E4721

World Bank Loan Xinjiang Technical and Vocational Education and Training Project

Environmental Codes of Practice

Commissioned by: World Bank Loan Xinjiang Technical and Vocational Education and Training Project Management Office

Composed by: Xinjiang Uygur Autonomous Region Environmental Protection Technology Consulting Center

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ABBREVIATIONS

CNP	Construction Noise Permit
EA	Environmental Assessment
EAO	Environmental Assessment Organization
ECOP	Environmental Codes of Practice
EIA	Environmental Impact Assessment
EM	Environment Management
EMS	Environment Management System
EMT	Environment Management Task
EPD	Environmental Protection Department
ECOP	Environmental Coeds of Practice
PO	Project Owner
PMO	Project Management Office
PRC	The People's Republic of China
PS	Project Supervisor
WB	World Bank
XUAR	Xinjiang Uyghur Autonomous Region
XPCC	Xinjiang Production and Construction Corps

Contents

1 General Provision

1.1 Project Background

On October 28, 2005, the State Council issued the "Decision of The State Council on Vigorously Developing Vocational Education," explicating guiding ideology, objectives, tasks and policies in future as well as taking vocational education reform as an important foundation for economic and social development, and a strategic focus of educational work, by vigorously developing vocational education with Chinese characteristics, speeding up the training of highly skilled and qualified workers.

In recent years, Xinjiang vocational education institutions were responsible for training a large number of technical skills and practical talents in the autonomous region. But the low quality of the labor force in general, as a bottleneck affecting the economic construction and social development of Xinjiang's construction, is still seriously restricting the adjustment and transformation of economic development mode and upgrading of industrial structure and optimization. In order to improve the quality of the labor force in Xinjiang, all these years both the regional committee of CCP and people's government attach great importance to the development of vocational education and increase investment constantly. But there are still, for various reasons, large gaps in the development of vocational education between Xinjiang and other provinces: the school-enterprise cooperation is in need of improvement and innovation in institutional mechanisms; competency-based curriculum system needs to be further improved; construction of teaching staff should be strengthened, skills for serving local community need to be further improved, school conditions still need improvement.

In order to improve the vocational education in Xinjiang and implement the new requirements on vocational education of the Party's 18th national congress, the "*World Bank Loan Xinjiang Technical and Vocational Education and Training Project*" proposed by the Education Department of Xinjiang Uygur Autonomous Region has been reviewed by the relevant departments and finalized. The Project is to be executed by the Department of Education of Xinjiang Uygur Autonomous Region and implemented by five local colleges including Xinjiang College of Engineering, Xinjiang Agricultural Vocational and Technical College, Xinjiang Institute of Light Industry Technology, College of Xinjiang Uyghur Medicine, and Urumqi Vocational University.

The Department of Education of XUAR commissioned our Centre to edit the "*Environmental Codes of Practice of World Bank Loan Xinjiang Technical and Vocational Education and Training Project*". In July 2014, our company completed the first draft and submitted it to Xinjiang Environmental Protection Agency and the World Bank. In September 2014, the Bank sent a pre-assessment mission for reviewing the first draft and gave comment. This report is to be modified based on the views of the World Bank pre-assessment mission, to meet the incoming pre-assessment of World Bank pre-assessment mission.

1.2 Project Description

1.2.1 Construction Contents

Xinjiang Uygur Autonomous Region plans to use World Bank loans to improve local conditions of higher vocational education, considering the status quo of higher vocational education development in Xinjiang, covering five local vocational colleges as Xinjiang College of Engineering, Xinjiang Agricultural Vocational and Technical College, Xinjiang Institute of Light Industry Technology, College of Xinjiang Uyghur Medicine, and Urumqi Vocational University in terms of five aspects as school-enterprise cooperation and innovation, teaching evaluation reform, creating a high level of teaching and management team, regional social services and improving school conditions, aiming to further improve and enhance the vocational education level and system in Xinjiang. The total investment is 636.225 million yuan, including construction investment 607.6 million yuan, commitment fee 1.59 million yuan, and interest during construction 27.435 million yuan. The construction investment applied for 50 million loan from World Bank, accounting for 48.69% of total investment, 326.625 million yuan from the domestic counterpart funds, accounting for 51.31% of total investment. Use of funds for each sub-project is presented in the following table 1.2-1, and construction content in table 1.2-2.

Table 1-2 Use of funds for each sub-project

Unit: 10 thousand yuan

Serial No.	School Name	Project Components	Loan	Domestic counterpart funds	total	The proportion of total investment
1	Xinjiang College of Engineering	Strengthen Linkage between School and Industry		15.0	15.0	0.02%
		Update Curriculum	235.5		235.5	0.39%
		Building up High Quality Teams	1176.6	3420	4596.6	7.57%
		Improve External Support to Other Schools and Local Communities		10.0	10.0	0.02%
		Upgrade Facilities and Equipment	4760.0	2085.0	6845.0	11.27%
		Provincial Activity	12.4	50.0	62.4	0.10%
		Physical and Price contingencies		620.0	620.0	1.02%
		Front-End Fees	15.5		15.5	0.03%
		Construction Investment in Total	**6200.0**	**6200.0**	**12400.0**	**20.41%**
		Commitment Fee		31.8	31.8	
		Interest During Implementation		548.7	548.7	
		Investment Total	**6200.0**	**6780.5**	**12980.5**	
2	Xinjiang Agricultural Vocational and Technical College	Strengthen Linkage between School and Industry	103.0		103.0	0.17%
		Update Curriculum	810.0		810.0	1.33%
		Building up High Quality Teams	336.0	244.0	580.0	0.95%
		Improve External Support to Other Schools and Local Communities	140.0	902.0	1042.0	1.71%
		Upgrade Facilities and Equipment	4783.0	4384.0	9167.0	15.09%
		Provincial Activity	12.5	50.0	62.5	0.10%
		Physical and Price contingencies		620.0	620.0	1.02%
		Front-End Fees	15.5		15.5	0.03%
		Construction Investment in Total	**6200.0**	**6200.0**	**12400.0**	**20.41%**
		Commitment Fee		31.8	31.8	
		Interest During Implementation		548.7	548.7	
		Investment Total	**6200.0**	**6780.5**	**12980.5**	
3	Xinjian	Strengthen Linkage between	20.0	15.0	35.0	0.06%

