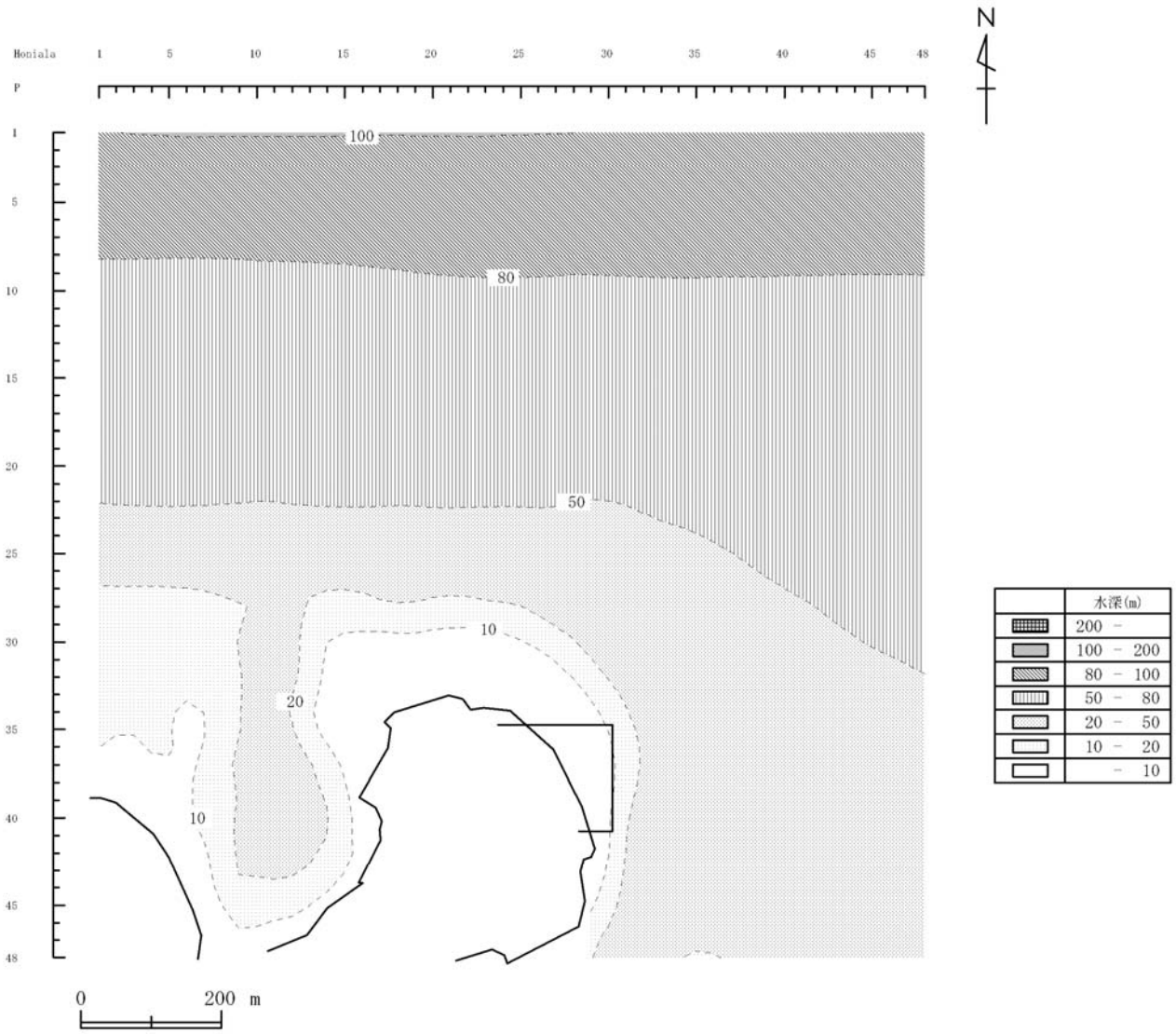
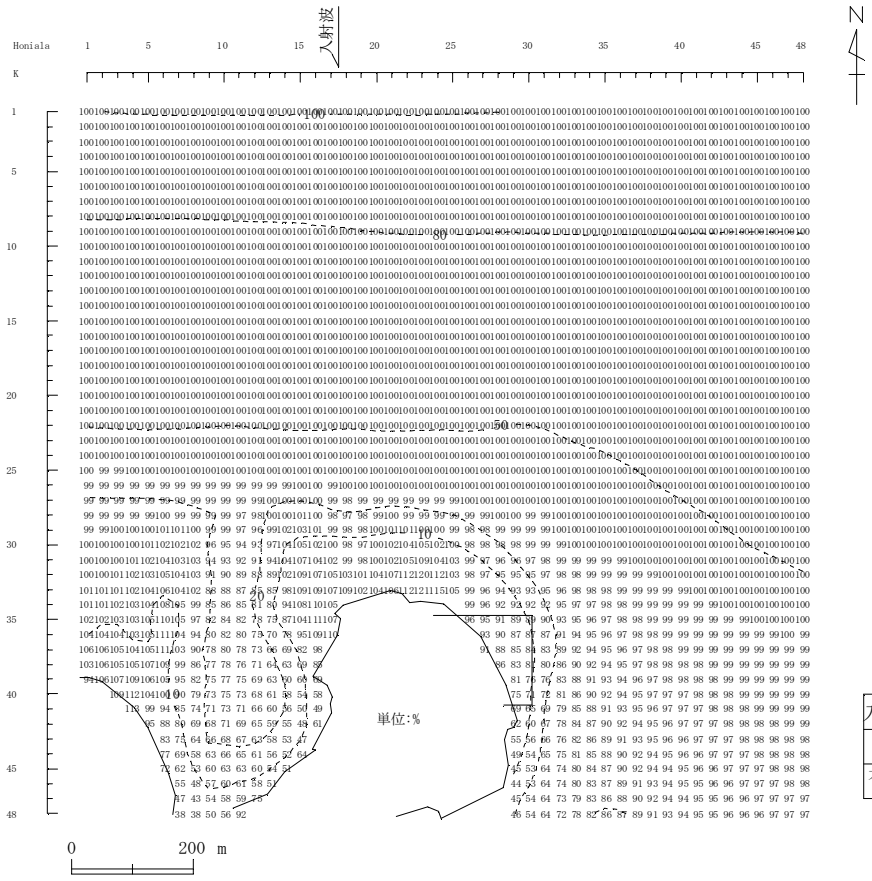
