

添付資料

添付資料 1 要請書

735-0050F0010
無償資金協力プロジェクト

735:モンテネグロ ポドゴリツァ市上水道システム緊急修復プロジェクト

525

Република Црна Гора
Главни град-Подгорица, Подгорица

Примљено: 30.07.07				
Org. јел.	Клас. знак	Редни број	Прилог	Вриједност
01	031	107	-4875	

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APPLICATION FORM

FOR

JAPAN'S GRANT AID

THE PROJECT

FOR

URGENT REHABILITATION OF WATER SUPPLY SYSTEM

In

PODGORICA CITY

送付先	国内部 <input type="checkbox"/>	国際協力人材部 <input type="checkbox"/>
	無償部 <input checked="" type="checkbox"/>	社会開発部 <input type="checkbox"/>
	人間開発部 <input type="checkbox"/>	地球環境部 <input checked="" type="checkbox"/>
	農村開発部 <input type="checkbox"/>	経済開発部 <input type="checkbox"/>
30- / 10.10.15		

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August 2007

Podgorica Water & Sewerage Corporation

City of Podgorica

Ministry of Economy

The Government of the Republic of Montenegro

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APPLICATION FORM FOR JAPAN'S GRANT AID

1. Date of Entry: August, 2007

2. Applicant: Podgorica Water & Sewerage Corporation

3. Project Title: Urgent Rehabilitation of Water Supply System

4. Sector: Water Supply

5. Project Type: Equipment Supply
(Including installation of Equipment)

6. Target Site:

(Province/Country Name) : Republic of Montenegro

(City/Town/Village Name) : Capital City of Podgorica

(From the metropolis) : 30 minutes by Car

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7. Requested Amount of Japanese Inputs: JPY 350,000,000. -

8. Desired fiscal year of implementation:

Survey : FY 2007

Implementation : FY 2008

9. Implementing Agency:

City of Podgorica Water & Sewerage Corporation

Person in charge : Mr. Pavle Radulovic

City Manager

Address : Njegoseva 13. 81000 Podgorica Montenegro

Telephone No. :+ 381 81 665 077, 665 042

Mr. Filip Makrid

Technical Director

Address : Vuka Karadzica 16, 81000 Podgorica

Montenegro

Telephone No. :+ 381 81 623 943

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10. Background of the Implementing Agency

Number of Officials and Staff in the Agency:

Management Level : 7 persons

Rank and File : 395

Permanent Employees : 319

Contractual and Casual Employees: 93

Annual Budget Allocation of the Company:

Company's annual budget (in EURO)

2002	2004	2005	2006	2007
7,000,000.00	7,000,000.00	7,000,000.00	7,000,000.00	7,000,000.00

Name of the Department/Office/Section responsible for the project:

Technical Department of the City of Podgorica Water & Sewerage

Corporation

Annual budget and staff members of responsible Office, for the last three years

Year	2003	2004	2005
Annual Budget (in EURO)	580,000.00	580,000.00	580,000.00
Number of staff members	237	237	237
Permanent Staff	210	210	210
Contractual staff	27	27	27

Mandate and functions of the Corporation relative to the whole Montenegro government bureaucracy

1. To supply Capital of Podgorica, Zeta district and settlement Tuzi with potable water

*Note: The potable water in Zeta district and Tuzi is supplied by Tube

2. To collect and dispose sewage on territory of Capital of Podgorica
3. To maintain the system for evacuation of storm waters on territory of Capital of Podgorica

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4. To maintain water supply systems in rural areas in municipalities that are in Capital of Podgorica
5. To construct and maintain water supply and sewage network in Capital of Podgorica
6. To maintain all hydro-technical equipment as well as water meters
7. To prepare project documentation for hydro-technical investments in Capital of Podgorica

Information on major projects, which have been implemented by the Company:

"Primary water supply network for Zeta District"

The project was started in 2000 and completed 2001. It considered construction of 9km of primary water supply network with PEHD pipes of diameter 450mm. Total value of the project was EURO900, 000.00. It was jointly financed by World Bank and Government (US\$650,000.00) of Montenegro. This was a first step in the long process of bringing potable water for over 5000 families that live in this area.

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"Primary water supply network for Gornja Zeta District"

The project was started in 2004 and completed 2006. It considered construction of 7.5km of primary water supply network with PEHD pipes of diameter from 150-250mm. Total value of the project was EURO650,000.00 and was funded by City of Podgorica and Government of Montenegro. This was another step that will allow around 800 families to receive potable water after construction of secondary network, which is planed for this year.

"Reconstruction of the Waist Water Treatment Plant"

The project was started in 2006 and it is still ongoing. It considers reconstruction of the entire electrical and mechanical equipment on the plant. Total value of the project is EURO1,650,000.00 and was funded by City of Podgorica and European Agency for Reconstruction.

11. Background of the request:

(Provide detailed information on the importance, and urgency of the

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requested project in terms of (i) the current problems in the sector, (ii) the current situation and problems found in the proposed site(s) to the extent possible, please provide statistics and other related data).

(i) Current problems of proposed sector:

Approximately 1/3 of population of State of Montenegro lives in Capital of Podgorica. Rapid migration by people from rural areas drastically changed number of inhabitants in last couple of years. From 135,000 inhabitants in 2000 it is almost 230,000 inhabitants today. Daily migration of persons that are working in Podgorica, IDP's, refugees, foreign citizens doing business or working for consular and diplomatic offices are not included in the number. Needs for infrastructure as well as other infrastructure couldn't follow this rapid increase of population, which caused big number of restrictions days in order to preserve stability of entire system. There was no logic in building new pipelines when there were no new wells and pump stations to fill them. Natural capacity exists but they are not exploited adequately.

(See Table 1)

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Table 1

District	2004		2005		2006	
	Water Supply (Year)	Population	Water Supply (Year)	Population	Water Supply (Year)	Population
Zeta	3.400.000 m ³	15.000	3.500.00 m ³	18.000	4.050.000 m ³	20.000
Tuzi	290.000 m ³	9.000	290.000 m ³	10.000	290.000 m ³	11.500
Podgorica	14.000.000 m ³	140.000	15.000.000 m ³	170.000	15.500.000 m ³	190.000

(ii) The current situation and problems found in the proposed site(s)

Existing pumps and other mechanical and electrical equipment are installed in late '80es. Having on mind financial situation in country in last 10 to 15 years and political problems (civil war in area) during the same period, these installations were not maintained in the proper manner. Despite the lack of waters sources City of Podgorica Water and Sewage company managed to keep entire system under control as it was possible at the time been. Water source Mareza is the most important one in the entire system and it is in unacceptable conditions with equipment that is beyond its mechanical usage life. With great difficulties company's employees are managing prevention of entire system breakdown.

There is also problem with monitoring of the existing system. At this

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point there is no monitoring system of any kind. Because of great losses it would be essential to establish database that could be updated frequently and create possibility to reduce losses which automatically means more water in the system for the citizens. This is even more important having on mind number of inhabitants that is rapidly increasing from year to year.

Third segment would be possibility to perform analysis of the drinking water. There is also no laboratory of any kind at this point in time. I believe that above mentioned exercise does not require further elaboration because health of population and possibility of spreading various diseases have to be prevented.

12. Project's Priority Relative to the National Development Plan / Public Investment Program of the Montenegrin government and Project's priority relative to the overall sector program.

(1) Relation between the project and the national development plan:

Sector of water supply and waste water disposal law is under construction, so we are not in the position to state accurate facts, at least not ones that will be valid in the time of approval of this request.

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(2) Relation between the project and the sector development:

(Related with the government's sector development plan is as follows.

Name of the sector: Water Sector)

It applies as for above stated.

13. Objectives

(1) Overall Goal

(Including the importance, necessity, and urgency of the project in the light of the current situation of the proposed sector)

The expected results of the project can be observed from several points.

Enough water for City of Podgorica would be general definition but it lies in water source improvement, monitoring system improvement and quality inspection improvement.

14. Outline of the project:

(1) Outline of the project

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(a) Equipment supply project:

- (i) Indicate the list of equipment, specification, quantity, unit price, total amount, etc. of the equipment

To supply 4 (four) pumps for New Pumping Station, Apparatus to avoid the existing vibration, Electric Panels, monitoring system and laboratory equipment.

New Pumping Station was constructed in 1985. including 4 (four) pumps, Valves, Middle Voltage Panels, Control panels etc. After almost 20 years operation, some parts were broken, and we need the urgent rehabilitation of equipment. Especially, the vibration of pumps affects the operation. Only 2 (two) pumps can be operated at this moment.

- (ii) Name and address of the site where the equipment will be supplied

Vuka Karadzica 16, 81000 Podgorica, Montenegro

- (iii) Criteria for selecting the equipment

The selected type of equipment is technologically compatible (similar) to existing one, and personnel of the company is, or will be trained to operate and maintain it.

(b) Operations and Maintenance of Equipment

(iv) Describe the mechanism by which the equipment will be operated and maintained

City of Podgorica Water and Sewage Company (WSC) created the skeletal force of Water Supply and Waste Waters Treatment Project (WS-WWT) and this organization is to be the management arm of this project. The WS-WWT also manages future water supply and waste water treatment projects to promote efficiency, streamline the bureaucracy and avoid overlapping of inter-related activities.

(v) The proposed number of personnel who will manage the project as well as their levels of technical capability

Complete technical sector of WSC will be included in implementation of this project. Seven engineers and over 230 other workers with various qualifications connected to this area of work.

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(vi) Proposed budget to operate and maintain the facilities and equipment

N/A

(c) Financial resources for the operation and maintenance of the facilities and equipment after project completion

100% of operation and maintenance cost is owed by beneficiaries.

(2) Breakdown of total amount of the equipment to be requested and its supporting data.

(JP Yen)

Item	Amount
1. Four (4) sets of Pump & Motor for New Pumping	100,000,000

Station	
2. Pipes & Valves	10,000,000
3. Control Panels	30,000,000
4. Monitoring Equipment	110,000,000
5. High Tension Panels	50,000,000
6. Laboratory equipment	20,000,000
7. Modification Work to avoid the vibration	10,000,000
8. Installation Work	20,000,000
Total	350,000,000

Note: Above estimation is for budgetary purpose only and is subject to the revision of further basic design study.

(3) Additional information

(a) Presence of existing facilities:

New Pumping Station: 4 pumps (1 standby)

Old Pumping Station : 3 pumps +(1 pump for Danilovgrad)

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(b) List of existing equipment

New Pumping Station :

4 of Vertical Pump, 320l/s x 90m x 1475rpm x 400kw

Old Pumping Station :

3 horizontal pumps__ 100l/s x 90m x 1475rpm x 130kw

1vertical pump, 220l/s x 90m x 1475rpm x 315kw

(c) Project site preparation (including expropriation)

(i) Availability of land:

Yes (Already prepared by City of Podgorica)

(ii) Current situation of project site

Owned by City of Podgorica

(iii) Data on natural conditions (e.g. climate)

(Concretely specify the names, years prepared, and agencies
published of such data)

Mediterranean

(iv) Security situation

(Give concrete information related to each project site, if more than

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one site is involved.)

Normal

(d) Related grant aid cooperation in the past

N/A

(e) Reconstruction of Old Pumping Station

After the rehabilitation of New Pumping Station, Podgoriza Water and Sewerage Corporation consider "Reconstruction of Old Pumping Station"

According the result of monitoring of System Loss in Podgorica.

15. Benefit and effects of the project:

(1) Area and population that will benefit from the project (specify the total area, if possible):

70% percent of population of City of Podgorica is supplied from this water source and they can be treated as direct beneficiaries but because of the fact that entire system will be strengthened entire population will benefit where remaining 30% of population will be traded as indirect beneficiaries.

(2) Expected social and economic effects (itemize concretely):

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Beneficiaries (directly and indirectly)

- Direct beneficiaries 161000 people
- Indirect beneficiaries 69000 people

16. Relation with technical cooperation, etc

(1) Feasibility study:

N/A

(2) Technical cooperation.