Serial No.	School Name	Project Components	Loan	Domestic counterpart funds	total	The proportion of total investment
	g Institute of Light Industry Technology	School and Industry				
		Update Curriculum	1009.6	145.5	1155.1	1.90%
		Building up High Quality Teams	498.0	463.5	961.5	1.58%
		Improve External Support to Other Schools and Local Communities		65.0	65.0	0.11%
		Upgrade Facilities and Equipment	4644.5	4841.0	9485.5	15.61%
		Provincial Activity	12.4	50.0	62.4	0.10%
		Physical and Price contingencies		620.0	620.0	1.02%
		Front-End Fees	15.5		15.5	0.03%
		Construction Investment in Total	**6200.0**	**6200.0**	**12400.0**	**20.41%**
		Commitment Fee		31.8	31.8	
		Interest During Implementation		548.7	548.7	
		Investment Total	**6200.0**	**6780.5**	**12980.5**	
4	College of Xinjiang Uyghur Medicine	Strengthen Linkage between School and Industry	97.0		97.0	0.16%
		Update Curriculum	467.1		467.1	0.77%
		Building up High Quality Teams	512.0		512.0	0.84%
		Improve External Support to Other Schools and Local Communities	168.0		168.0	0.28%
		Upgrade Facilities and Equipment	4928.0	4750.0	9678.0	15.93%
		Provincial Activity	12.4	50.0	62.4	0.10%
		Physical and Price contingencies		160.0	160.0	0.26%
		Front-End Fees	15.5		15.5	0.03%
		Construction Investment in Total	**6200.0**	**4960.0**	**11160.0**	**18.37%**
		Commitment Fee		31.8	31.8	
		Interest During Implementation		548.7	548.7	
		Investment Total	**6200.0**	**5540.5**	**11740.5**	
5	Urumqi Vocational Univers	Strengthen Linkage between School and Industry	120.0	70.0	190.0	0.31%
		Update Curriculum	530.0		530.0	0.87%
		Building up High Quality Teams	960.0	40.0	1000.0	1.65%

Serial No.	School Name	Project Components	Loan	Domestic counterpart funds	total	The proportion of total investment
	ity	Improve External Support to Other Schools and Local Communities	250.0	60.0	310.0	0.51%
		Upgrade Facilities and Equipment	4312.1	5360.0	9672.1	15.92%
		Provincial Activity	12.4	50.0	62.4	0.10%
		Physical and Price contingencies		620.0	620.0	1.02%
		Front-End Fees	15.5		15.5	0.03%
		Construction Investment in Total	**6200.0**	**6200.0**	**12400.0**	**20.41%**
		Commitment Fee		31.8	31.8	
		Interest During Implementation		548.7	548.7	
		Investment Total	**6200.0**	**6780.5**	**12980.5**	
Project Construction Investment Total			**31000.0**	**29760.0**	**60760.0**	**100.00%**
Total Investment of the Project			**31000.0**	**32662.5**	**63662.5**	

Table 1.2-2 List of Project Components

Serial No.	School	The main Project Components		Unit	no.	Note
1	Xinjiang College of Engineering	Strengthen Linkage between School and Industry		Item	2	
		Update Curriculum		Gate	48	Containing eight minority Textbooks
		Building up High Quality Teams		Person / times	500	
		Improve External Support to Other Schools and Local Communities		Item	3 days	
		Upgrade Facilities and Equipment	The second engineering school buildings	m^2	16000	
			Embedded existing laboratory teaching laboratory equipment	/ Sets	698	
2	Xinjiang	Strengthen Linkage between School and		Item	3 days	

	Agricultural Vocational and Technical College	Industry				
		Update Curriculum		Gate	50	
		Building up High Quality Teams		Person / times	941	
		Improve External Support to Other Schools and Local Communities		Item	2j	
		Upgrade Facilities and Equipment	Integrated Training Center	m^2	20000	
			Laboratory test equipment	/ Sets	1189	
3	Xinjiang Institute of Light Industry Technology	Strengthen Linkage between School and Industry		Item	2j	
		Update Curriculum		Gate	70	
		Building up High Quality Teams		Person / times	787	
		Improve External Support to Other Schools and Local Communities		Item	3 days	
		Upgrade Facilities and Equipment	Building Training	m^2	10000	
			Industrial Training Center Building	m^2	10000	
			Soil playground renovation	m^2	12,000 RMB	
			Original art hall renovation	m^2	800	
			18 Laboratory Equipment	/ Sets	767	
			Digital network equipment	Set	Page 1	
4	College of Xinjiang Uyghur Medicine,	Strengthen Linkage between School and Industry		Item	2j	
		Update Curriculum		Gate	16	
		Building up High Quality Teams		Person / times	1559	
		Improve External Support to Other Schools and Local Communities		Item	Page 1	
		Upgrade Facilities and Equipment	Teaching Building	m^2	20200	
			Laboratory building	m^2	15200	
			Experimental training room equipment	/ Sets	130	
5	Urumqi Vocational University	Strengthen Linkage between School and Industry		Item	3 days	
		Update Curriculum		Gate	48	
		Building up High Quality Teams		Person	655	

				/ times		
		Improve External Support to Other Schools and Local Communities		Item	4	
		Upgrade Facilities and Equipment	Industry Center Building	m^2	19920	
			Three bases laboratory equipment	/ Sets	2010	

1.2.1 Construction Site

Construction site of each sub-project is presented in the table 1.2-3 below. The location of each sub-project construction site is shown in Figure 1-1-1.6.

Table 1.2-3 List of Sub-project Construction Sites

Serial No.	School Name	The project site
1	Xinjiang College of Engineering	No. 1350, Aydingkol Lake Road, Toutunhe District, Urumqi
2	Xinjiang Agricultural Vocational and Technical College	No. 29, East Wenhua Road, Changji City (Changji Campus)
3	Xinjiang Institute of Light Industry Technology	No. 259, Xisi Lane, South Midong Road, Urumqi
4	College of Xinjiang Uyghur Medicine	Economic and Technological Development Zone (New Campus), Khotan County
5	Urumqi Vocational University	No. 566, Xiangyun Zhong Road, Toutunhe District, Urumqi (New Campus)