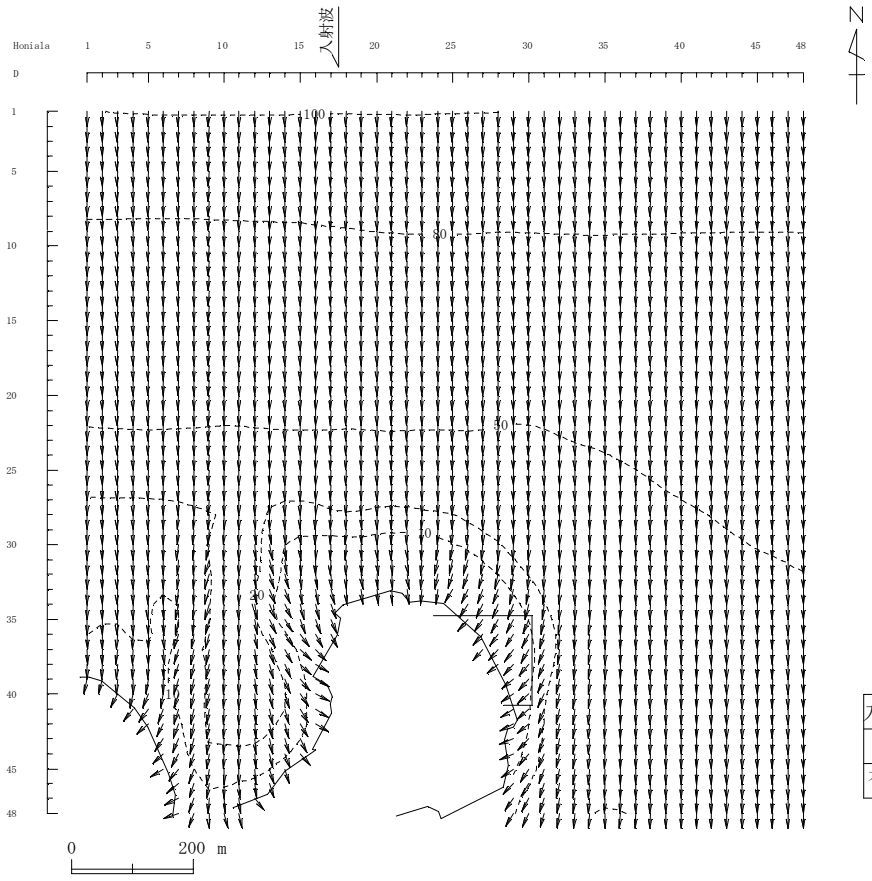