N/A

17. Is the project being proposed for assistance with other donors?

No

18. Official Development Assistance by third countries or international organizations in the same or related fields.

No

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19. Additional information which might be helpful in the evaluation of the project; (e.g., whether or not the implementing agency is being proposed to be privatized, if yes, please indicate the effect of such development with the requested project.)

No

Undertakings of the Government of the Republic of Montenegro

To facilitate the smooth and efficient implementation of the Project, the Government of the Republic of the Montenegro shall take the necessary measures:

- 1) Secure a lot or land necessary for the construction of the Facility and to clear the site (in case of construction of facilities);
- 2) Ensure prompt unloading and customs clearance at ports of disembarkation in the Republic of the Montenegro and internal transportation therein of the products purchased under the Grant;
- 3) Accord Japanese nationals whose services may be required in

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connection with the supply of the products and services under the Verified Contracts such facilities as may be necessary for their entry into the Republic of the Montenegro and stay therein for the performance of their work;

- 4) Ensure that the Facility constructed and other products purchased under the grant be maintained and used properly and effectively for the execution of the project; and,
- 5) Bear all expenses, other than those covered by the Grant, necessary for the execution of the Project;
- 6) Exempt Japanese nationals from all duties and related fiscal charges which may be imposed in the Republic of the Montenegro with respect to the import of the products and services supplied under the Verified Contracts;
- 7) The Government of the Republic of the Montenegro will, by itself or through its executing agencies, assume all fiscal levies and taxes imposed in the Republic of the Montenegro on Japanese nationals with respect to the payment carried out for the income accruing from the supply of the products and services under the Verified Contracts; and, in connection


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with numbers 7 and 8 above, the Government of the Republic of the Montenegro or its executing agencies will be responsible for the prompt liquidation or settlement of such fiscal levies, duties, taxes and other similar charges;

- 8) With regard to shipping and marine insurance of the products purchased under the Grant, the Government of the Republic of the Montenegro will refrain from imposing any restrictions that may hinder fair and free competition among the shipping and marine insurance companies

On Behalf of the Montenegrin
Government

Signed _____
Designation _____
Date _____



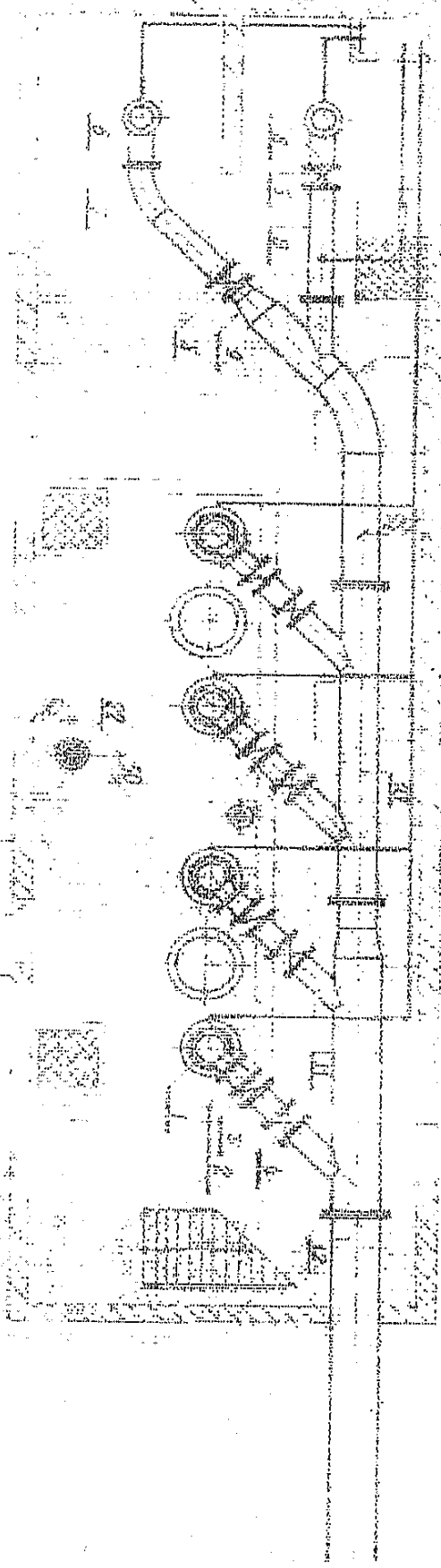
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List of ANNEX

1. Organization Chart
2. Sectional Drawings of New Pumping Station
3. Photo

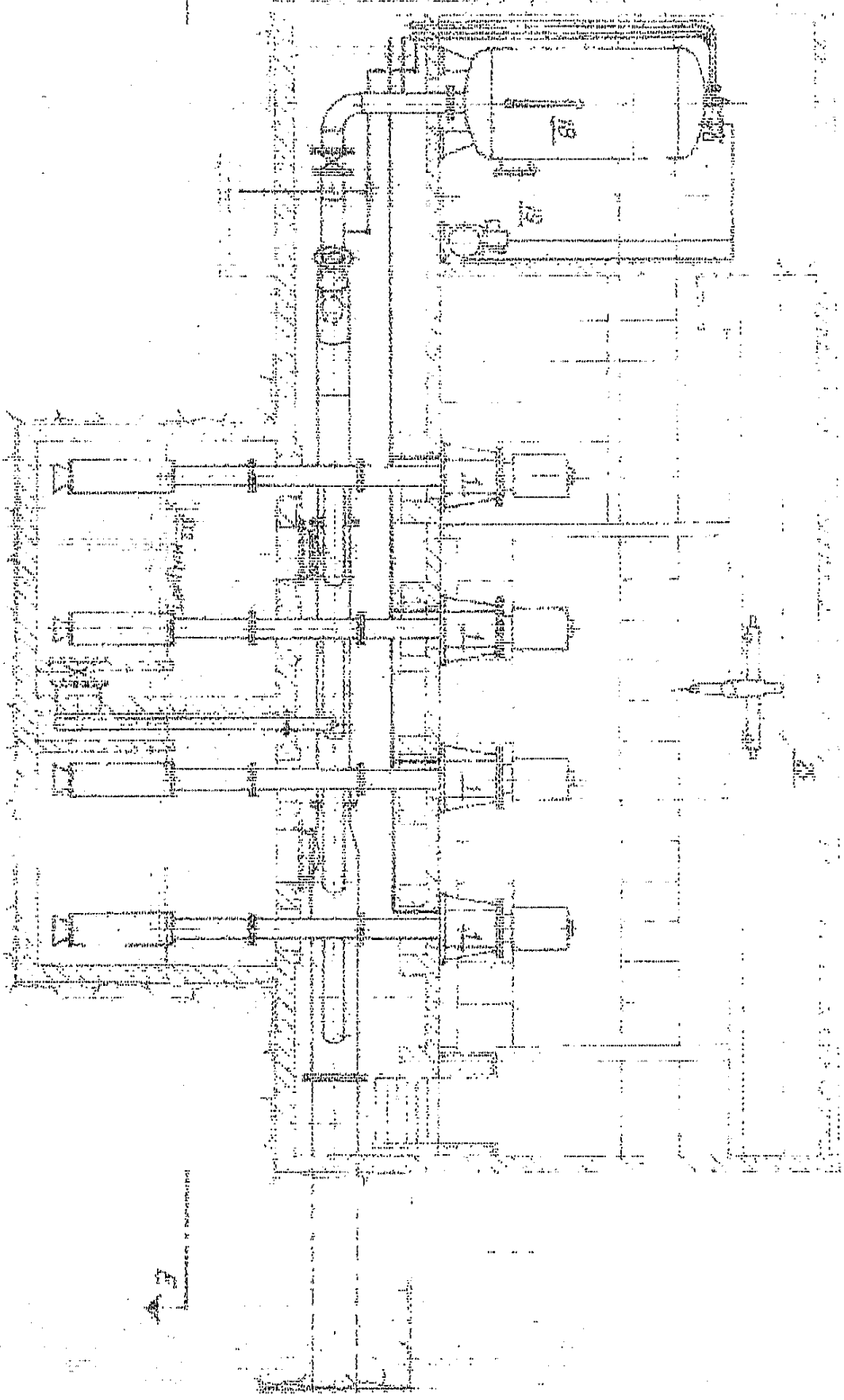
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PLANS 3-3



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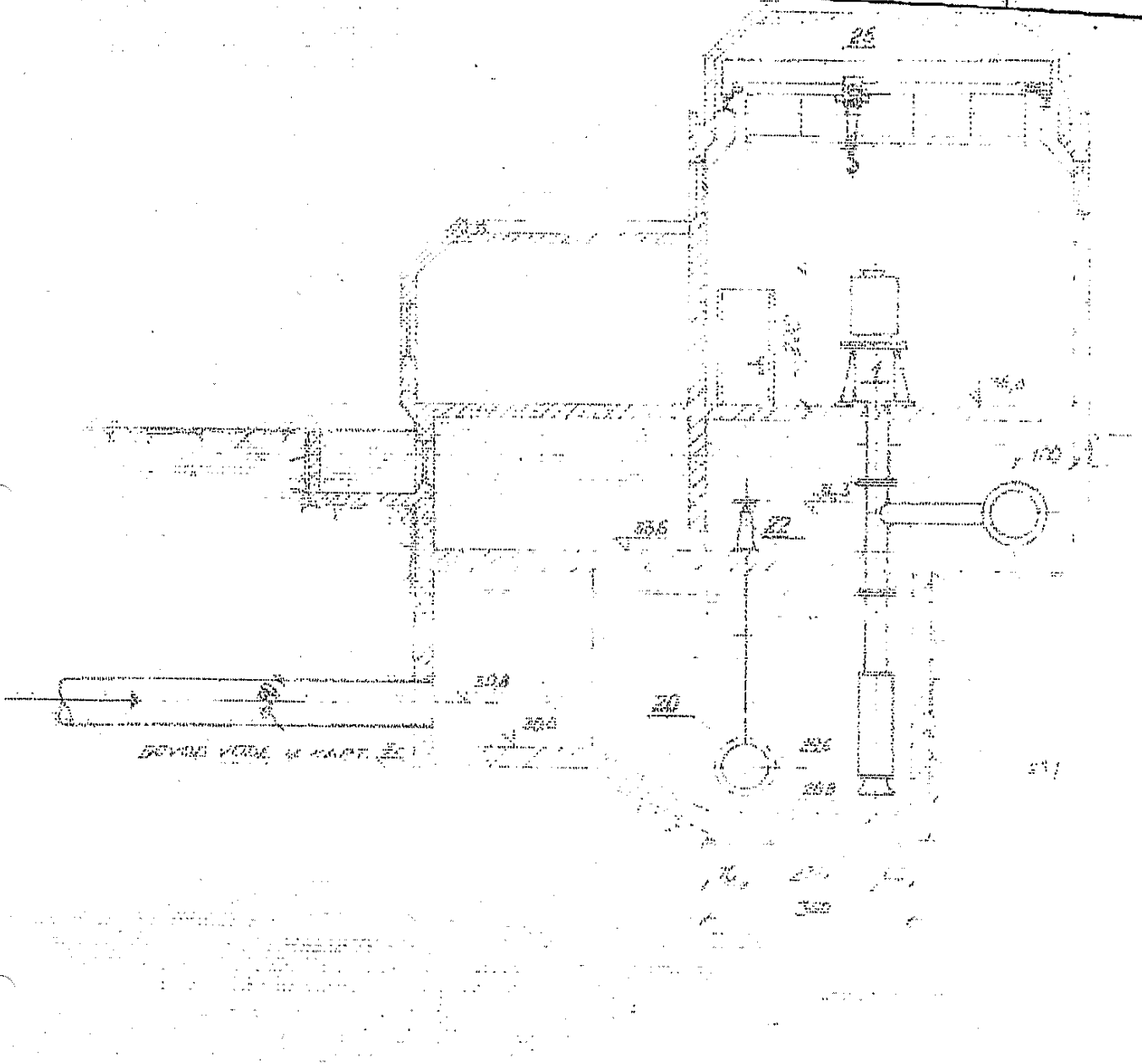
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Submissões e substituições