Figure 1-1 Location of Xinjiang in China

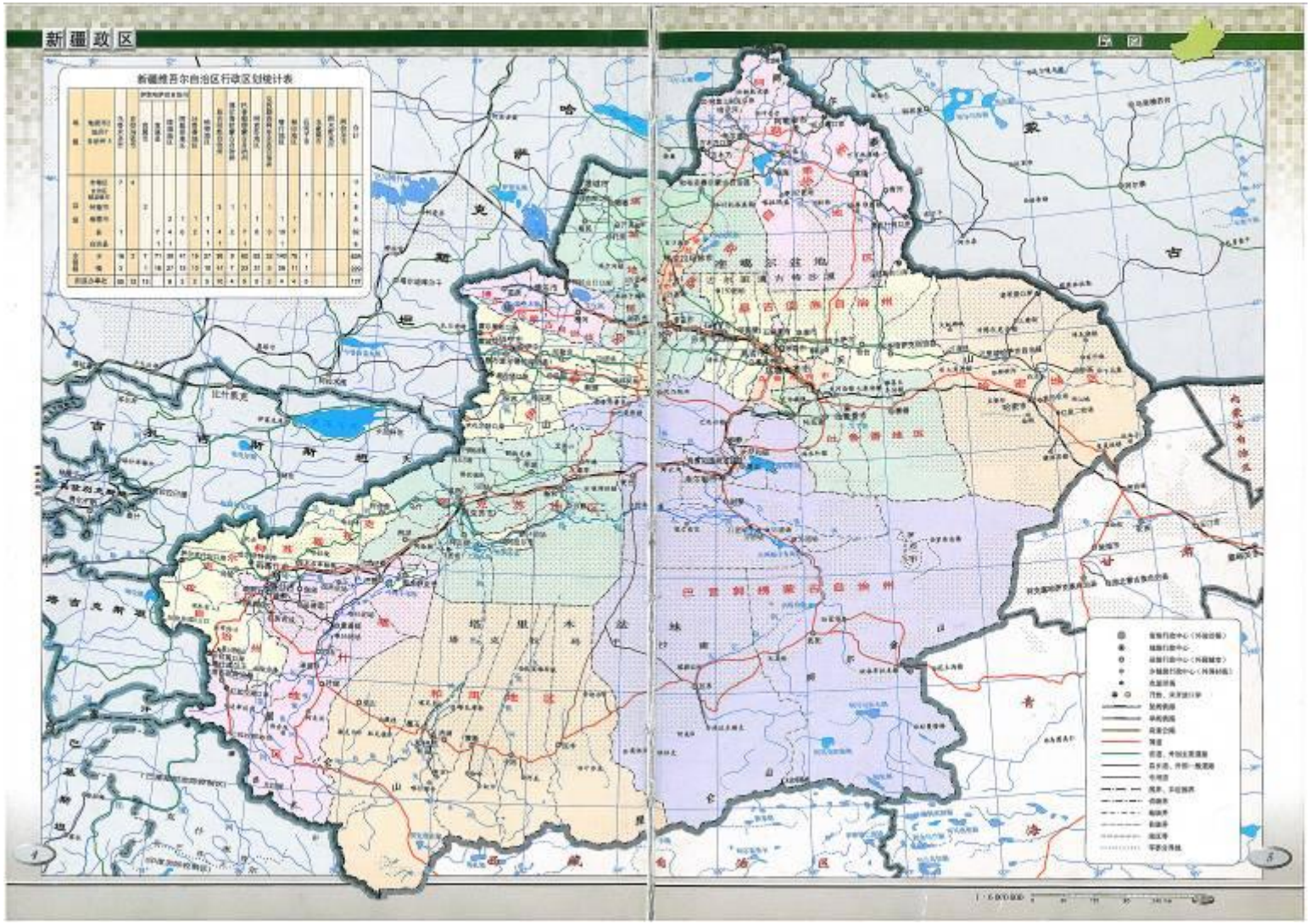


Figure 1-2 Administrative Region of Xinjiang

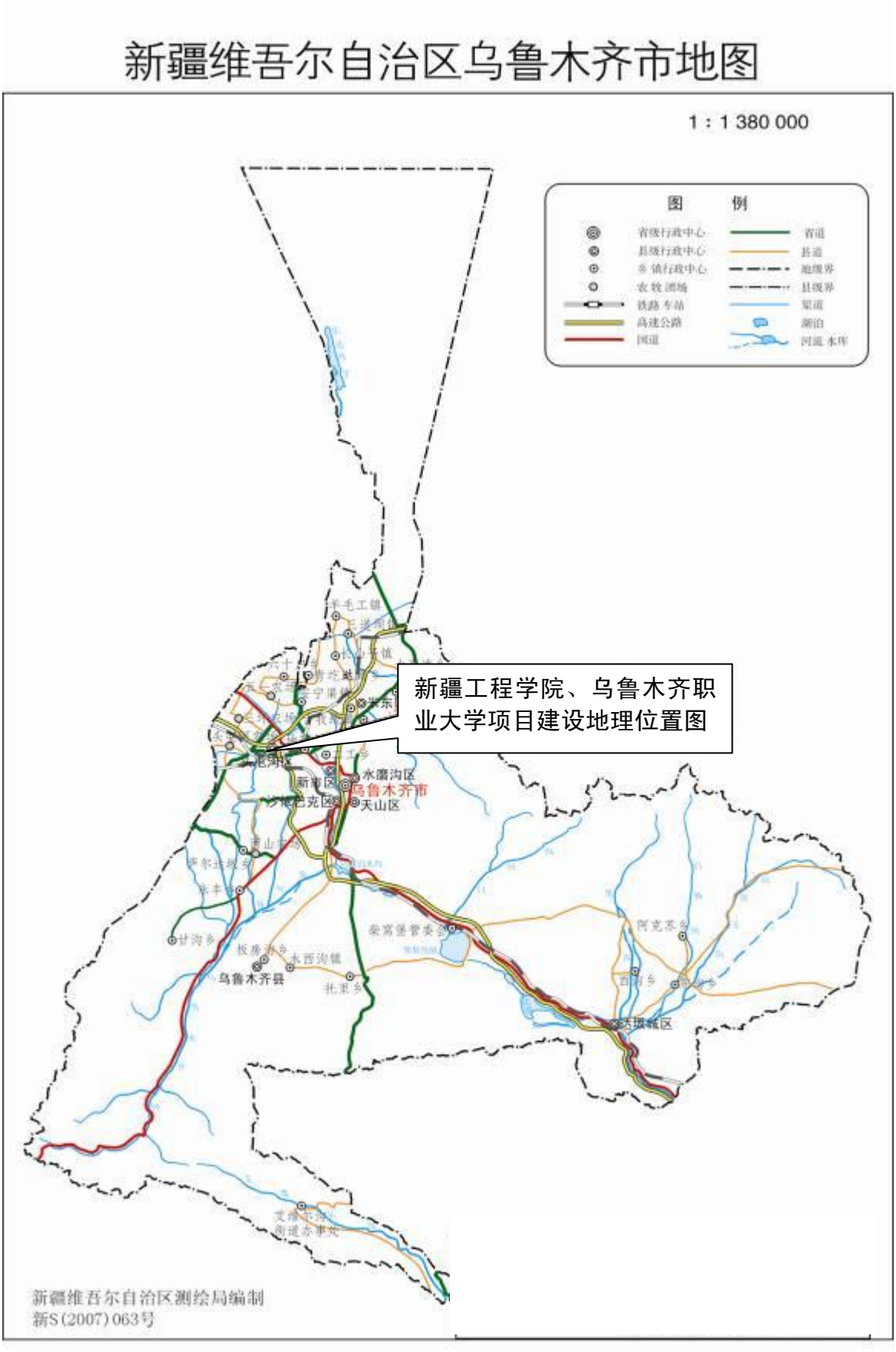


Figure 1-3 Project Locations of Xinjiang College of Engineering, Urumqi Vocational University