図 A6.2-10　計算領域図



屈折係数

入射波向	N
周期	6.7s
方向集中度 Smax	25



波　向

入射波向	N
周期	6.7s
方向集中度 Smax	25

図 A6.2-11　波浪変形計算結果例（設計波、波向 N）

資料 6.3　ホニアラ港周辺道路の交通量調査

(1) 交通量調査の概要

ホニアラ港の関連車両は、市街地の中心である Point Cruz 地区を東西に結ぶ幹線道路市内である Mendana Avenue から、Commonwealth Street などのアクセス道路を利用している。本交通量調査は、ホニアラ港国際埠頭に関連した交通量が Mendana Avenue の交通量にしめる割合について把握するために実施した。

調査は、現地調査期間中の 2013 年 3 月 25 日（月）から 3 月 31 日（日）の 1 週間で、交通量の多い昼間の 07:00～19:00 の 12 時間について実施した。なお、3 月 28 日(金)～4 月 1 日(月)の 4 日間は、復活祭のため休日である。

調査地点及び道路諸元は、図 A6.3-1，2 に示すとおりである。それぞれの調査地点における交通量の測定結果は、つぎに示すとおりである。

図 A6.3-1　交通量調査の調査点（A～C 地点）

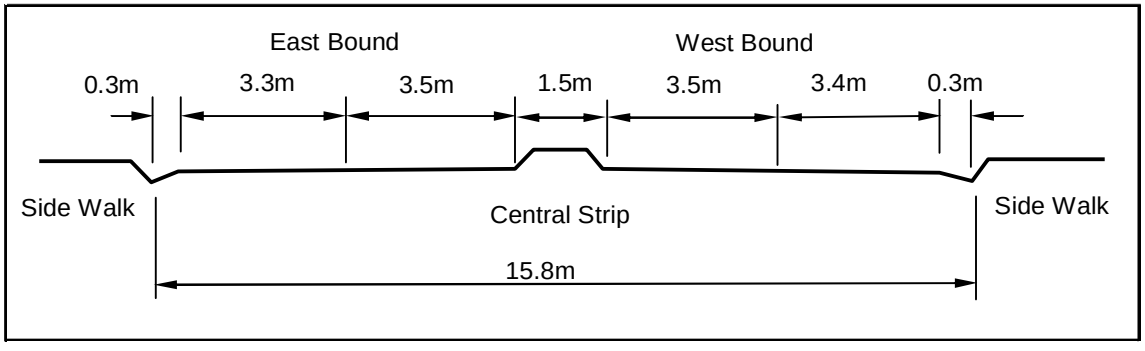


図 A6.3-2　Mendana Avenue の標準道路断面

(2) 調査地点 A の調査結果

1) 調査地点 A における流入交通量

表 A6.3-1　調査地点 A における流入交通量の測定結果

Period		March 25 (Mon)			March 26 (Tue)			March 27 (Wed)			March 28 (Thu)			March 29 (Fri)			March 30 (Sat)			March 31 (Sun)			Grand Total		
From	To	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.
0700	0800	0	23	23	5	23	28	6	29	35	4	15	19	3	6	9	0	0	0	1	8	9	19	104	123
0800	0900	13	68	81	20	60	80	14	52	66	22	60	82	2	8	10	3	14	17	3	4	7	77	266	343
0900	1000	32	110	142	35	82	117	35	72	107	27	80	107	6	12	18	10	39	49	4	10	14	149	405	554
1000	1100	29	152	181	24	92	116	25	77	102	32	87	119	2	10	12	12	24	36	5	7	12	129	449	578
1100	1200	21	187	208	19	55	74	23	88	111	29	98	127	2	11	13	19	44	63	3	6	9	116	489	605
1200	1300	15	196	211	20	47	67	16	54	70	18	59	77	2	7	9	14	29	43	7	7	14	92	399	491
1300	1400	34	287	321	39	89	128	39	81	120	30	108	138	2	13	15	9	19	28	3	9	12	156	606	762
1400	1500	33	293	326	27	93	120	34	78	112	26	87	113	3	14	17	5	23	28	6	10	16	134	598	732
1500	1600	16	351	367	26	59	85	19	48	67	23	80	103	3	8	11	5	13	18	8	7	15	100	566	666
1600	1700	9	337	346	11	21	32	15	45	60	8	34	42	3	11	14	6	21	27	5	6	11	57	475	532
1700	1800	12	369	381	8	10	18	6	16	22	7	25	32	1	7	8	5	9	14	2	6	8	41	442	483
1800	1900	5	348	353	2	11	13	5	18	23	5	8	13	1	6	7	1	7	8	3	4	7	22	402	424
Total		219	2,721	2,940	236	642	878	237	658	895	231	741	972	30	113	143	89	242	331	50	84	134	1,092	5,201	6,293
% of Truck		7.4%			26.9%			26.5%			23.8%			21.0%			26.9%			37.3%			17.4%		