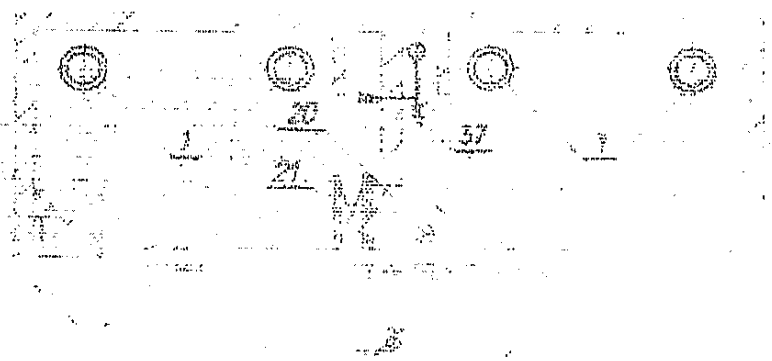
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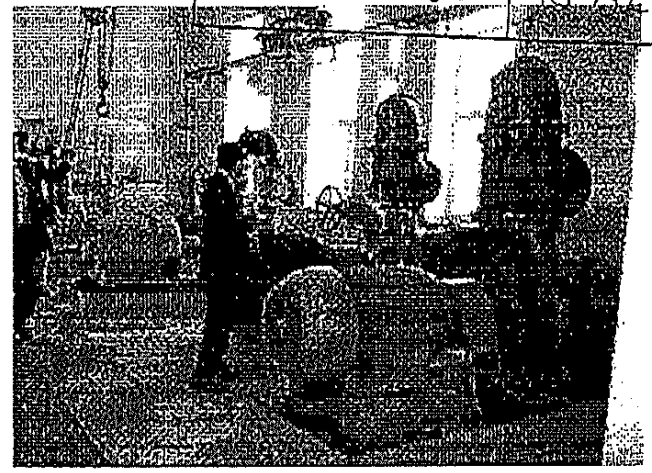
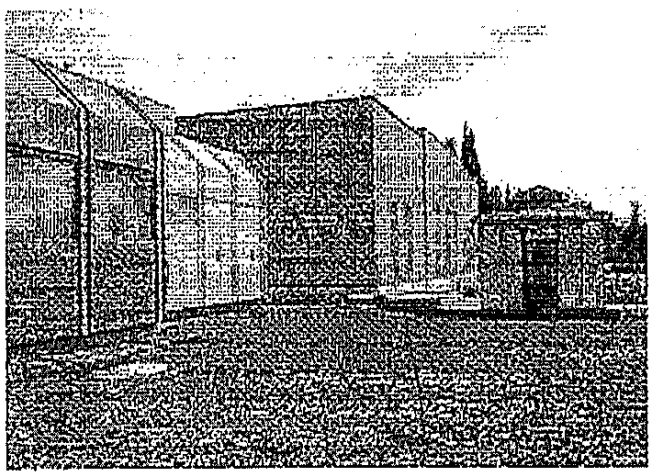


PRESJEK E-E

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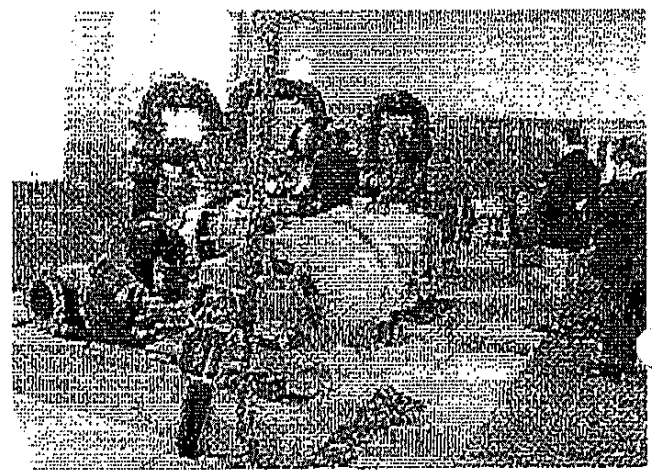
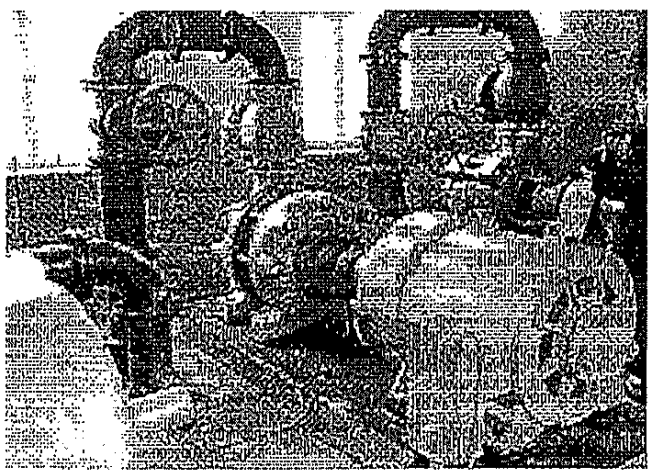


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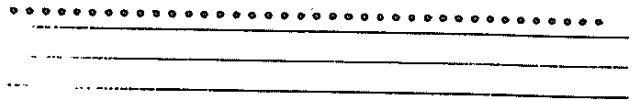
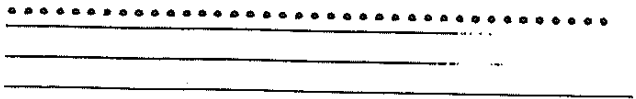
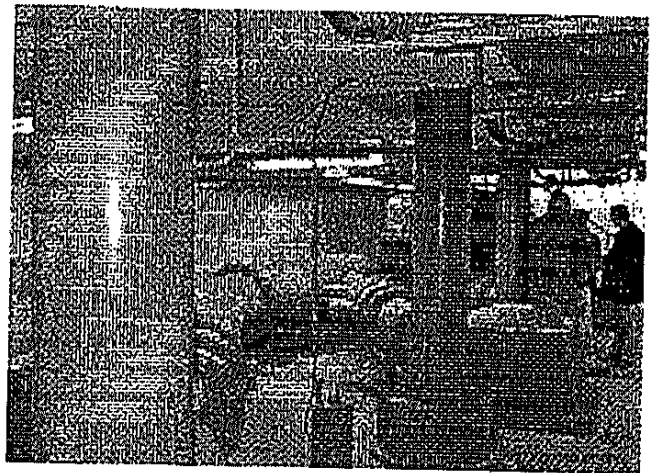
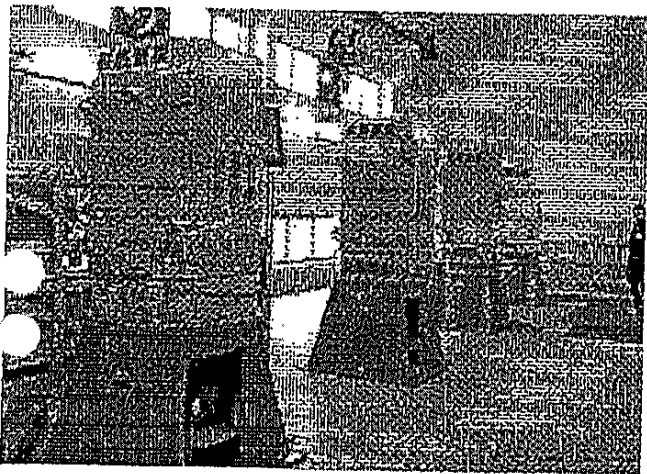
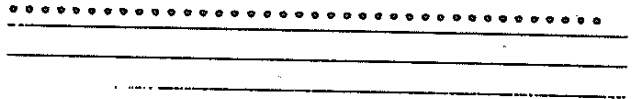
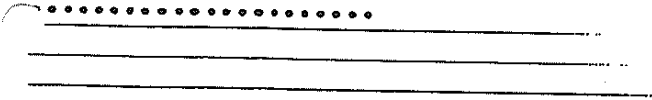
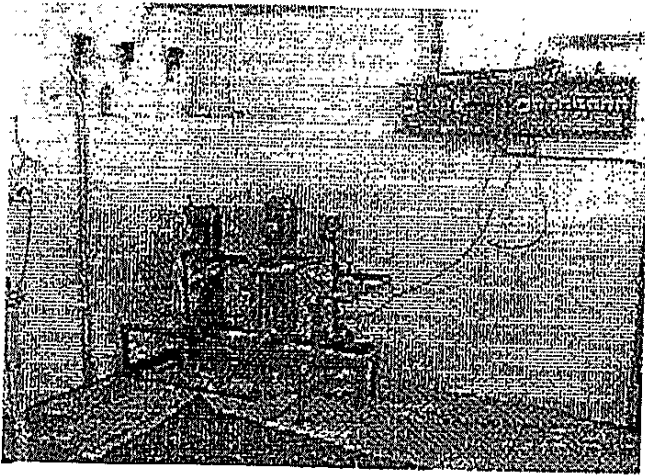
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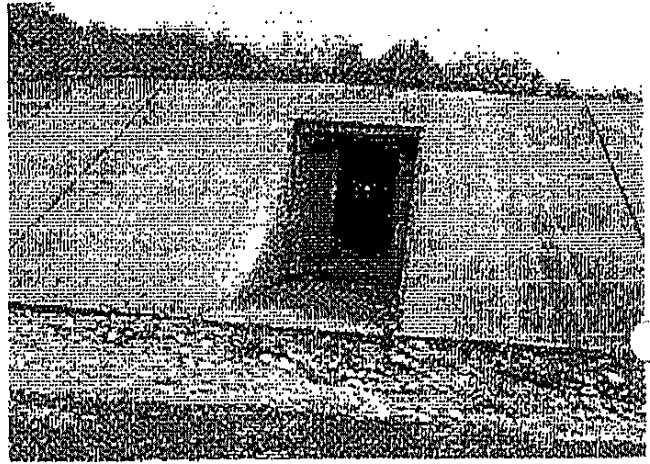
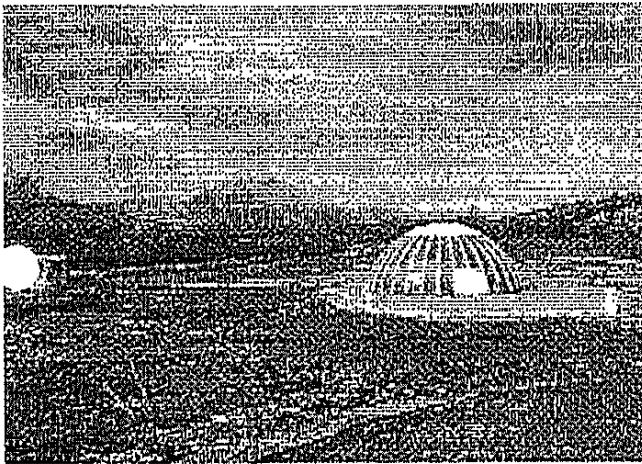