新疆维吾尔自治区昌吉市地图

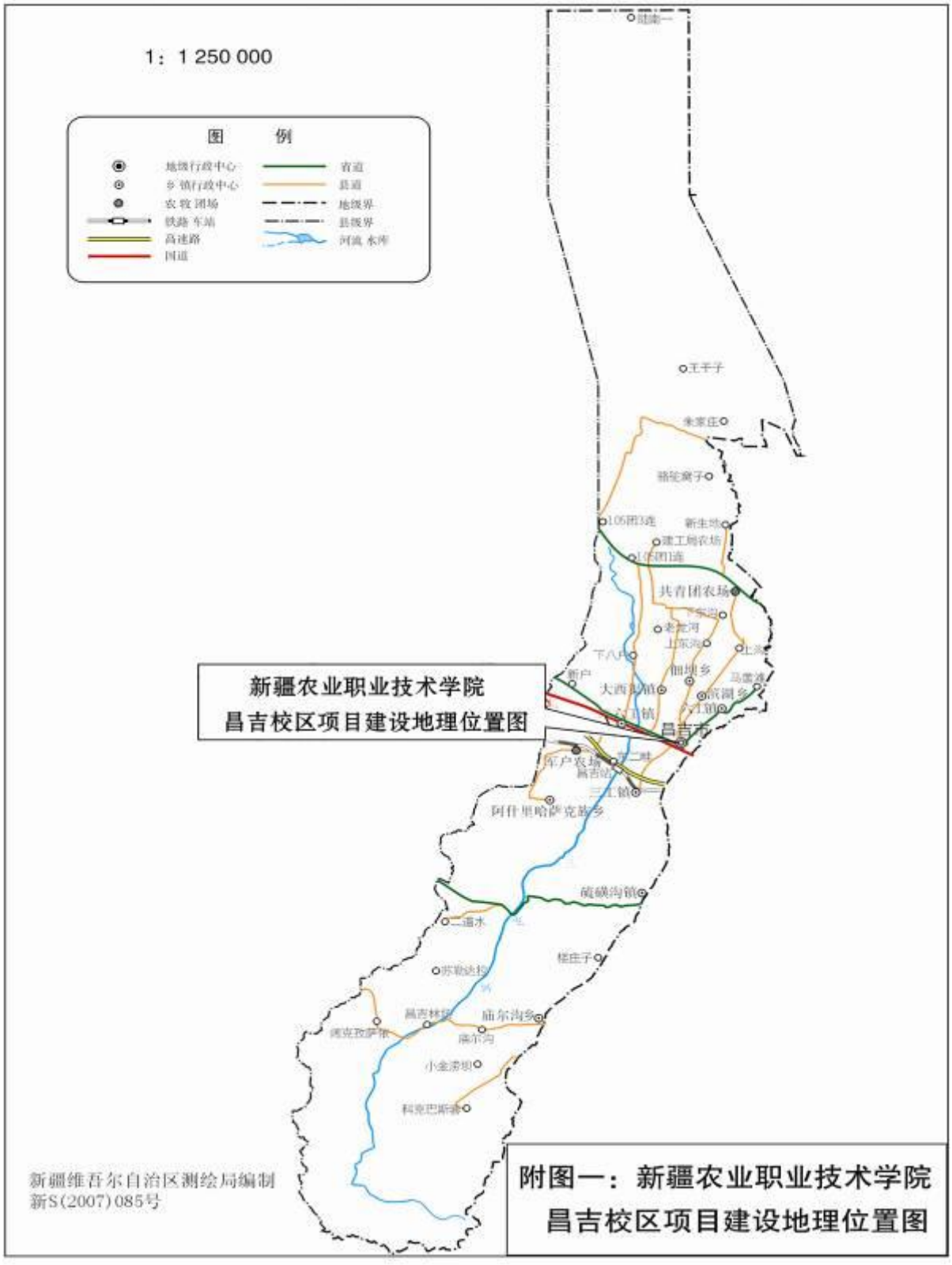


Figure 1-4 Project Location of Xinjiang Agricultural Vocational and Technical College