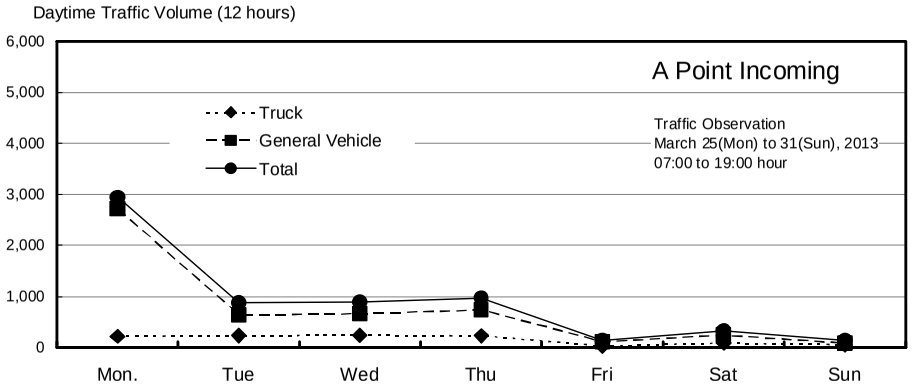


図 A6.3-3　調査地点 A における流入交通量の曜日別分布

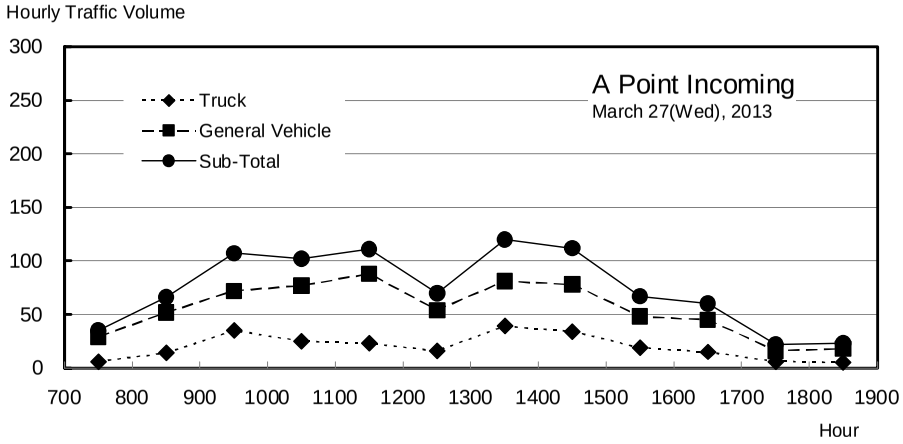


図 A6.3-4　調査地点 A における流入交通量の時間別分布

2) 調査地点 A における流出交通量

表 A6.3-2　調査地点 A における流出交通量の測定結果

Period		March 25 (Mon)			March 26 (Tue)			March 27 (Wed)			March 28 (Thu)			March 29 (Fri)			March 30 (Sat)			March 31 (Sun)			Grand Total		
From	To	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.
0700	0800	0	4	4	2	6	8	3	14	17	4	15	19	2	5	7	0	0	0	1	5	6	12	49	61
0800	0900	10	51	61	17	42	59	11	39	50	13	31	44	3	9	12	3	7	10	1	5	6	58	184	242
0900	1000	26	79	105	27	68	95	24	58	82	25	65	90	3	11	14	10	31	41	4	5	9	119	317	436
1000	1100	31	135	166	24	86	110	28	71	99	30	88	118	2	1	3	6	19	25	4	7	11	125	407	532
1100	1200	37	183	220	22	81	103	28	118	146	46	115	161	4	13	17	19	40	59	4	12	16	160	562	722
1200	1300	10	279	289	16	51	67	11	53	64	11	66	77	3	4	7	17	39	56	5	6	11	73	498	571
1300	1400	30	159	189	28	61	89	35	68	103	20	83	103	0	10	10	10	30	40	4	5	9	127	416	543
1400	1500	34	365	399	38	77	115	31	80	111	25	71	96	1	14	15	6	22	28	6	14	20	141	643	784
1500	1600	24	247	271	35	81	116	28	58	86	22	97	119	2	12	14	5	12	17	8	6	14	124	513	637
1600	1700	10	418	428	17	32	49	17	66	83	16	49	65	5	8	13	7	22	29	5	6	11	77	601	678
1700	1800	9	272	281	7	15	22	12	13	25	3	23	26	1	5	6	4	10	14	2	3	5	38	341	379
1800	1900	10	432	442	3	11	14	4	20	24	5	14	19	2	11	13	1	8	9	2	4	6	27	500	527
Sub-total		231	2,624	2,855	236	611	847	232	658	890	220	717	937	28	103	131	88	240	328	46	78	124	1,081	5,031	6,112
% of Truck		8.1%			27.9%			26.1%			23.5%			21.4%			26.8%			37.1%			17.7%		