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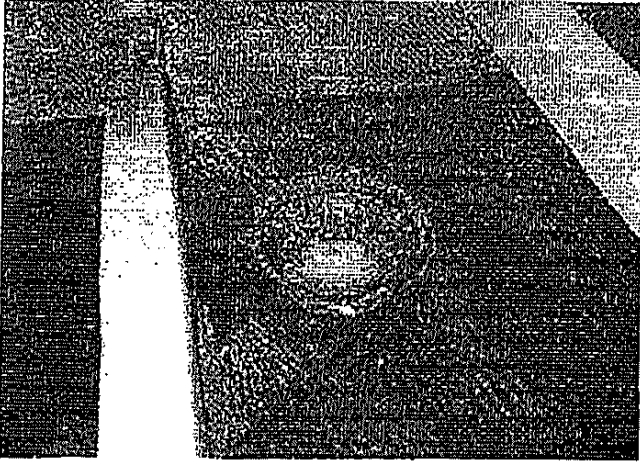
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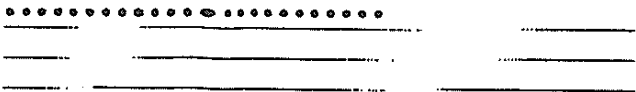
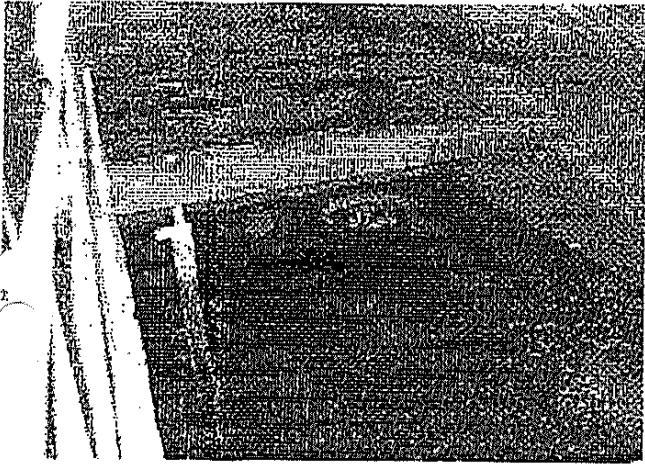
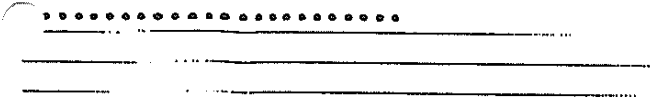


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添付資料 2 協議議事録

MINUTES OF DISCUSSIONS
PREPARATORY SURVEY
ON THE PROJECT FOR URGENT REHABILITATION OF WATER SUPPLY SYSTEM
IN THE CAPITAL CITY OF PODGORICA
IN MONTENEGRO

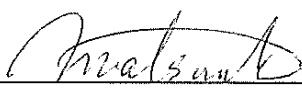
In response to the request from the Government of Montenegro, the Government of Japan decided to conduct a Preparatory Survey on the Project for Urgent Rehabilitation of Water Supply System in Podgorica City (hereinafter referred to as "the Project") and entrusted the survey to the Japan International Cooperation Agency (hereinafter referred to as "JICA") .

JICA sent to Montenegro the Preparatory Survey Team (hereinafter referred to as "the Team"), which is headed by Mr. Shigeyuki Matsumoto, Adviser, Water Resources Management 1, Water Resources and Disaster Management Group, Global Environment Department, JICA, and is scheduled to stay in the country from December 2, 2008 to December 21, 2008.

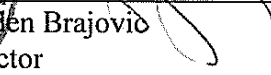
The Team held discussions with the officials concerned of the Government of Montenegro and conducted a field survey at the survey area.

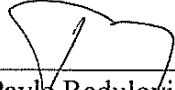
In the course of discussions and field survey, both parties confirmed the main items described in the attached sheets. Subject to the decision by the Government of Japan, JICA will conduct a Preparatory Survey 2 for the basic design on the Project.

Podgorica, December 11, 2008


Shigeyuki Matsumoto
Leader
Preparatory Survey Team
Japan International Cooperation Agency
Japan




Mladen Brajovic
Director
Podgorica Water and Sewerage Corporation
Montenegro


Pavle Radulovic
City Manager
Capital City of Podgorica
Montenegro

ATTACHMENT

1. Objective of the Project

The objective of the Project is to ensure stable potable water supply in the Capital City of Podgorica by improving water supply facilities.

2. Project site

The site of the Project is the Capital City of Podgorica as shown in **Annex-1**.

3. Responsible and Implementing Agency

3-1. The Responsible Agency is the Capital City of Podgorica.

3-2. The Implementing Agency is the Podgorica Water and Sewerage Corporation (hereinafter referred to as "the Corporation"). The organization chart of the Corporation is shown in **Annex-2**.

4. Items requested by the Government of Montenegro

After discussions with the Team, the items described in **Annex-3** were finally requested by the Montenegrin side. JICA will assess the appropriateness of the request and will report the findings to the Government of Japan.

5. Japan's Grant Aid Scheme

5-1 The Montenegrin side understands the Japan's Grant Aid Scheme explained by the Team, as described in **Annex-4**. The Team explained that the demarcation between the Government of Japan and JICA was under discussion and might be slightly modified. In that case, the details of the modification will be explained in the Preparatory Survey 2.

5-2 The Montenegrin side will take the necessary measures, as described in **Annex-5**, for smooth implementation of the Project, as a condition for the Japanese Grant Aid to be implemented.

6. Schedule of the Survey

6-1 The consultants of the Team will proceed to a further survey in Montenegro until December 21 2008.

6-2 If the Project is found feasible as a result of the Preparatory Survey, JICA will send the Preparatory Survey 2 Team for the basic design around June 2009.

7. Other relevant issues

7-1. Outline and current issues of the water supply in the Capital City of Podgorica

Water source of the Capital City of Podgorica consists of one (1) spring (Mareza Spring) and a bunch of wells, and the Corporation supplies potable water to approximately 48,500 registered customers in 2008 including households, buildings and enterprises in the Municipality of Podgorica, Municipality of Tuzi, and upper area in Municipality of Golubovci. At the same time the

Corporation provide bulk water to neighboring Municipality of Danilovglad. Depending on water demand, water production fluctuates severely between dry and rainy seasons. In fact, the Corporation produced monthly average 1,070 l/s at minimum (in February) and 1,710 l/s at maximum (in July) in 2007.

The main water source of the Capital City of Podgorica is Mareza Spring, and two (2) pumping stations (Old Pumping Station (Mareza 1) and New Pumping Station (Mareza 2)) distribute potable water to the Capital City of Podgorica and Danilovglad. Except for these Mareza Pumping Stations, the Corporation owns five (5) well pumping stations including four (4) operating stations and one (1) station under construction.

The Corporation recognizes following current problems on potable water supply in the Capital City of Podgorica.

- (1) Due to migration of non-resident workers from neighboring countries and refugees of Kosovo, the number of population is rapidly increasing. In addition to this migration, there is huge inflow of additional daytime population consisting of commuters and students from the outside of the Capital City of Podgorica.
- (2) The New Pumping Station (Mareza 2) is the largest pumping station of the Capital City of Podgorica, and is suffering from the vibration of pumps and the building from the beginning of its operation in 1985. This problem restricts the operation with 2 pumps, even though this pumping station was supposed to operate with 3 pumps. Besides, the continuous vibration has deteriorated the condition of pumps and conducted to the high risk of pumps' breakdown.
- (3) Basic information on water supply facilities and distribution network is not monitored systematically so that production and distribution of potable water are not efficiently controlled and optimized.
- (4) There still remains some regions which are not covered by the piped water distributed by the Corporation. The Corporation planned and is implementing the extension of distribution pipelines especially in the south region of the Capital City of Podgorica (the Municipality of Tuzi and Municipality of Golubovci).
- (5) Entire water storage capacity of two (2) existing reservoirs is not sufficient for realizing stable water supply to adopt daily fluctuation of water demand and emergent breakdowns of facilities. The Corporation is planning to expand the capacity of one (1) existing reservoir (Ljugovic) and construct three (3) new reservoirs in the south region.
- (6) The Old Pumping Station (Mareza 1) was constructed in the middle of 1950s and the pumps and other related equipment are frequently broken down which causes high repair cost and huge loss of operational time.
- (7) The Corporation recognizes illegal connections especially in the Municipality of Golubovci as a serious problem and is currently installing water meters to each household.



- (8) In order to reduce massive amount of leakage on distribution network mainly due to AC pipes, the Corporation are replacing AC pipes and estimates to complete this replacement in ten (10) years.
- (9) Water quality is not monitored sufficiently. The Corporation is now constructing laboratory with equipment for analyzing water quality.

As mentioned the above (1) – (9), the Corporation has attempted to solve various problems concerning water supply to the Capital City of Podgorica. However, it remains large-scale investments which the Corporation cannot afford by its own budget, such as rehabilitation of New Pumping Station (Mareza 2) and development of monitoring system. Thus, the Corporation requested the Government of Japan to fund these large- scale investments.

7-2 Contents of the request

(1) Rehabilitation of the New Pumping Station (Mareza 2)

1) Necessity / Priority

The New Pumping Station (Mareza 2) located in major water source of Mareza spring and equipped with 4 pumps (320 l/s respectively), is a critically important facility for water supply in the Capital City of Podgorica. However, the Corporation recognizes necessity for rehabilitation of the New Pumping Station (Mareza 2) based on the following issues:

- a) Operation is limited with two (2) pumps due to the problem of the vibration, and
- b) The vibration of pumps and the building accelerates the deterioration of pumps.

In fact, all the four (4) pumps in the New Pumping Station (Mareza 2) were broken down two (2) years ago because of the vibration problem and have been temporally repaired by the Corporation budget. However, there still remains the vibration problem so that the Montenegrin side requested the Government of Japan to solve completely the vibration problem taking any measures. The Team understood the necessity and priority.

2) Possible solutions for the vibration problem

The Corporation has conducted the survey on the causes of the vibration in 2006-2007 and concluded that resonance of pumps and the building would be the most possible reason for the vibration. The Montenegrin side and the Team discussed the possible solutions for the vibration problems as follows:

- a) Replacement of existing pumps
- b) Double-floor-support-type installation of pumps
- c) Shock absorbing rubber between pumps and the slab
- d) Speed control device, such as frequency inverter

The Team recommended the combination of a) to c) as the most preferable solution for the vibration problem, and both sides agreed that the Preparatory Survey 2 for the basic design would investigate more in detail to decide the method to solve the vibration problem.



3) Items requested by the Montenegrin side

The rehabilitation of the New Pumping Station (Mareza 2) includes following items:

- a) Replacement of 4 vertical pumps and motors which supply 320 l/s water respectively to the Capital City of Podgorica
- b) Replacement of Pump control panels
- c) Modification work to avoid the vibration

4) Future plan to be considered

The Montenegrin side explained that they had the plan to expand the capacity of the Ljubovic reservoir to 20,000m³ and construct a transmission pipeline (DN 800mm) from Mareza to the reservoir. Both sides agreed that the specification of pumps to be replaced in the New Pumping Station (Mareza 2) should be decided taking the above future plan into consideration.

(2) Monitoring system

1) Necessity / Priority

At present, pumping stations are monitored and controlled independently and the headquarters of the Corporation has no means to acquire information on operational conditions of each pump. This situation hinders stable water supply by the Corporation, which operates many pumps including old and fragile ones. Besides, there is only one flow meter in the main distribution network so that the Corporation has difficulty to grasp actual condition of water distribution and water leakage.

Considering the above situation, the Corporation started a trial of monitoring system at the Zagoric Pumping Station and regards the introduction of monitoring system covering whole facilities network as a high-priority project.

2) Specification and further extension

The Montenegrin side explained the requested items and future expansion plan as follows:

	Request to the Japanese side	Future expansion by the Montenegrin side
Purpose of the system	Monitoring and data acquisition	Remote control of valves
Facilities to be monitored	(1) Pumping stations (Mareza and other 5 well pumping stations) (2) Distribution mains	(1) Service reservoirs (after the expansion plan is realized) (2) Distribution mains (increase of measurement points)
Items to be monitored	(1) Pumping stations a) Pressure b) Flow c) Chlorine d) Power consumption	



	e) Tension f) Temperature of motor g) Groundwater level or water level of pump suction well (2) Distribution mains a) Flow b) Pressure c) Chlorine	
--	--	--

3) Telecommunication

The Team requested the Montenegrin side to collect information on approval and license for telecommunication, especially procedure period to obtain the license, before the arrival of the Preparatory Survey 2 Team.

(3) Laboratory equipment

The Montenegrin side explained that laboratory equipment for analyzing water quality, which was requested in the original Application Form, would be purchased by the Corporation budget and the building of laboratory was under construction. Both sides agreed to exclude this component from the request.

7-3 Technical assistance

The Montenegrin side requested the technical assistance during the period of the Project implementation, as soft components of the Project which include operation and maintenance of requested pumps in the New Pumping Station (Mareza 2) in the Project, effective utilization of data gathered by the monitoring system, etc. The Team understood the necessity and promised to convey the requests to the Government of Japan and JICA headquarters.