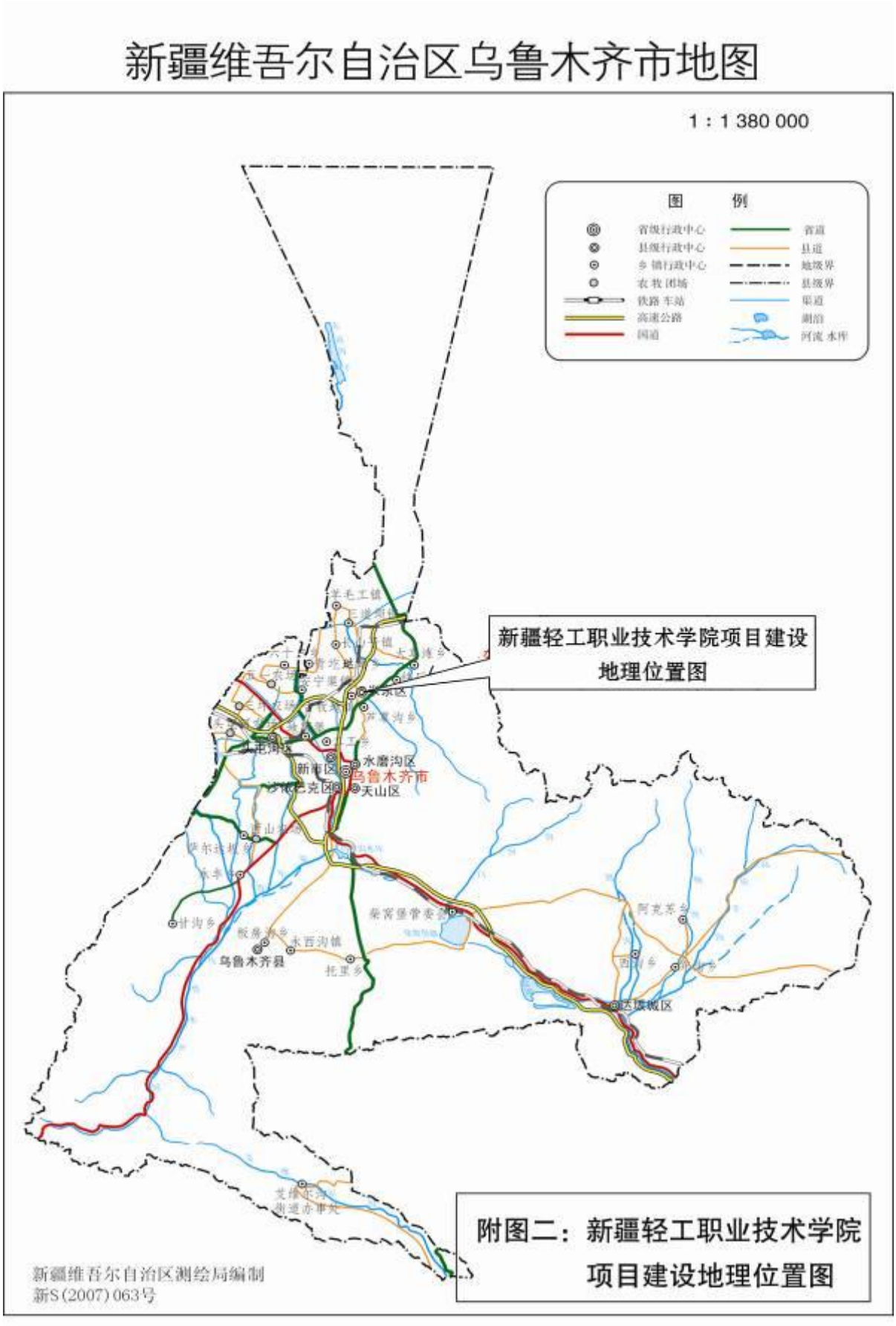


Figure 1-5 Project Location of Xinjiang Institute of Light Industry Technology

新疆维吾尔自治区和田县地图

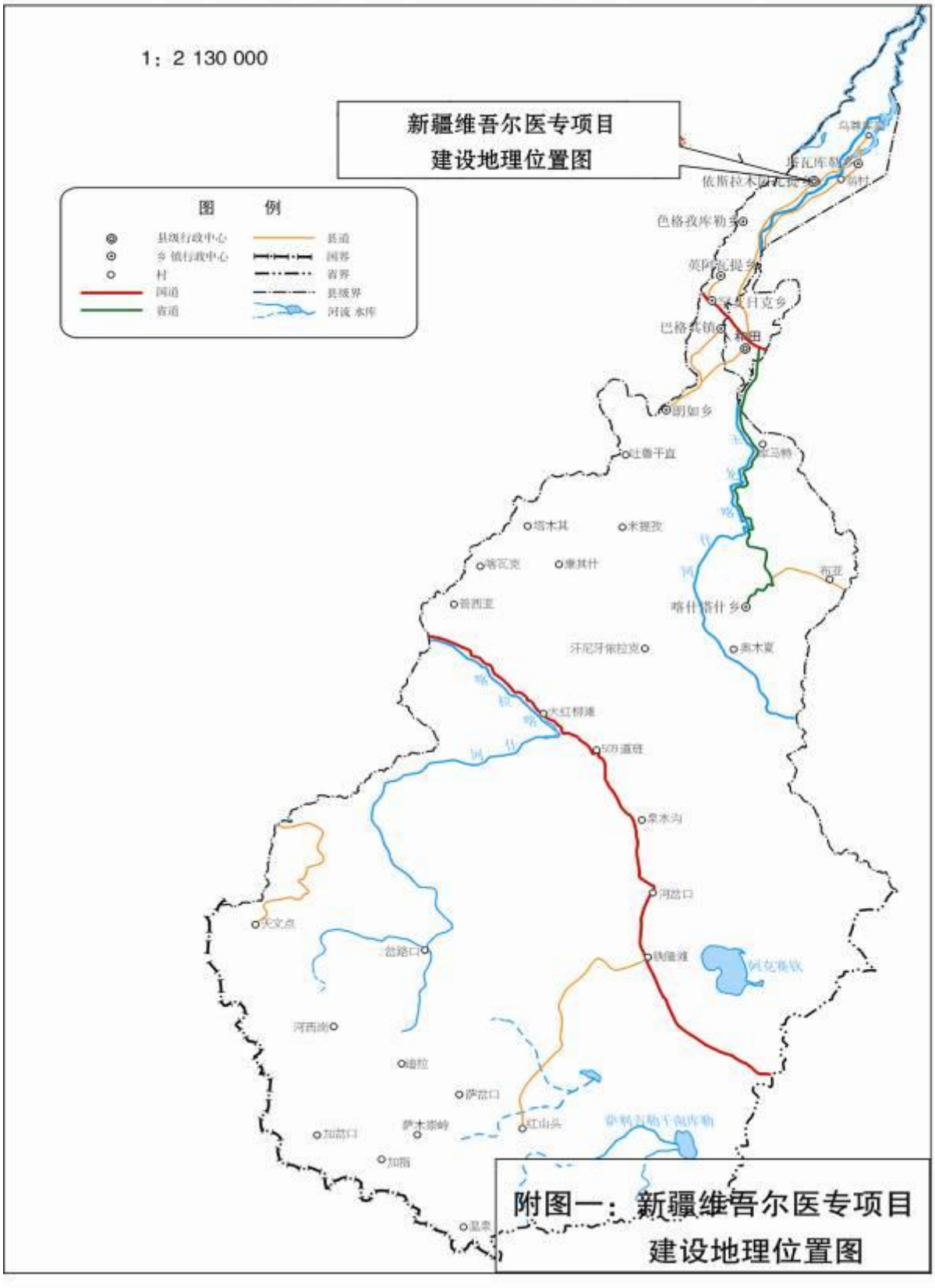


Figure 1-6 Project Location of College of Xinjiang Uyghur Medicine

1.3 Purpose of Composing ECOP

In order to meet the national assessment requirements of infrastructure projects impact on environment, all the sub-projects witnessed environmental impact assessment during feasibility study. According to the World Bank's safeguard policies OP4.01 and relative classification requirements issued in China, the project here is classified as category B in environmental impact assessment, requiring special precautions against potential adverse effects on the environment during the construction of civil works to protect the health of people in construction area, and neighborhood from interference.