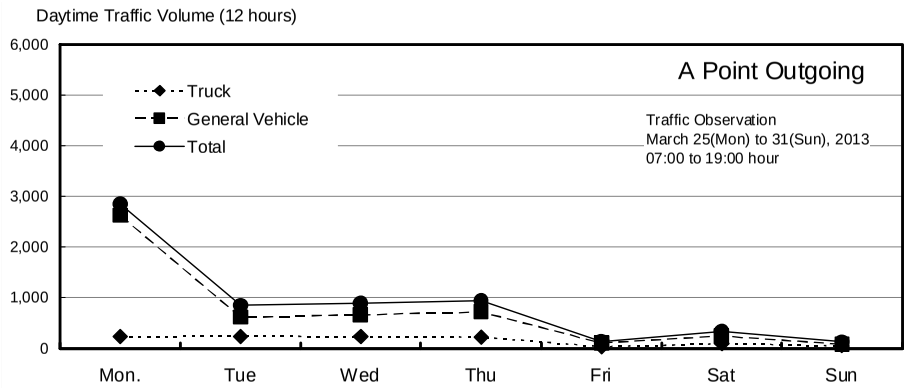


図 A6.3-5　調査地点 A における流出交通量の曜日別分布

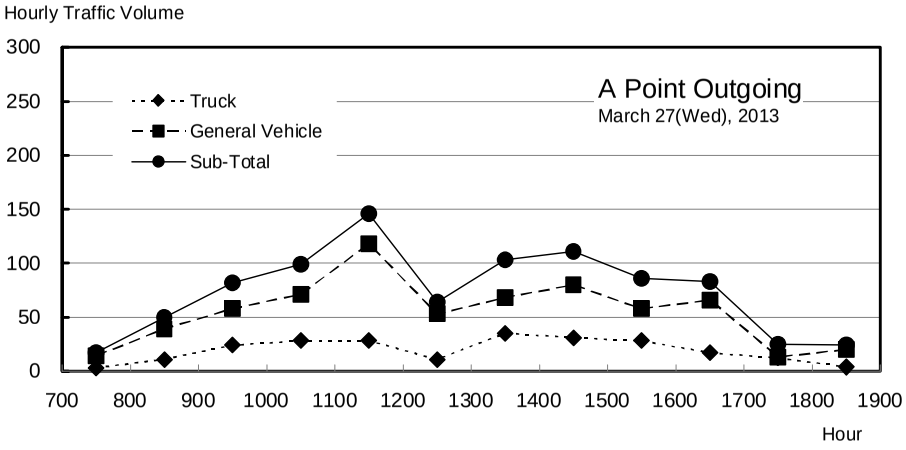


図 A6.3-6　調査地点 A における流出交通量の時間別分布

(3) 調査地点 B の調査結果

1) 調査地点 B における東方向交通量

表 A6.3-3　調査地点 B における東方向交通量の測定結果

Period		March 25 (Mon)			March 26 (Tue)			March 27 (Wed)			March 28 (Thu)			March 29 (Fri)			March 30 (Sat)			March 31 (Sun)			Grand Total		
From	To	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.
0700	0800	125	615	740	165	590	755	174	616	790	167	560	727	81	320	401	73	337	410	91	384	475	876	3,422	4,298
0800	0900	55	762	817	166	734	900	166	689	855	149	718	867	111	442	553	122	554	676	85	444	529	854	4,343	5,197
0900	1000	42	826	868	175	729	904	175	709	884	174	828	1,002	103	402	505	114	546	660	89	437	526	872	4,477	5,349
1000	1100	40	887	927	170	758	928	149	607	756	189	805	994	110	472	582	72	285	357	89	415	504	819	4,229	5,048
1100	1200	96	832	928	196	853	1,049	157	522	679	182	724	906	79	529	608	58	175	233	101	449	550	869	4,084	4,953
1200	1300	231	1,122	1,353	147	633	780	125	530	655	140	549	689	95	528	623	54	169	223	86	466	552	878	3,997	4,875
1300	1400	89	418	507	199	799	998	184	537	721	149	614	763	87	466	553	126	404	530	104	506	610	938	3,744	4,682
1400	1500	180	773	953	166	678	844	66	306	372	138	477	615	78	491	569	84	410	494	135	298	433	847	3,433	4,280
1500	1600	131	634	765	196	687	883	80	225	305	142	480	622	73	567	640	110	461	571	67	386	453	799	3,440	4,239
1600	1700	147	657	804	145	688	833	96	250	346	110	426	536	93	496	589	95	587	682	107	503	610	793	3,607	4,400
1700	1800	130	549	679	160	705	865	81	234	315	73	298	371	110	518	628	375	298	673	114	550	664	1,043	3,152	4,195
1800	1900	100	458	558	110	645	755	108	382	490	112	455	567	87	424	511	93	520	613	107	455	562	717	3,339	4,056
Sub-total		1,366	8,533	9,899	1,995	8,499	10,494	1,561	5,607	7,168	1,725	6,934	8,659	1,107	5,655	6,762	1,376	4,746	6,122	1,175	5,293	6,468	10,305	45,267	55,572
% of Truck		13.8%			19.0%			21.8%			19.9%			16.4%			22.5%			18.2%			18.5%		