7-4 Rehabilitation of the Old Pumping Station

The Corporation recognizes necessity for reconstruction of the Old Pumping Station (Mareza 1) based on the following issues concerning aged equipment:

- a) Operation is unstable due to frequent breakdown,
- b) One (1) pump was broken down and demolished so that there is no stand-by pump,
- c) Necessary parts for repair are hard to obtain and the Corporation is forced to manufacture them because there does not exist the original manufacturer of the pumps, which leads to longer off-periods of operation, and
- d) High repair cost and electricity consumption are burden for the Corporation.

Taking the above situation into consideration, the Corporation prepared the plan and design document to reconstruct the Old Pumping Station (Mareza 1) in 2006 and 2007, and is now requesting budget for the reconstruction to the Capital City of Podgorica. The Montenegrin side requested the Government of Japan to rehabilitate the New Pumping Station (Mareza 2) rather than the Old Pumping Station (Mareza 1).

7-5 Operation and maintenance of facilities and equipment

The Montenegrin side agreed to take any necessary measures and allocate necessary budget in order to operate and maintain the facilities and equipment provided by the Project.

7-6 Tax exemption

The tax exemption including Value Added Tax (VAT), custom duty, and any other taxes and fiscal levies in Montenegro which is to be arisen from the Project activities will be ensured by the Capital City of Podgorica. The Capital City of Podgorica will take any procedures necessary for tax exemption with the Ministry of Finance at its responsibility.

7-7 Overlapping with other projects

The Montenegrin side explained that the Project would not be overlapped with any other project supported by other donor agencies, NGO, and Montenegrin official organization(s).

7-8 Visibility of the Project

The Team explained that the visibility of the Project should be ensured as a token of cooperation from the Japanese people if the Project was realized. The Montenegrin side explained the following ideas:

- (1) To display commemoration panels at water supply facilities. The Corporation periodically organizes visits to water supply facilities by students and citizens.
- (2) To prepare brochures.

7-9 Office space for the Preparatory Survey 2 Team

The Montenegrin side agreed to provide office space enough for around 5 members of the Preparatory Survey 2 Team in the Corporation equipped with tables, chairs and internet access.

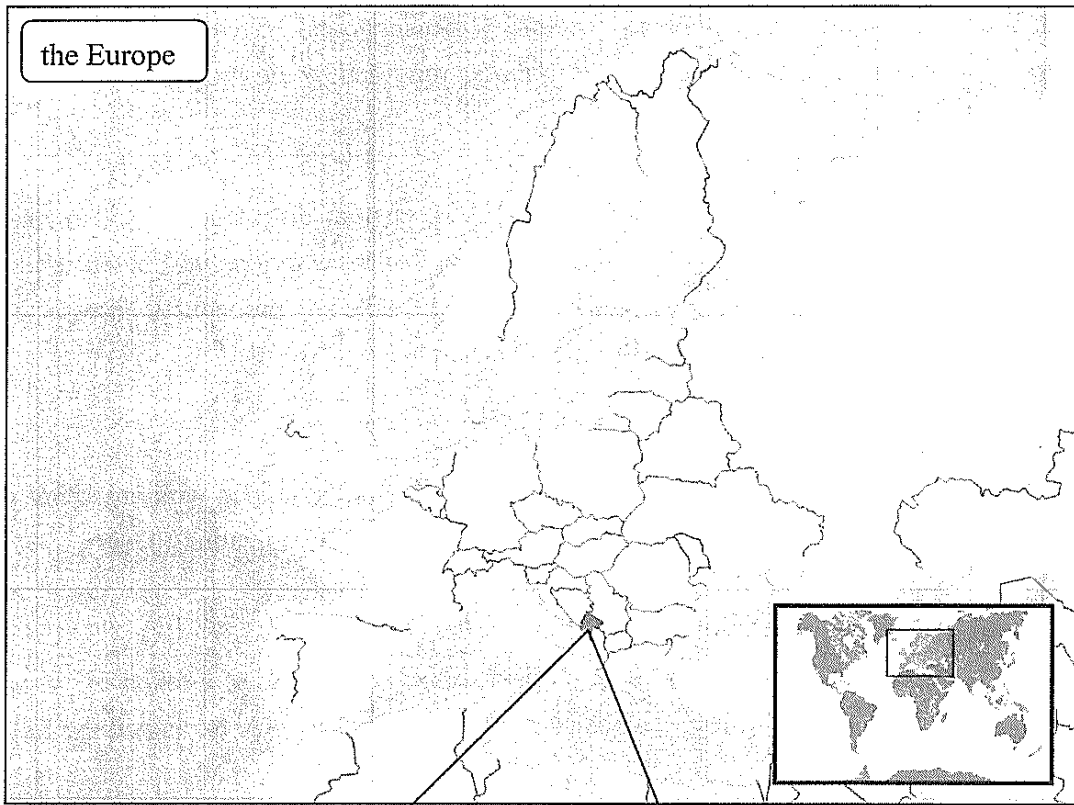
7-10 Project title

Both sides agreed to change the title of the Project for “The Project for Urgent Rehabilitation of Water Supply System in the Capital City of Podgorica.”

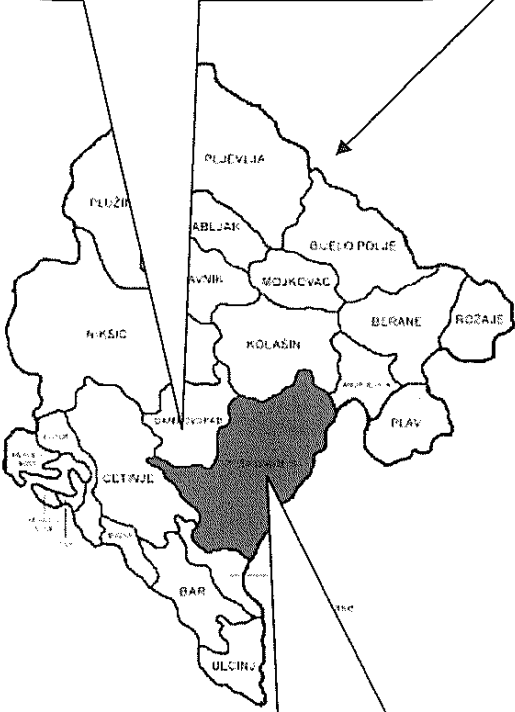
Annex-1	Project Sites Map
Annex-2	Organization Charts (Capital City of Podgorica and Podgorica Water and Sewerage Corporation)
Annex-3	Items Requested by the Montenegrin Side
Annex-4	Japan’s Grant Aid Scheme
Annex-5	Major Undertakings to be taken by Each Government



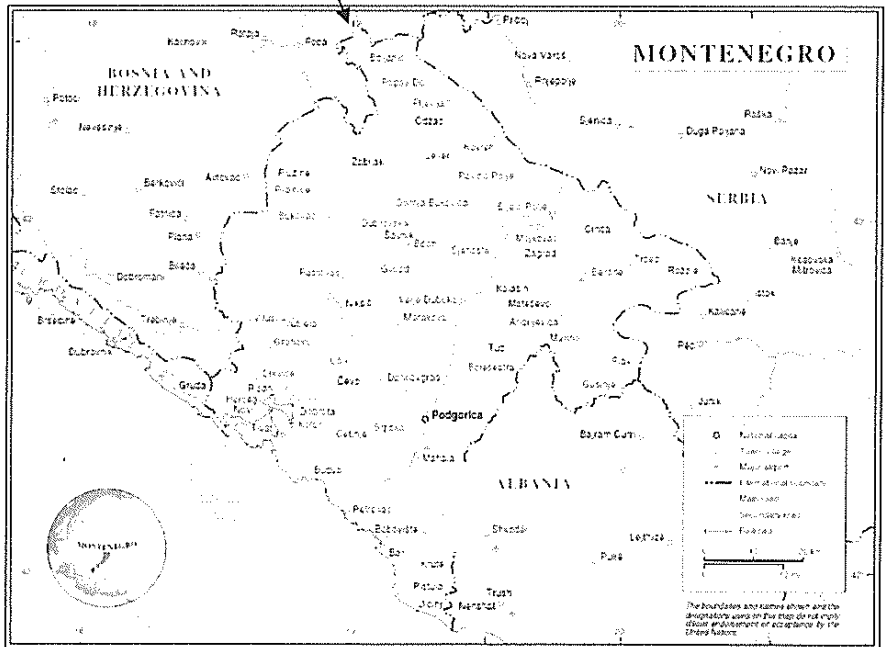
Annex-1: Project Sites Map



Municipality of Danilovgrade



Capital City of Podgorica



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Annex-2: Organization Charts
(the Capital City of Podgorica and Podgorica Water and Sewerage Corporation)

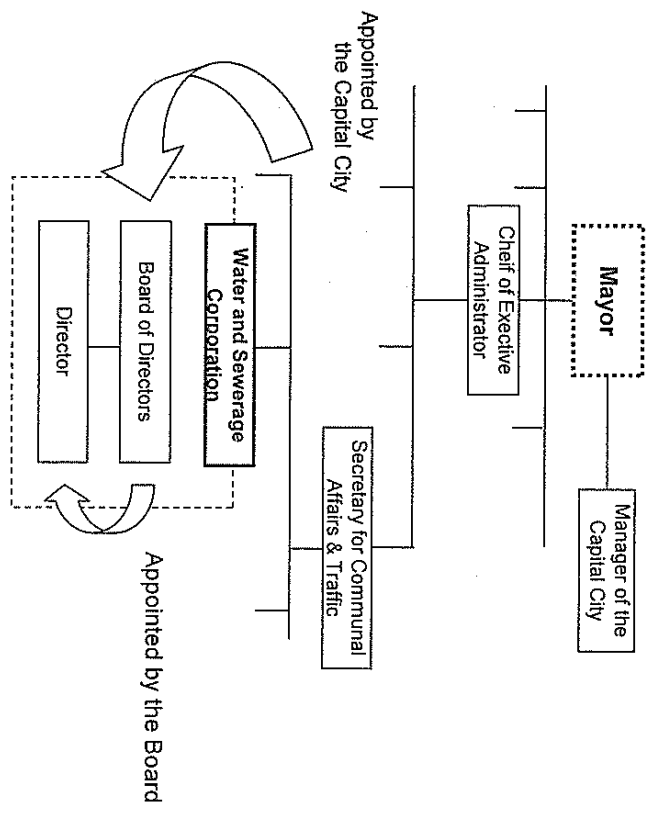


Chart of the Capital City of Podgorica and Podgorica Water and Sewerage Corporation