"*Environmental Codes of Practice*" includes project description, set-up of the environmental management agencies, implementation plan of environmental protection measures, environmental supervision program, reporting procedures and requirements of document management.

The purposes of composing this environmental codes of practice are as follows:

(1) To identify the potential impacts on environment during the construction of the project, and propose measures supposed to be taken to reduce the impacts;

(2) To define the duties and obligations of protecting environment supposed to be take by project-related departments during the construction;

(3) To propose measures to avoid or minimize potential adverse impacts on environment during the construction, which are supposed to be a guide to environmental management of the project, directing project contractors to compose and implement measures to mitigate the adverse impacts on environment during the construction;

This procedure will serve as the tender documents and contract documents in a separate attachment, the requirements specified by field engineers and construction supervision responsibilities in the implementation of this specification. Contractor must be fully aware of the environmental measures that should be purchased and promise to include it in the construction costs.

1.4 Principles of ECOP

(1) Scientific, objective and fair: " ECOP ", after considering the impact of the implementation of the

codes on a variety of environmental factors and the ecosystem they compose, must be scientific, objective and fair, and be in accordance with scientific decision-making.

(2) To be integrated: " ECOP ", should be associated with related policies, plans, programs and corresponding projects as a holistic consideration.

(3) Public participation: public participation is encouraged and supported during the process of implementing ECOP, taking all aspects of social interests and ideas into consideration.

(4) To be consistent: the implementation of ECOP should be consistent with the construction in terms of level and detail.

(5) To be operational: It should be as far as possible to choose a simple, practical, and feasible method which has been proved practicable, which enables the ECOP to be operational.

1.5 Scope of Practice

This code is applied to meet the relevant requirements on environmental behavior in the construction process of Xinjiang Technical and Vocational Education and Training Project loaned by World Bank. In Xinjiang Agricultural Vocational and Technical College, Xinjiang Institute of Light Industry Technology, College of Xinjiang Uyghur Medicine, and Urumqi Vocational University, it is according to domestic requirements of construction project environmental impact assessment to compose this ECOP on the basis of environmental impact assessment, as well as the project implementation guidelines to the relevant contractors, environmental supervision and the property owners to take all effective measures to mitigate adverse environmental impacts and fulfill regulatory duties.

1.6 Related Rules, Regulations and World Bank Safeguard Policy

1.6.1 The Related Laws Issued by the Central Government

(1) "Environmental Protection Law of People's Republic of China" (December 1989);

(2) "Pollution Prevention Law of People's Republic of China Water" (June 2008);

(3) "Air Pollution Prevention Law of People's Republic of China" (September 2000);

(4) "Solid Waste Pollution Prevention Law of People's Republic of China" (April 2005);

(5) "Environmental Noise Pollution Prevention Law of People's Republic of China" (March 1996);

(6) "Water and Soil Conservation Law of People's Republic of China" (December 2010);

(7) "Law of Environmental Impact Assessment of People's Republic of China" (October 2002)

1.6.2 National Regulations Related to the Project

(1) " Environmental Protection Management Regulations of Construction Project of People's Republic of China" (November 1998);

(2) " Environmental Protection Classification Catalog of Construction Project" (January 1, 2003);

(3) "Implementation Regulations of Land Management Law of People's Republic of China" (August 28, 2004);

(4) "Pollution Prevention Measures of Abandoned Hazardous Chemicals" (October 2005);

(5) " Implementation Rules of Law of Air Pollution Control of People's Republic of China" (May 1991);

(6) " Environmental Protection Management Regulations of Construction Project" (Decree No. 253 of State Council, November 29, 1998);

(7) "National List of Hazardous Wastes" (Revised in August 2008);

1.6.3 Relevant Laws and Regulations of Xinjiang Uygur Autonomous Region

(1) " Environmental Protection Ordinance of Xinjiang Uygur Autonomous Region " (February 1, 2012);

(2) " Notice of the Prevention of Soil Erosion in Key Prevention Area, Key Governance Zone and Key Governance Zone Division in Xinjiang" (October 31, 2000);

(3) " Water Environment Functional Division in Xinjiang Uygur Autonomous Region" (December 2002);

(4) "Prevention Measures of Hazardous Waste Pollution of Xinjiang Uygur Autonomous Region" (May 1, 2010).

(5) "Dust Prevention Plan of Urumqi" (March 7, 2011)

1.6.4 World Bank Safeguard Policies

According to the environmental assessment requirements of business policy OP4.01 in World Bank's safeguard policy, it is needed in this project to develop environmentally-friendly implementation codes to avoid and mitigate the possible negative impact of the construction process on the environment.

Although the project has not touched the other related security policies of the World Bank, it is still in accordance with the requirements of the World Bank, to propose corresponding protective measures in response to "accidental discovery of cultural relics" in construction, and require the contractor to take the appropriate action.