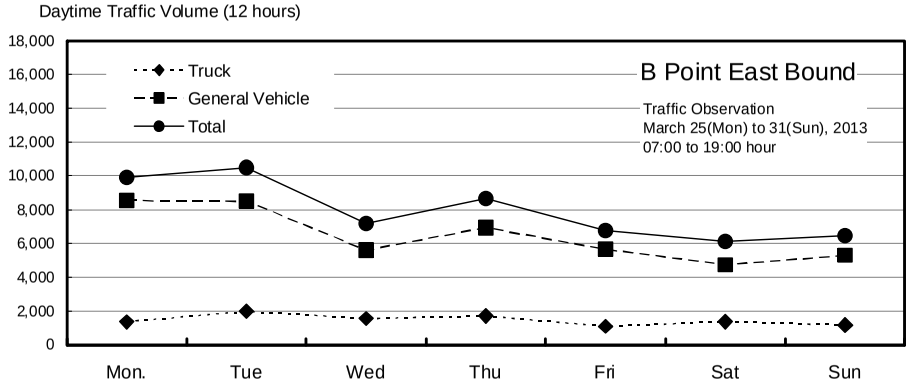


図 A6.3-7　調査地点 B における東方向交通量の曜日別分布

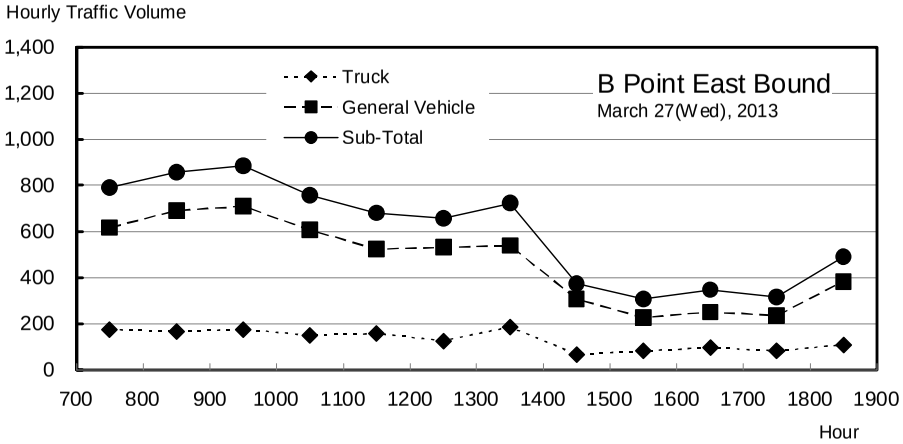


図 A6.3-8　調査地点 B における東方向交通量の時間別分布

2) 調査地点 B における西方向交通量

表 A6.3-4　調査地点 B における西方向交通量の測定結果

Period		March 25 (Mon)			March 26 (Tue)			March 27 (Wed)			March 28 (Thu)			March 29 (Fri)			March 30 (Sat)			March 31 (Sun)			Grand Total		
From	To	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.
0700	0800	22	117	139	33	513	546	36	507	543	40	583	623	17	348	365	26	322	348	20	328	348	194	2,718	2,912
0800	0900	66	559	625	53	869	922	46	844	890	33	740	773	14	372	386	26	549	575	13	478	491	251	4,411	4,662
0900	1000	65	899	964	48	893	941	58	707	765	37	826	863	18	390	408	34	613	647	21	497	518	281	4,825	5,106
1000	1100	63	814	877	60	825	885	48	718	766	42	800	842	29	558	587	45	613	658	20	523	543	307	4,851	5,158
1100	1200	64	823	887	52	854	906	55	711	766	48	688	736	17	646	663	39	516	555	16	490	506	291	4,728	5,019
1200	1300	42	850	892	51	825	876	41	749	790	46	644	690	23	604	627	28	511	539	32	587	619	263	4,770	5,033
1300	1400	55	841	896	50	831	881	48	689	737	47	685	732	19	576	595	38	542	580	27	627	654	284	4,791	5,075
1400	1500	49	847	896	60	783	843	51	653	704	35	611	646	34	635	669	42	570	612	28	541	569	299	4,640	4,939
1500	1600	55	792	847	40	756	796	42	608	650	35	685	720	21	622	643	23	587	610	18	434	452	234	4,484	4,718
1600	1700	43	753	796	38	727	765	31	482	513	37	647	684	22	537	559	33	618	651	24	482	506	228	4,246	4,474
1700	1800	70	842	912	66	838	904	47	555	602	52	935	987	12	546	558	23	660	683	16	323	339	286	4,699	4,985
1800	1900	45	614	659	30	758	788	33	652	685	35	552	587	18	522	540	27	614	641	19	440	459	207	4,152	4,359
Sub-total		639	8,751	9,390	581	9,472	10,053	536	7,875	8,411	487	8,396	8,883	244	6,356	6,600	384	6,715	7,099	254	5,750	6,004	3,125	53,315	56,440
% of Truck		6.8%			5.8%			6.4%			5.5%			3.7%			5.4%			4.2%			5.5%		