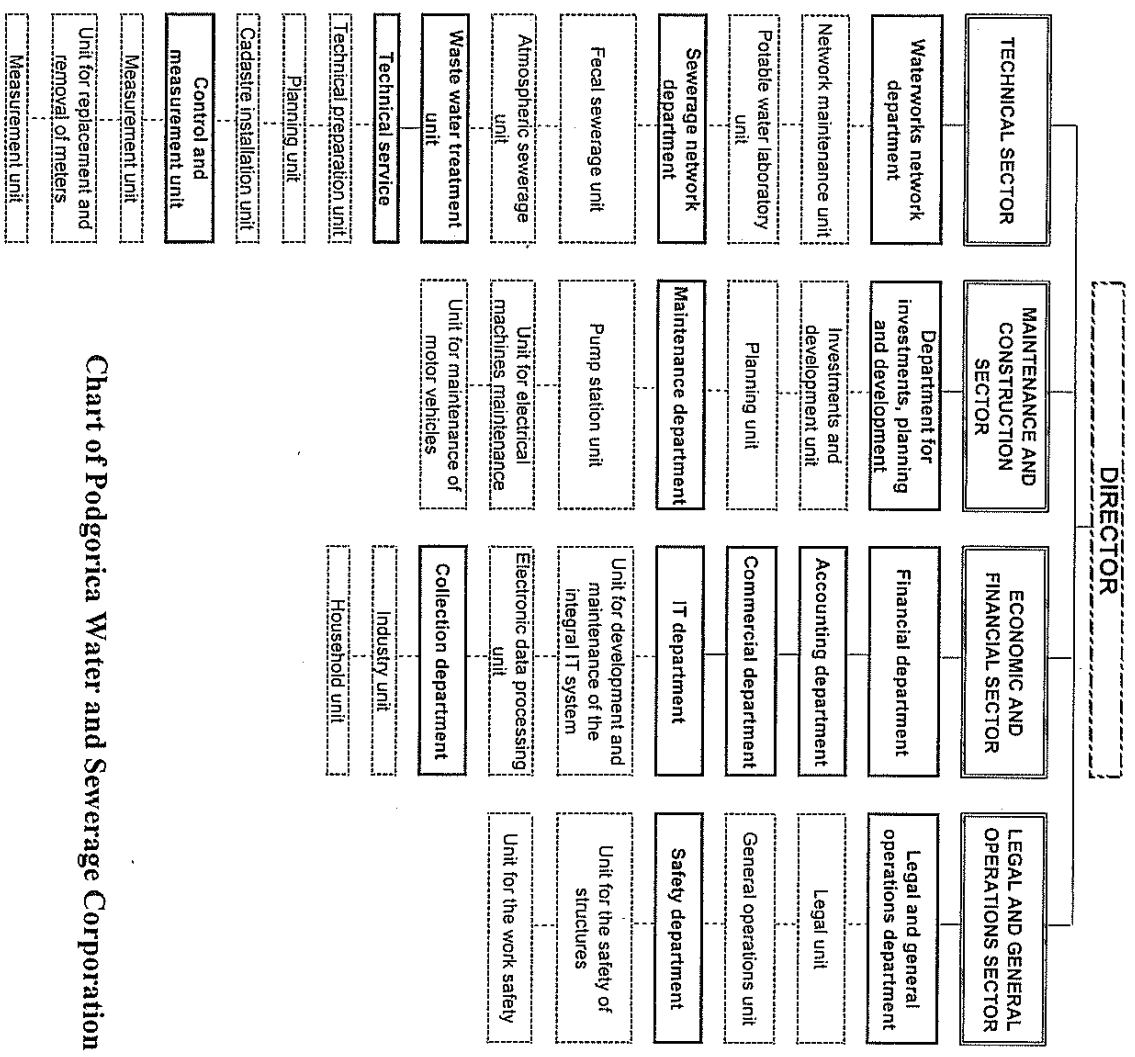


Chart of Podgorica Water and Sewerage Corporation

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Annex-3: Items Requested by the Montenegrin Side

1. Rehabilitation of the New Pumping Station (Mareza 2) (First Priority)

- (1) Replacement of 4 vertical pumps and motors which supply 320 l/s water respectively to the Capital City of Podgorica, if necessary
- (2) Replacement of pump control panels, if necessary
- (3) Modification work to avoid the vibration

2. Monitoring system (Second Priority)

- (1) Equipment to measure items listed as below:

Purpose of the system	Monitoring and data acquisition
Facilities to be monitored and its priority	(1) Pumping stations (Mareza spring and other 5 well pumping stations) (2) Distribution mains
Items to be monitored	(1) Pumping stations <ul style="list-style-type: none"> a) Pressure b) Flow c) Chlorine d) Power consumption e) Tension f) Temperature of motor g) Groundwater level or water level of pump suction well (2) Distribution mains <ul style="list-style-type: none"> a) Flow b) Pressure c) Chlorine

- (2) Equipment for telecommunication

Handwritten signature and initials, possibly 'L. 87' and 'LW'.

Annex-4: JAPAN'S GRANT AID SCHEME

1. Grant Aid Procedure (Attachment 1)

1) Japan's Grant Aid Program is executed through the following procedures.

Application (Request made by a recipient country)

Survey (Preparatory Survey 2 for the basic design conducted by JICA)

Appraisal & Approval (Appraisal by the Government of Japan and Approval by Cabinet)

Determination of (The Notes exchanged between the Governments of Japan

Implementation and the recipient country)

2) Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA to conduct a survey on the request. If necessary, JICA send a Preparatory Survey Team to the recipient country to confirm the contents of the request.

Secondly, JICA conducts the survey (Preparatory Survey 2 for the basic design), using Japanese consulting firms.

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Programme, based on the Preparatory Survey 2 for the basic design report prepared by JICA, and the results are then submitted to the Cabinet for approval.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes signed by the Governments of Japan and the recipient country.

Finally, for the implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

2. Preparatory Survey 2 for the basic design

1) Contents of the Survey

The aim of the Preparatory Survey for the basic design (hereinafter referred to as "the Survey"), conducted by JICA on a requested project (hereinafter referred to as "the Project"), is to provide a basic document necessary for the appraisal of the Project by the Government of Japan. The contents of the Survey are as follows:

- a) confirmation of the background, objectives and benefits of the Project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation;
- b) evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from the technical, social and economic points of view;
- c) confirmation of items agreed on by both parties concerning the basic concept of the Project;
- d) preparation of a basic design of the Project; and
- e) estimation of costs of the Project.

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Preparatory Survey 2 for the basic design of the Project is confirmed considering the guidelines of Japan's Grant Aid Scheme.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even through they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

2) Selection of Consultants

For the smooth implementation of the Survey, JICA uses a consulting firm selected through its own procedure (competitive proposal). The selected firm participates the Survey and prepares a report based upon the terms of reference set by JICA.

At the beginning of implementation after the Exchange of Notes, for the services of the Detailed Design and Construction Supervision of the Project, JICA recommends the same consulting firm which participated in the Survey to the recipient country, in order to maintain the technical consistency between the basic design and detailed design as well as to avoid any undue delay caused by the selection of a new consulting firm.

3. Japan's Grant Aid Scheme

1) What is Grant Aid?

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

2) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

3) "The period of the Grant" means the one fiscal year which the Cabinet approves the project for. Within the fiscal year, all procedure such as exchanging of the Notes, concluding contracts with consulting firms and contractors and final payment to them must be completed.

However, in case of delays in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

4) Under the Grant, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.

When the two Governments 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 consulting, contracting and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

5) 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 the Government of Japan. This "Verification" is deemed necessary to secure accountability of Japanese taxpayers.

6) Undertakings required to the Government of the recipient country (Annex-5)

- a) to secure a lot of land necessary for the construction of the Project and to clear the site;
- b) to provide facilities for distribution of electricity, water supply and drainage and other incidental facilities outside the site;
- c) to ensure prompt unloading and customs clearance at ports of disembarkation in the recipient country and internal transportation therein of the products purchased under the Grant Aid;
- d) to exempt Japanese nationals from customs duties, internal taxes and fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contracts;
- e) to accord Japanese nationals whose services may be required in connection with the supply of the products and services under the verified contracts such as facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work;
- f) to ensure that the facilities constructed and products purchased under the Grant Aid be maintained and used properly and effectively for the Project; and
- g) to bear all the expenses, other than those covered by the Grant Aid, necessary for the Project.

7) "Proper Use"

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

8) "Re-export"

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

9) Banking Arrangement (B/A)

- a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan 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 the Government of Japan under an Authorization to Pay (A/P) issued by the Government of recipient country or its designated authority.

FLOW CHART OF JAPAN'S GRANT AID PROCEDURES

Stage	Flow & Works	Recipient Government	Japanese Government	JICA	Consultant	Contractor	Others
Application	<p>(T/R : Terms of Reference)</p> <p>Request → Screening of Project → Evaluation of T/R → Project Identification Survey</p>						
Project Formulation & Preparation	<p>Preparatory Survey → Field Survey Home Office Work Reporting</p> <p>Preparatory Survey 2 (basic design) → Selection & Contracting of Consultant by Proposal → Field Survey Home Office Work Reporting</p> <p>Explanation of Draft Final Report → Final Report</p>						
Appraisal & Approval	<p>Appraisal of Project → Inter Ministerial Consultation → Presentation of Draft Notes → Approval by the Cabinet</p>						
Implementation	<p>(E/N : Exchange of Notes)</p> <p>E/N → Banking Arrangement → Consultant Contract → Verification → Issuance of A/P</p> <p>Detailed Design & Tender Documents → Approval by Recipient Government → Preparation for Tendering</p> <p>Tendering & Evaluation → Procurement /Construction Contract → Verification → A/P</p> <p>Construction → Completion Certificate by Recipient Government → A/P</p> <p>Operation → Post Evaluation Study (A/P : Authorization to Pay)</p>						
Evaluation & Follow up	<p>Ex-post Evaluation → Follow up</p>						

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 bear the following commissions to a bank of Japan for the banking services based upon the B/A		
	1) Advising commission of A/P		•
	2) Payment commission		•
2	To ensure prompt unloading and customs clearance at the port of disembarkation in recipient country		
	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 accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work		•
4	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contract		•
5	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid		•
6	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for the transportation and installation of the equipment		•

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

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添付資料 3 主要面談者リスト

添付資料3 主要面談者リスト

経済開発省 (Ministry of Economic Development)

Ms. Nada Medenica Deputy Minister, Department for International Economic Relations
Ms. Ivana Gardašević Advisor, Department for International Economic Relations

農林水資源管理省 (Ministry of Agriculture, Forestry and Water Resource Management)

Mr. Velizar Vojinovic Deputy Minister of Water Management

観光・環境保護省 (Ministry of Tourism and Environmental Protection)

Mr. Sinisa Stankovic Deputy Minister

ポドゴリツァ市 (Capital City of Podgorica)

Dr. Miomir Mugoša Mayor
Mr. Pavle Radulović Manager of the Capital 【ポドゴリツァ市 C/P】 【M/D 署名者】

ポドゴリツァ上下水道公社 (Podgorica Water and Sewerage Corporation : PWSC)

Mr. Mladen Brajović Director 【M/D 署名者】
Mr. Filip Makrid Technical Director 【水道公社 C/P】
Ms. Mijojka - Lela Vlahivic – Radonjic Financial Director
Ms. Zeljka Jakovljevic Chief of Development and Maintenance of the Integral IT System
Mr. Bozo Jukić Chief of Pumping Stations
Ms. Lidiya Stanojević Public Relations Manager
Ms. Olivera Knezevic Chief of Network Maintenance
Mr. Igor Ivadovic Chief of IT Department

ベオグラード上下水道公社 (Belgrade Waterworks and Sewerage)

Mr. Vladimir Taušanović General Director
Mr. Miroslav Cvjetkovic Assistant Managing Director
Ms. Branka Milutinović Technical Information System Department Manager

世界銀行 モンテネグロ事務所 (The World Bank Office Montenegro)

Ms. Sanela Ljuca Operation analyst

在セルビア兼在モンテネグロ日本大使館

長井 忠 特命全権大使
坪田 哲哉 一等書記官

JICA バルカン事務所

鹿野 正雄 所長
村上 聡 所員

添付資料 4 希望資料リスト

PREPARATORY SURVEY
ON THE PROJECT FOR URGENT REHABILITATION OF WATER SUPPLY SYSTEM
IN THE CAPITAL CITY OF PODGORICA
IN MONTENEGRO

List of Information and Data required for the Preparatory Survey

December 2008

Japan International Corporation Agency (JICA)

The preparatory survey has conducted by JICA. The survey team has visited the Capital City of Podgorica in Montenegro from 2nd December, 2008 to 21st December, 2008.

The reply from the organization concerned to this request is highly appreciated.