2 Xinjiang Uygur Autonomous Region Natural and Social Environment Overview

Table 2-1 Overview of the Natural Environment in the Project Construction Area

Project in the county/city	Location	Topography	Water Survey	Climate/weather	Natural Resources
Urumqi City	Urumqi is the provincial capital of Xinjiang, and political, economic and cultural center of Xinjiang. It is also an important gateway of western China to opening up as well as a bridgehead of New Eurasian Continent Bridge, located in the geographic center of the Asian continent. It is also an important city in central Eurasia. Urumqi is located in the north-central of Xinjiang Uygur Autonomous Region, along the northern piedmont of central Tianshan Mountains as well as the southern edge of Junggar Basin, with its western and eastern border with Changji Hui Autonomous Prefecture, and neighboring Bayinguoleng Mongolia Autonomous Prefecture, and with its southeast of the junction with the Turpan Prefecture. The total administrative region is up to 14,200 km^2, with a population of 2.62 million in total in 2010, covering seven districts and a	Urumqi City is located in the hinterland of the Eurasian continent, along the northern slope of Tianshan Mountains and in the middle of southern margin of the Junggar Basin. It is the city which is the farthest one from ocean. Mountains account for about 50.0%, hills for 16.6% and plains for 33.4%.	Local underground water is mainly from lateral runoff of the upper valley groundwater, canal water infiltration, dams infiltration, lateral infiltration of coastal bedrock fracture water and vertical rainfall infiltration; sloping plain groundwater supplement is mainly from Dongshan River, surface water of Xishan river and canal water, water leakage of farmland irrigation, followed by plain waterfall infiltration, lateral infiltration of valley underground runoff. Groundwater flow is from the river valleys to sloping plain and to the northern fine earth plain, roughly from south to north.	Urumqi belongs to the temperate continental arid climate with a wide scope of diurnal temperature difference, and dramatic changes from summer to winter; it features little rainfall while high degree of evaporation; the cold winter is so long that there is no even distribution of four seasons, and winter temperature inversion often occurs. Annual rainfall is 236mm with annual evaporation of 2616.9mm, The annual average wind speed is 2.0m / s, and the annual average temperature is 7.6 ℃.	There are 29 kinds of minerals in Urumqi distributed in 129 mineral ore fields in no less than 30 large and medium-sized deposits, which are mainly coal, oil, copper, manganese, iron, gold, stone, gravel, clay, salt, mirabilite, and mineral water. Coal reserves proved are up to 10 billion tons, , mainly distributed at Yamalik Mountain, Shuimogou, Lucaogou etc. Salt reserves are up to 250 million tons, mirabilite

	county, two state-level development zones and export processing zones.				reserves are up to 110 million tons, salt and mirabilite are produced in mirabilite salt pond, which is composed of east and west salt lake;limestone reserves are up to 120 million tons, manganese ore reserves are up to 22 thousand tons, besides that the oil reserves of Chaiwopu is very promising.
Hotan County	Hotan is located in the southernmost part of Xinjiang Uygur Autonomous Region. Its neighbor to the east is Qiemo County of Bayinguoleng Mongolia Autonomous Prefecture, to the west is Yecheng County, Markit County and Bachu County of Kashgar, to the north is Shaya County and Awat County of Aksu Prefecture, to the south is Tibet Autonomous Region; to the southwest is close to the actual control area of Kashmir of India and Pakistan.	The county has four geomorphic units: the southern mountain areas above 3500 meters above sea level, including between the Karakoram and western Kunlun Mountains Aksai Chin; fluctuation band between the mountainside, 1500--3500 m above sea level; mountain former alluvial fan areas, 1300--1500 m above sea level; the northern part of the alluvial plain, the southern area of the new reclamation area, an altitude of 1300 meters, substantially flat.	Surface water runoff in Hotan County is 1.088 billion m^3, of which the amount actually used is 610 million m^3, accounting for 56.07 % of the total amount of local water resources. They are mainly from Yurungkax River and Karakash River. Groundwater Storage is 452 million m^3, in which 380 million m^3 are useful. There are four small and middle-sized reservoirs with an annual water reserve of 43.3 million m^3.	Hotan County is of typical warm temperate arid desert climate.The annual average temperature is 12.2 ℃ with four typical seasons. Summer in Hotan is long while autumn is comparatively short. In Spring it is windy and in winter it is never freezingly cold, The annual rainfall is only 33.5 mm / year. 2643 hours are of sunshine and 210 days without frost, which result a comfortable climate.	Hotan is rich in energy and mineral resources in varieties and large reserves with a great potential for exploitation. At present, more than 60 minerals, 168 mines have been found in this region, especially including natural gas, coal, limestone, gypsum, sulfur, granite, marble and jade all in large amount of reserves. Spodumene, antimony, gold rock, lead and zinc ore, manganese magnet and other metal deposits are also found in some reserves.

Changji City	Changji City is located in the northern pediment of Tianshan Mountains, southeast margin of the Junggar Basin, with its east longitude 85 ° 34 'to 91 ° 32', northern latitude 43 ° 06 'to 45 ° 38'. It is a city that must be passed on the New North Road of ancient world-famous "Silk Road" leading to Central Asia and European countries. Changji City neighbors Urumqi city, Hutubi County, Hejing County and Fuhai County. The urban area runs 260 km from north to south and 30km in width, covering a total area of 7963.9 km^2. Locals include Hui, Han, Kazak, Uygur and other 32 ethnic groups, whose total population is 270,000, accounting for 23% are ethnic minority. The government of Changji Hui Autonomous Prefecture is in Changji City, which is also the satellite city of Urumqi--the regional capital. This city, enjoying unique geographical location, is located in the center of Urumqi-Changji-Shihezi economic Development Zone.	Changji City landforms can be divided into the southern mountains, the central plains and northern deserts of three parts, the topography of the south than in the north was the ladder of the potential, the north and south elevation over 4000 meters, sloping from southeast to northwest, south of the Tianshan Mountains are rich, middle for the vast alluvial plain, the vast northern desert basin, which spans the southern region of the northern slope of the Tianshan Mountains, used to call "Tianshan Mountains."Domestic Tianger highest peak, 4562 meters above sea level.	Territory of Changji City covers 158 glaciers, which equals an area of 60 km^2. The total amount of water storage of the glaciers is 1.988 billion m^3 as Changji's natural solid reservoir.The total amount of the urban underground water reserves is 215 million m^3, dynamic reserves of groundwater is 1.2-1.5 billion m^3, with an average annual real exploitation of 0.35-0.5 billion m^3. Originated in the alpine glaciers of Tianshan Mountains, both Santunhe River and Toutunhe River run across the city from south to north with an annual runoff up to 546 million m3. Santunhe River Reservoir and Toutunhe River Reservoir were build and their total reserves capacity are 35 million m^3 and 7.5 million m^3 respectively,	Changji is in the temperate zone, its typical continental arid climate brings there very cold winters and hot summers with a large degree of temperature difference. Due to the terrain conditions, climate varies dramatically from south to north. Climate in the southern mountainous area is distinctive: in summer local rainfall is abundant; desert climate features the northern area..Changji enjoys ample sunshine with 2700 hours per year, the total annual solar radiation is up to 133.6 kilo cal / cm^2; annual average high temperature ≥10 ℃ is accumulated up to 3450 ℃, the annual average temperature is 6.8 ℃, 1 The average temperature in January is -15.6 ℃, and 24.5℃ in July; the average annual rainfall is 190mm, rainfall in summer significantly outweighs that in winter; frost-free period is	Local mineral resources include coal, limestone , natural gas and sulfur, in which coal is the most abundant resources in a large amount and of high quality. Coal reserves are up to 5 billion tons and natural gas proved area is 60 km^2.

				175 days per year.	