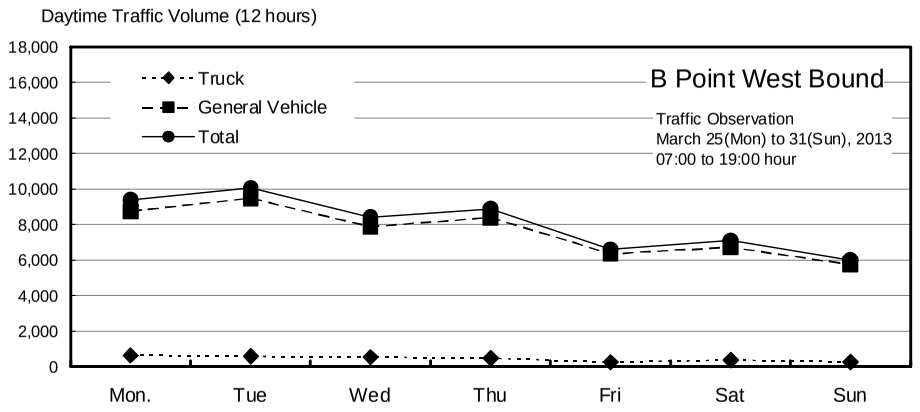


図 A6.3-9　調査地点 B における西方向交通量の曜日別分布

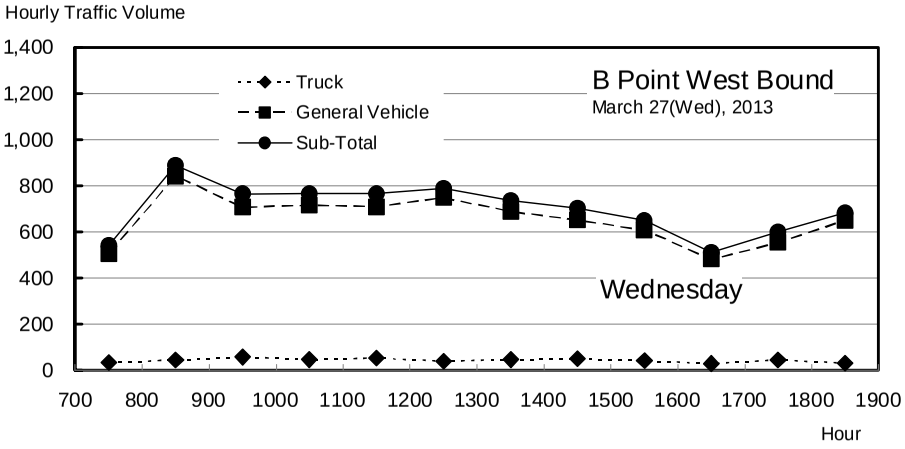


図 A6.3-10　調査地点 B における西方向交通量の時間別分布

(4)　調査地点 C の調査結果

1) 調査地点 C における東方向交通量

表 A6.3-5　調査地点 C における東方向交通量の測定結果

Period		March 25 (Mon)			March 26 (Tue)			March 27 (Wed)			March 28 (Thu)			March 29 (Fri)			March 30 (Sat)			March 31 (Sun)			Grand Total		
From	To	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.
0700	0800	10	507	517	72	749	821	67	759	826	70	722	792	25	405	430	74	465	539	29	497	526	347	4,104	4,451
0800	0900	157	614	771	87	861	948	114	902	1,016	90	981	1,071	38	581	619	86	826	912	47	567	614	619	5,332	5,951
0900	1000	92	937	1,029	115	1,166	1,281	120	980	1,100	87	1,033	1,120	44	510	554	73	860	933	40	605	645	571	6,091	6,662
1000	1100	127	815	942	120	991	1,111	145	1,079	1,224	91	1,234	1,325	56	575	631	105	841	946	62	622	684	706	6,157	6,863
1100	1200	117	963	1,080	210	999	1,209	131	1,119	1,250	101	1,012	1,113	78	867	945	76	767	843	110	723	833	823	6,450	7,273
1200	1300	47	873	920	80	1,154	1,234	111	1,069	1,180	117	919	1,036	80	722	802	86	926	1,012	64	667	731	585	6,330	6,915
1300	1400	116	889	1,005	121	975	1,096	111	881	992	126	984	1,110	40	505	545	80	806	886	50	682	732	644	5,722	6,366
1400	1500	141	768	909	117	1,094	1,211	115	689	804	76	770	846	42	609	651	102	1,018	1,120	41	602	643	634	5,550	6,184
1500	1600	102	588	690	143	1,011	1,154	112	666	778	100	774	874	52	720	772	105	955	1,060	46	548	594	660	5,262	5,922
1600	1700	121	837	958	115	1,008	1,123	84	665	749	94	720	814	45	638	683	100	635	735	78	607	685	637	5,110	5,747
1700	1800	91	953	1,044	93	985	1,078	81	731	812	113	717	830	44	537	581	14	833	847	59	652	711	495	5,408	5,903
1800	1900	67	645	712	87	1,084	1,171	92	719	811	75	674	749	48	563	611	59	708	767	82	679	761	510	5,072	5,582
Sub-total		1,188	9,389	10,577	1,360	12,077	13,437	1,283	10,259	11,542	1,140	10,540	11,680	592	7,232	7,824	960	9,640	10,600	708	7,451	8,159	7,231	66,588	73,819
% of Truck		11.2%			10.1%			11.1%			9.8%			7.6%			9.1%			8.7%			9.8%		