A. Latest Information and Data of Montenegro from Ministries of Montenegro

No.	Document Name / Contents	Form of Document	Received Date	Requested Date	Received from	Remarks
1	/ the law on water supply and wastewater disposal			3Dec'08		
2	/ the National Development Plan of Montenegro including water supply, sanitary and urban planning sector development					
3	/ the National Policy of Montenegro					
4	/ roles and responsibilities of the Government (Ministry of Agriculture, Forestry and Water Resources Management, etc) related to the execution of the requested Project					
5	/ main donors in water supply sector in Montenegro					
6	/ list of national level administrations related to water supply					
7	/ the roles of each administration and the relationship or demarcation of roles between Ministries					
8	/ organization charts of concerned Ministries					
9	/ relevant sections responsible for policymaking, budgetary planning, and education/training for water supply					

No.	Document Name / Contents	Form of Document	Received Date	Requested Date	Received from	Remarks
10	/ the relationship or demarcation of the roles between national level and local level administration in the water supply sector, especially between the national level ministry, City of Podgorica, and Water & Sewerage Corporation					
11	/ subsidiary systems (internal grant system) in the water supply sector					
12	/ the annual budgets and expenditures of the related organizations for each of last three fiscal years					
13	/ laws and regulations relevant to water, water right, water resource development, water conservation (both surface water and groundwater), drinking water, environmental protection, and EIA					
14	/ the latest National Development Strategy					
15	/ national sector strategy					
16	/ the national sector study					
17	/ the current national water quality standards for drinking purpose and the responsible organization for this issue					
18	/ plan for promoting public private partnership (PPP) such as leasing, contract out, concession, and disposition of assets					

No.	Document Name / Contents	Form of Document	Received Date	Requested Date	Received from	Remarks
19	/ National Environmental Policy and Environmental Protection Laws					
20	/ EIA regulations					
21	/ impact on environmental and social aspects by the requested Project					
22	/ clearance of any procedure for environmental protection or getting permission when the requested Project is realized					
23	/ related laws and regulations on taxation system for import of equipment and business of foreign private company					
24	/ taxes to be imposed when the requested Project is realized					
25	/ process and responsible authorities of tax exemption					
26	/ Fundamental Index of Montenegro					
27	/ Population in each province of Montenegro from year 1995 to 2008					
28	/ Foreign visitors into Montenegro from year 1995 to 2008					

No.	Document Name / Contents	Form of Document	Received Date	Requested Date	Received from	Remarks
29	/ Organization charts with number of staff sorted by expertise such as electro-mechanical engineer, hydraulic engineer, mechanic, chemist, etc. in each section/department for Water Supply in Montenegro					
30	/ List of other related projects which is under preparation, implementing, or recently completed in Montenegro					
31	/ List of projects implemented in last 10 years (project name, cost, source of fund) in Montenegro					
32	/ Record of staff training programs implemented for each project site with their duration and subjects in Montenegro from year 2000 to August 2008					
33	/ Condition of transportation, electricity supply, telecommunication, education in Montenegro					
34	/ Natural Condition in Montenegro (meteorological data, hydrological data)					
35	/					

B. Latest Information and Data of the Capital City of Podgorica from Departments of The the Capital City of Podgorica

No.	Document Name / Contents	Form of Document	Received Date	Requested Date	Received from	Remarks
1	/ city development plan (urban development plan, socio - economic development plan) of the Capital City of Podgorica			3Dec'08		
2	/ any other sector policy, master plan or upper level plan related to the requested Project					
3	/ the reason why the requested Project is important in relation to the national plans and sector development plans					
4	/ latest socio-economic data of water supply area by the Corporation such as land use, population, population growth rate, migration from other area, etc					
5	/ roles and responsibilities of the Capital City of Podgorica related to the execution of the requested Project					
6	/ main donors in water supply sector in Podgorica					
7	/ list of ongoing and planned projects for water supply in Podgorica					
8	/ data on water-borne diseases and other health problems (Sanitary and Hygienic Condition (Water related disease for adult and infant, Major cause of death for adult and infant, Number of hospitals, Public health offices and clinics) in Podgorica city)					
9	/ other water supply systems in Podgorica than the system operated by the Corporation, and service areas and served population and service level					

No.	Document Name / Contents	Form of Document	Received Date	Requested Date	Received from	Remarks
10						
11	/ private water supply systems for such as hotels, commercial entities, and industry, and the quantity of water production					
12	/ data on past population, future population projection and service population in Podgorica (Population in each area of Podgorica city from year 1995 to 2008)					
13	/ Foreign visitors into Podgorica city from year 1995 to 2008					
14	/ Organization charts with number of staff in each section/department for Water Supply in Podgorica city					
15	/ Household income (Average, Minimum, Maximum) in Podgorica city from year 1995 to July 2008					
16	/ Financial records (Balance Sheet, Profit & Loss Statement) of Water Supplier(s) (if it exists in each service area, please prepare respective records) in Podgorica city from year 1995 to 2008					
17	/ List of other related projects which is under preparation, implementing, or recently completed in Podgorica city					
18	/ List and progress of other water supply, sanitary and urban planning sector projects under implementation or planned by local fund or by assistance of other donors					
	/ List of projects implemented in last 10 years (project name, cost, source of fund) in Podgorica city					

No.	Document Name / Contents	Form of Document	Received Date	Requested Date	Received from	Remarks
19	/ Record of staff training programs implemented for each project site with their duration and subjects in Podgorica city from year 2000 to August 2008					
20						
21	/ Service area map for water supply system and sanitation system					
22						
23	/ Natural Condition in Podgorica city (meteorological data, hydrological data)					

C. Latest Information and Data of Podgorica Water and Sewerage Corporation (PWSC) from Departments of PWSC

No.	Document Name / Contents	Form of Document	Received Date	Requested Date	Received from	Remarks
1	/ water supply areas : legislative and administrative relationship of “City of Podgorica”, “Capital of Podgorica”, “Zeta district”, “settlement Tuzi” and “rural areas in municipalities” from the view point of geographical location and local administration structure			3Dec'08		
2	/ roles and responsibilities of the Corporation in each area					
3	/ the future and on-going expansion plan of water supply area					
4	/ funding source to cope with drastic migration and increase of population					
5	/ schematic diagram of water supply system (present condition and future plan					
6	/ water supply conditions of each area and cause of difference in per capita water supply volume					
7	/ basic data to examine water supply volume such as present and target per capita water consumption, water production amount and physical loss, etc					
8	/ clarification whether the pumps of exactly the same specification are preferable or some sort of modification is necessary					
9	/ possible cause of vibration in the New Pumping Station, the details of measures and its effect, and apparatus to avoid the existing vibration					

No.	Document Name / Contents	Form of Document	Received Date	Requested Date	Received from	Remarks
10	/ present condition of New Pumping Station building					
11	/ the reason why the new pumping station is prioritized comparing to the old pumping station					
12	/ basic information of new pumping station and old pumping station to judge the appropriateness of the prioritization in the aspects of water source, location, contributory water supply area and population, pumping amount, electric power consumption and energy efficiency, operational condition, operating time, etc					
13	/ present operation and maintenance status such as frequency of inspection, capability of mechanics and workshop, record keeping, asset registration, etc					
14	/ present conditions of existing facilities like intake facilities, water treatment facilities and water distribution facilities, especially operation conditions, necessity of rehabilitation, plan of rehabilitation and expansion, physical loss, aging facilities, etc					
15	/ concrete idea of requested monitoring system such as more detailed objective of monitoring, data to be monitored, frequency of monitoring, composition of the system, schematic diagram of the system, necessary equipment, number of equipment, etc					
16	/ how to utilize the requested monitoring system after the Project is realized, for example, in terms of post or section in charge, assignment of staff for operation and maintenance, provision of training for the staff, periodical inspection and repair, budget for operation and maintenance, etc					

No.	Document Name / Contents	Form of Document	Received Date	Requested Date	Received from	Remarks
17	/ concrete idea of requested laboratory equipment such as water quality items to be analyzed, frequency of water quality analysis, number of samples to be tested, necessary equipment, number of equipment, applied water quality standard, necessary accuracy, etc					
18	/ utilization of the requested laboratory equipment after the Project is realized, for example, in terms of post or section in charge, assignment of qualified staff for water quality analysis, provision of training for the staff, room for laboratory with appropriate facilities like electricity, water supply, drainage and air conditioning, periodical inspection and repair, budget for operation and maintenance, etc					
19	/ roles and responsibilities of Podgorica Water and Sewerage Corporation related to the execution of the requested Project					
20	/ mandate, budget and staff of WS-WWT described in the Application Form					
21	/ the annual report of the Corporation for the last 5 years					
22	/ financial data such as B/S (balance sheet), P/L (Profit-and-loss statement) and annual budget of the Corporation for the last 5 years					
23	/ budget for the fiscal year 2008					
24	/ water tariff system such as laws and regulations to set water tariff, process and mandate of tariff setting, water tariff table, collection method, collection rate, etc					

No.	Document Name / Contents	Form of Document	Received Date	Requested Date	Received from	Remarks
25	/ monthly water charge per household for a typical household					
26	/ composition of water users (residential, commercial, industrial connection)					
27	/ organization chart with staff numbers					
28	/ data on NRW (non revenue water) or UFW (unaccounted-for water)					
29	/ list of ongoing and planned projects by other donors for water supply in Podgorica					
30	/ the current service situation (2007) in Podgorica					
31	/ future demand projection at least to the year 2015 as a total and as a breakdown by area (district)					
32	/ the current sewerage system and future plans					
33	/ location maps of the sewerage facility and discharge points of treated sewage					
34	/ service population and service area of sewerage system					

No.	Document Name / Contents	Form of Document	Received Date	Requested Date	Received from	Remarks
35	/ method of sewage treatment and capacity					
36	/ operation and maintenance cost of existing facilities					
37	/ Flowchart and drawings of existing facilities					
38	/ Raw water quality data and treated water quality data					
39	/ the water level of groundwater sources for the past five years					
40	/ Drawings of the proposed facility					
41	/ Basis of capacity of the proposed facility					
42	/ the number and technical level of staff (a new organization chart)					
43	/ operation and maintenance costs (chemicals, electrical charge, manpower, repair parts, etc.)					
44	/ annual operation and maintenance cost and its distribution					

No.	Document Name / Contents	Form of Document	Received Date	Requested Date	Received from	Remarks
45	/ expected budget source and amount for operation and maintenance of the project					
46	/ water income after the project					
47	/ plan for water tariff setting after the project					
48	/ Monthly operation records (number of connection in each category, quantity billed, and quantity paid, etc) of Zeta, Tuzi and Podgorica service areas from year 1995 to November 2008					
49	/ Basic index for water supply systems for Zeta, Tuzi and Podgorica service areas from year 1995 to 2008					
50	/ Process of getting the membership and the connection license					
51	/ Record of the water source (name) and discharge (m ³ /day) from year 1995 to 2008					
52	/ Monthly operation records (quantity, quality, power and chemical consumption, repair, etc) of each project site from year 1995 to December 2008					
53	/ Questionnaire and reply to customers for water use in each category (Household, Hotel, Government office, School, Hospital, Restaurant, Souvenir Shop)					

No.	Document Name / Contents	Form of Document	Received Date	Requested Date	Received from	Remarks
54	/ Service area map for water supply system and sanitation system					
55	/ Information (data, drawings, specifications, dimensions, etc.) for following facilities and equipment regarding the existing water supply system Raw water storage / intake facilities, Existing water pipeline (transmission / distribution), Other information on pipes such as material, length, diameter and installation year, Water treatment plant, Water quality control system including water analysis, Reservoirs, Chemical feeding system (coagulation system, chlorination system), Pump facilities (Intake, filter backwash, transmission, distribution and booster) and Water meters (Country of production, Type: velocity type / volumetric type, Size in mm (millimeter), Method and frequency of calibration)					
56	/ Clear description with quantified information on the problems of the installations and systems to be rehabilitated					
57	/ Characteristics related to water supply and demand such as living standards, population growth, topographies, industries, water consumption, cost recovery, distance from the water supply station, etc. of the service areas mentioned in the Application Form					
58	/ Information on the "New Pumping Station" and existing projects mentioned in the Application Form for Japan's Grant Aid					
59	/ Following Information regarding the existing sewerage and sanitation condition Existing sewerage system, Capacity and function of sludge, Treatment method of wastewater, Disposal method of human wastes in hospitals, schools, hotels, industries etc. including type of latrine and Disposal method of human waste in domestic houses including type of bathroom					

No.	Document Name / Contents	Form of Document	Received Date	Requested Date	Received from	Remarks
60	/ Design Criteria for water supply system Water quality control (raw water and treated water), Retention time of reservoir, Standards for water supply system, Standards regarding structure such as load conditions and Standards applied to pipe and fittings (including flange)					
61	/ Design Criteria for wastewater (Standards for wastewater quality from factories and hospitals)					
62	/ Process of getting the permission and the connection license for the telemetering system					
63	/					

D. Latest Information and Data of other donors from offices of donors in the Capital City of Podgorica

No.	Document Name / Contents	Form of Document	Received Date	Requested Date	Received from	Remarks
1	World Bank			3Dec'08		
2						
3						
4						
5						

添付資料 5 収集資料リスト

収集資料リスト

調査名 モンテネグロ国ポドゴリツァ市上水道システム緊急修復計画準備調査

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	BELGRADE WATERWORKS AND SEWERAGE DEVELOPMENT AND REFORMS FROM 2000 UNTIL 2008	パンフレット	オリジナル	BELGRADE WATERWORKS AND SEWERAGE Belgrade, Serbia	Sept. 2008
2	GENERALNO RESENJE DISTRIBUCIONOG VODOVODNOG SISTEMA PODGORICA (GENERAL SOLUTION OF THE DISTRIBUTION WATERWORKS SYSTEM OF PODGORICA)	ファイル図書	コピー		
3	(MASTER PLAN)	ファイル図書 目次のみ	コピー		1998
4	ODLUKU 2008/08	A4 1枚	コピー		
5	Bilans novcanih tokova – BNT (PD) direktna metoda (Cash Flow, Balance Sheet, Profit and Loss Statement)	A4 3枚	コピー		2006
6	BILANS USPIJEHA – BU (PD) (Metoda po prirodni troska) (Profit and Loss Statement, Balance Sheet, Cash Flow)	A4 3枚	コピー		2007
7	(Detail Organizational Structure of WSDP)	A4 13枚	コピー		

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
8	PRETHODNA STUDIJA OPRAVDANOSTI SA GENERALNIM PROJEKTOM SISTEMA ZA VODOSNABDIJEVANJE GLAVNOG GRADA PODGORICE PROJEKTI ZADATAK (PREVIOUS JUSTIFICATION STUDY WITH AN OVERALL PROJECT FOR THE PODGORICA CAPITAL TOWN WATER SUPPLY SYSTEM PROJECT OBJECTIVE)	A4 3枚 目次のみ	コピー		
9	ZAKON O VODAMA (THE LAW ON WATERS)	ファイル図書	コピー		2007
1 0	VODO PROJEKT GENERALNO RESENJE VODOVODNOG DISTRIBUCIONOG SISTEMA	A4 10枚 P200 - P209	コピー		
1 1	VODO PROJEKT GENERALNO RESENJE VODOVODNOG DISTRIBUCIONOG SISTEMA	A4 20枚 P36 - P55	コピー		
1 2	VODO PROJEKT GENERALNO RESENJE VODOVODNOG DISTRIBUCIONOG SISTEMA	A4 22枚 P117 - P138	コピー		
1 3	IDEJNI PROJEKAT SNABDIJEVANJA VODOM PODRUCIA ZETE I MALESIJE (WATER SUPPLY OF ZETA AND MALESIJA - PRELIMINARY DESIGN)	ファイル図書	コピー		2006
1 4	(Rulebook on Health Safety of Drinking Water)	A4 8枚	コピー		1998

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 5	Terms of Reference Technical Assistance to Podgorica Water and Sewer Company Review of Options for Upgrading and Expanding Water and Waste Water Services through Private Sector Participation and/or Commercial Sources of Finance	A4 6枚	コピー	World Bank	
1 6	CJENOVNIK (Water Tariff)	A4 1枚	コピー	Podgorica Water and Sewerage Company	2008
1 7	Financial Performance Indicators(2004-2006)	A4 1枚	コピー	Podgorica Water and Sewerage Company	
1 8	Problem nelegalnih priključaka (The problem of illegal connections)	A4 1枚	コピー	Podgorica Water and Sewerage Company	2008
1 9	Specifikacija postojeće i nedostajuće opreme (Network Maintenance Equipment List)	A4 1枚	コピー	Podgorica Water and Sewerage Company	2008
2 0	ELEKTRO I MASINSKA OPREMA NA MAREZI 2 (ELECTRIC AND MACHINE EQUIPMENT AT MAREZA 2)	A4 1枚	コピー	Podgorica Water and Sewerage Company	2008
2 1	KVAROVINA PUMPNJOJ STANICI MAREZA 1 U PERIODU OD 01.01.2004 DO 08.12.2008	A4 4枚	コピー	Podgorica Water and Sewerage Company	2008

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
2 2	REMONTI NA P.S. MAREZI 2 U PERIODU OD 12.07.1995 DO 11.12.2008 (REPAIRS ON PUMPING STATION MAREZA 2 IN THE PERIOD FROM 12 JULY 1995 TO 11 DECEMBER 2008)	A4 2枚	コピー	Podgorica Water and Sewerage Company	2008
2 3	POTISNUTE, FAKTURISANE KOLIINE VODE I GUBICI U 1994.g. - 2006.g.	A4 13枚	コピー	Podgorica Water and Sewerage Company	2008
2 4	NUMBERS OF CUSTOMERS AND WATER METERS	A4 1枚	コピー	Podgorica Water and Sewerage Company	2008
2 5	IZVJESTAJ O ISPITIVANJU VODA ZA PICE (BROJ:3160), (BROJ:3159), (BROJ:3072), (BROJ:3071), (BROJ:3070), (BROJ:2895), (BROJ:2874)	A4 3枚セット	コピー	Podgorica Water and Sewerage Company	2008
2 6	National Program for Integration	Page480 to Page517 抜粋	コピー	Government of Montenegro	
2 7	GENERALNO RESENJE VODOVODNOG DISTRIBUCIONOG SISTEMA PODGORICE (AN OVERALL SOLUTION FOR THE WATER SUPPLY SYSTEM IN PODGORICA (Master Plan 1998.2)	A0 1枚 配水管網図	コピー	Podgorica Water and Sewerage Company	1998
2 8	IZVJESTAJ O GEOTEHNICKIM SVOJSTVIMA TERENA ZA IZGRADNJU BAZENA ZA VODU NA IZVORISTU MAREZE (REPORT ON GEOTECHNICAL CHARACTERISTICS OF THE TERRAIN FOR CONSTRUCTION OF WATER POOL AT MAREZA WATERSOURCE)	ファイル図書	コピー	Public Institution, National Bureau for Geological Surveys - Podgorica	2006

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
2 9	TABELARNI I GRAFICKI PRIKAZ NAPLATE VODE ZA 2004. GODINU (TABLES AND GRAPHICAL PRESENTATION OF COLLECTION FOR WATER IN 2004)	ファイル図書	コピー	Podgorica Water and Sewerage Company	2007
3 0	GLAVNI PROJEKAT ELEKTRO PROJEKAT ELEKTRICNIH INSTALACIJA JAKE STRUJE (FINAL PROJECT PORJECT FOR ELECTRIC INSTALLATION FOR HIGH VOLTAGE ELECTRICITY)	ファイル図書	コピー		2004
3 1	CRPNA STANICA "MAREZA" B. GRADEVINSKI DIO PLANOVI SAVIJANJA ZELJEZA (PUMPING STATION "MAREZA" B. CONSTRUCTION PART PLANS FOR STEEL ARRANGEMENT)	ファイル図書(図面) (1/2)	コピー		1982
3 2	CRPNA STANICA "MAREZA" B. GRADEVINSKI DIO PLANOVI SAVIJANJA ZELJEZA (PUMPING STATION "MAREZA" B. CONSTRUCTION PART PLANS FOR STEEL ARRANGEMENT)	ファイル図書(図面) (2/2)	コピー		1982
3 3	Crpna stanica MAREZA IZVEDBENI PROJEKT C.-STROJARSKI DIO (Pumping station MAREZA EXECUTION PROJECT C.-EQUIPMENT PART) (1/2)	ファイル図書(図面) (1/2)	コピー		1982
3 4	Crpna stanica MAREZA IZVEDBENI PROJEKT C.-STROJARSKI DIO (Pumping station MAREZA EXECUTION PROJECT C.-EQUIPMENT PART)	ファイル図書(図面) (2/2)	コピー		1982

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
3 5	VODOVOD TITograd Crpna stanica MAREZA Izvedbeni project DOPUNA (WATER COMPANY PODGORICA Pumping station MAREZA Execution project ADDENDUM)	ファイル図書(図面)	コピー		1981
3 6	Crpna stanica MAREZA B. Gradevinski dio Izvedbeni project – Staticki proracun 1 Pumping station MAREZA B. Construction part Execution project Static calculation 1	ファイル図書	コピー		1981
3 7	Crpna stanica MAREZA B. Gradevinski dio Izvedbeni project – Staticki proracun 2 Pumping station MAREZA B. Construction part Execution project Static calculation 2	ファイル図書	コピー		1981
3 8	VIBRACIONO STANJE PUMPNIH AGREGATA (VIBRATION CONDITION OF PUMP AGGREGATES) REZULTATI ISPITIVANJA VIBRACIONOG STANJA PUMPNIH AGREGATA U PS" MAREZA" – PODGORICA (SURVEY RESULTS FOR VIBRATION CONDITION OF PUMP AGGREGATES IN MAREZA PUMPING STATION)	ファイル図書	コピー	VIBROAKUSTIKA d.o.o, Beograd (VIBROACOUSTIC COMPANY, 2007 BELGRADE)	2007
3 9	INVESTITOR J.P. "VODOVOD I KANALIZACIJA" PODGORICA OBJEKAT : CRPNA STANICA I' PODGORICA (INVESTOR PUBLIC COMPANY WATER SUPPLY AND SEWAGE PODGORICA FACILITY : PUMPING STATION I PODGORICA)	ファイル図書	コピー	MONTENEGROINZJERING podgorica d.o.o	2007

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
4 0	J.P. "VODOVOD I KANALIZACIJA" PODGORICA GLAVNI PROJEKAT REKONSTRUKCIJE PUMPNE STANICE MAREZA "1" (PUBLIC COMPANY WATER SUPPLY AND SEWAGE PODGORICA FINAL REPORT OF MAREZA I PUMPING STATION RECONSTRUCTION)	ファイル図書	コピー		2007
4 1	J.P. "VODOVOD I KANALIZACIJA" PODGORICA GLAVNI PROJEKAT REKONSTRUKCIJE ZA OBJEKAT CRPNE STANICE I NA VODOIZVORISTU "MAREZA" – PODGORICA (PUBLIC COMPANY WATER SUPPLY AND SEWAGE PODGORICA FINAL REPORT FOR CONSTRUCTION OF PUMPING STATION I FACILITY AT "MAREZA" WATERSOURCE – PODGORICA)	ファイル図書	コピー		2007
4 2	JAVNO PREDUZECE "VODVOD I KANALIZACIJA" PODGORICA IDEJNI PROJEKAT SNABDIJEVANJA VODOM PODRUCJA ZETE I MALESIJE (PUBLIC COMPANY WATER SUPPLY AND SEWAGE PODGORICA PRELIMINARY PROJECT CONCEPTUAL DESIGN OF WATER SUPPLY FOR ZETA AND MALESIJA")	ファイル図書	コピー		2006
4 3	ポドゴリツァ市都市計画図	A0 1枚	コピー		
4 4	ポドゴリツァ上下水道公社内中央監視室図	A3 5枚	コピー	Podgorica Water and Sewerage Company	
4 5	financial data 【モ語】	電子ファイル	コピー	Podgorica Water and Sewerage Company	

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
4 6	GIS(ジェリカさん)提供資料	電子ファイル	コピー	Podgorica Water and Sewerage Company	
4 7	Development Plan from Consultant 19Dec2008	電子ファイル	コピー		
4 8	Feasibility study wastewater Podgorica	電子ファイル	コピー		
4 9	Laboratory equipment (Top Secret)	電子ファイル	コピー	Podgorica Water and Sewerage Company	
5 0	Metering data	電子ファイル	コピー	Podgorica Water and Sewerage Company	
5 1	Pipeline Data	電子ファイル	コピー	Podgorica Water and Sewerage Company	
5 2	Vibration Analysis Report	電子ファイル	コピー		