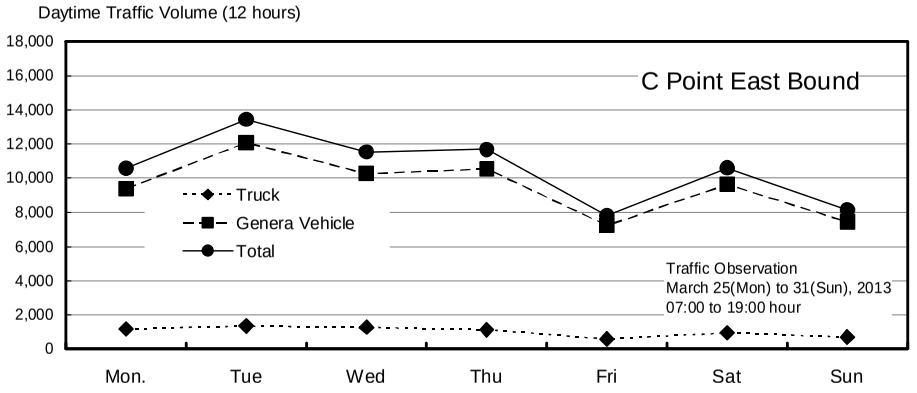


図 A6.3-11　調査地点 C における東方向交通量の曜日別分布

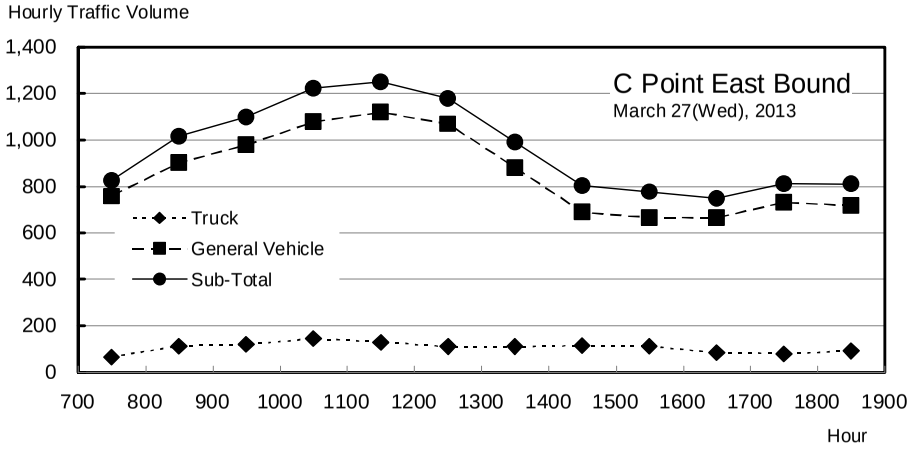


図 A6.3-12　調査地点 C における東方向交通量の時間別分布

2) 調査地点 C における西方向交通量

表 A6.3-6　調査地点 C における西方向交通量の測定結果

Period		March 25 (Mon)			March 26 (Tue)			March 27 (Wed)			March 28 (Thu)			March 29 (Fri)			March 30 (Sat)			March 31 (Sun)			Grand Total		
From	To	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.	Truck	General	Sub T.
0700	0800	64	676	740	72	1,000	1,072	82	920	1,002	72	748	820	44	615	659	51	469	520	31	589	620	416	5,017	5,433
0800	0900	145	1,288	1,433	139	1,259	1,398	119	1,116	1,235	95	1,173	1,268	31	525	556	58	811	869	31	719	750	618	6,891	7,509
0900	1000	166	1,362	1,528	111	1,953	2,064	151	1,132	1,283	129	1,283	1,412	36	467	503	96	943	1,039	39	750	789	728	7,890	8,618
1000	1100	139	1,135	1,274	165	1,300	1,465	152	1,061	1,213	127	1,058	1,185	57	827	884	92	1,005	1,097	49	612	661	781	6,998	7,779
1100	1200	132	1,152	1,284	128	1,164	1,292	146	1,062	1,208	132	1,119	1,251	42	868	910	97	905	1,002	37	755	792	714	7,025	7,739
1200	1300	112	1,197	1,309	115	1,199	1,314	111	1,087	1,198	115	1,062	1,177	75	859	934	95	848	943	51	773	824	674	7,025	7,699
1300	1400	140	1,150	1,290	119	1,194	1,313	131	1,107	1,238	86	1,039	1,125	48	755	803	116	1,102	1,218	48	714	762	688	7,061	7,749
1400	1500	153	1,147	1,300	136	1,016	1,152	130	1,013	1,143	74	784	858	62	836	898	68	747	815	51	701	752	674	6,244	6,918
1500	1600	120	1,095	1,215	156	1,133	1,289	121	988	1,109	108	1,006	1,114	38	839	877	84	1,213	1,297	39	649	688	666	6,923	7,589
1600	1700	103	1,039	1,142	110	967	1,077	100	920	1,020	97	960	1,057	35	700	735	66	905	971	40	601	641	551	6,092	6,643
1700	1800	114	939	1,053	127	1,119	1,246	127	928	1,055	101	908	1,009	41	737	778	98	952	1,050	31	575	606	639	6,158	6,797
1800	1900	37	408	445	62	962	1,024	56	807	863	72	702	774	40	732	772	63	850	913	39	620	659	369	5,081	5,450
Sub-total		1,425	12,588	14,013	1,440	14,266	15,706	1,426	12,141	13,567	1,208	11,842	13,050	549	8,760	9,309	984	10,750	11,734	486	8,058	8,544	7,518	78,405	85,923
% of Truck		10.2%			9.2%			10.5%			9.3%			5.9%			8.4%			5.7%			8.7%		

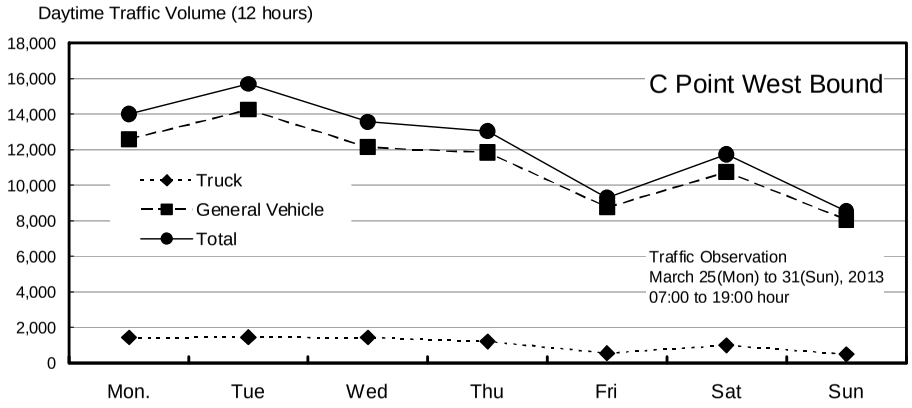


図 A6.3-13　調査地点 C における西方向交通量の曜日別分布

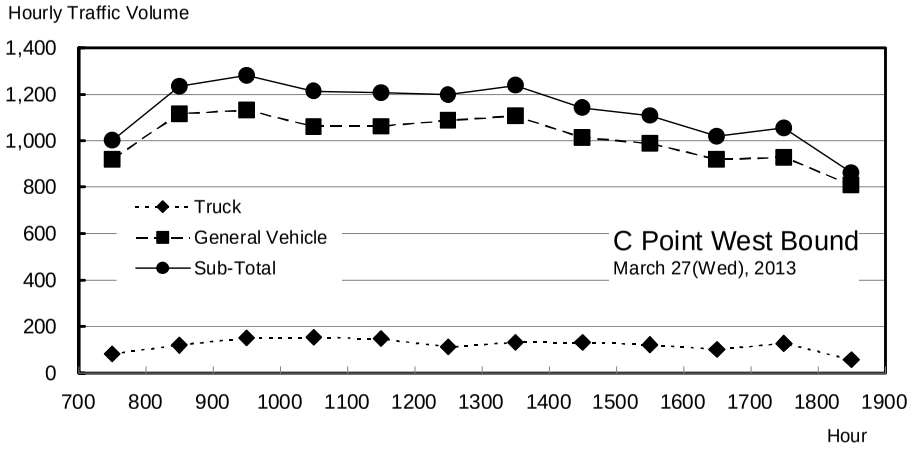


図 A6.3-14　調査地点 C における西方向交通量の時間別分布