School Name	Table 2-2 Project Overview of Regional Social Environment				
	School Profile	Administrative divisions and population	Socio-economic Profile	Transportation	Posts and Communications
Urumqi Vocational University	Urumqi Vocational University is a public higher vocational institutions of full-time education, as well as the only a comprehensive full-time higher vocational college in Urumqi. The school has three old campuses including the main campus, west campus, Youth Road Campus and a new campus under construction, accounting for a total area of 2351 acres. The school currently has teaching laboratory equipments worth more than 67 million yuan, in 194 school labs(training rooms), 189 off-campus training bases. There is a collection 700,000 books in the school library. The new campus occupies 1055 acres, with a total investment of 389 million yuan. The school has become one of the largest vocational colleges in Xinjiang, forming a higher vocational education-centered, combined with junior vocational education, teacher training and adult education as an important part of the school	Toutunhe District, located in the northwest of Urumqi, east to the Xinshiqu District, west to Changji, south to Tianshan Mountains, north to Urumqi County. The total area is 275.59 square kilometers. It consists of 5 streets: Toutunhe streets, West Railway Station street, Wangjiagou street, Wu Chang street, West Road of North Railway Station street; one	Urumqi Economic and Technological Development Zone (Toutunhe) is a state-level development zone, and a secondary center of Urumqi City. In 2013, the development targets includes: to complete a regional GDP of 27.6 billion yuan, an increase of 26 percent over the previous year; industrial added value of 15.6 billion yuan, an increase of 35%; local fiscal revenue of 3.6 billion yuan, an increase of 26%; import and export trade of $ 2.3 billion, an increase of 25 %; social fixed assets investment	Urumqi Economic and Technological Development Zone (Toutunhe) is adjacent to the Export Processing Zone (national level), east to the high-speed rail passenger transportation hub(under construction), north to Urumqi International Airport. The zone has the largest train marshaling	The Economic and Technological Development Zone (Toutunhe) has been fully equipped with switching networks, broadband internet, long distance digital transmission network, mobile communications networks and other modern public telecommunications network. Project Area Telecommunications laying rate has reached 100 %,

	structure. There are 16 teaching units, including School of Business Administration, Information Engineering College, etc. The amount of existing staff is 744. There are 64 majors, all kinds of students accounting for 14,873, including 10,735 of higher education, 2227 in junior education and 1,837 in adult education. And 38 students are foreign students. With the guide of the School's talent strategy, it is actively to promote the "three programs, five projects". And constantly the quality of teachers is improved so that 140 teachers are awarded high-grade professional title, double quality teachers' ratio is up to 86%, and three regional-level teaching teams are formed.	administrative village: Henanzhuang Village. District Government is located in the 10th North Railway Station Road. Within the District there are the 12th Agricultural Division of XPCC, Sanping Farm, Wuyi Farm, Toutunhe Farm, inhabited by 26 ethnic groups including Han, Uygur, Kazak, Hui, Man, Xibe, Russia, Mongolia, and Korea, etc.	of 15.08 billion yuan, an increase of 40%; total retail sales of social consumer of 2.28 billion yuan, an increase of 23%; a 4% fall of industrial added value of energy consumption; 9,000 new jobs; registered urban unemployment rate at 2.5% or less.	yard of Xinjiang, the largest railway station and cargo storage container center station of Xinjiang(under construction), Urumqi-Changji Road, and Urumqi- Kuitun Expressway cross the zone. West Extension of Suzhou Road, West Extension of Xinyi Road link the zone to the urban area. Water, electricity, building materials and other well prepared and convenient to be transported.	meeting the requirements of project.
Xinjiang College of Engineering	Xinjiang College of Engineering, which was founded in 1958 and located in Urumqi, belongs to the Education Department of Xinjiang Autonomous Region. The College, with its four campuses, takes up an total area of 1,301,303 m ² (1952 acres), consists of the main campus of Aydingkol Lake Road in Urumqi Economic and Technological Development Zone, Nanchang Road Campus in Shayibak District, South and North Campuses in Tianjin Road in Xinshiqu District. Total building area is				The project is located in Urumqi Economic and Technological

	308,600 m ², including an area of 185,000 m ² for teaching, research and administrative work; student living space is 124,000 m ². There are 211 classrooms in all. The college has established 19 training centers and 76 off-campus training bases and 91 laboratories. The college has a staff of 1189 people, including 752 full-time teachers, 357 dual qualified teachers; 15 of whom are of senior grade of professional titles, 202 are of pre-senior grade of professional titles, 348 are of middle-graded titles, and 168 are of junior titles; 15,093 full-time students are in the school, including 2008 undergraduates, 12,403 higher vocational students, and 682 junior vocational students. According to the 12th Five-year Development Plan of Higher Education Schooling Size Development In Xinjiang Uygur Autonomous Region ", the campus will enlist 18,000full-time students, including 13,000 higher vocational students.				Development Zone (Toutunhe), 1.5km away from Xinjiang College of Engineering, with a social environment same to Xinjiang College of Engineering.
Xinjiang Institute of Light Industry Technology	Xinjiang Institute of Light Industry Technology, established in 2000, is among the first group of public-owned vocational colleges founded by Xinjiang Uygur Autonomous Region. It belongs to Economic and Information Technology Commission. It is one of the top 100 leading vocational colleges in China, and the leading unit of the Second Industrial Park of Xinjiang Vocational Education. The College is located in Midong District of Urumqi covering a total of 2,300 acres (4 campuses), including construction area of 370,000 square meters, the staff of 749 people, and 512 of them are full-time teachers, including 462 of them with high-ranking professional titles and 121 of them have been awarded master's degree. Besides, 305 teachers are invited from companies. Six teachers are awarded "Regional prestigious Teachers". There are 11,224 students (including	Midong District, located in northeast suburb of Urumqi, 15 km from city center of Urumqi. To the east it is adjacent to Fukang City, and Changji City, Wujiaqu City, Urumqi County to the west. To the south it is adjacent to Dabancheng District of Urumqi City. To the north it is adjacent to Fuhai County. Its administrative area is 3407.42 square kilometers, including urban area of 40 square kilometers. It has 5	In 2013, Midong District's GDP reached 18 billion yuan, an increase of 18%.Total fixed asset investment is 9,000,000,000 yuan; local general budget revenue is 1.4 billion yuan, an increase of 22%.The total retail sales of social consumer goods is 2.353 billion yuan, an increase of 21%; per capita disposable income of urban residents is increased by 12%, rural per capita net income growth of 12%. According to the specific requirements of Xinjiang Uygur Autonomous Regional Party Committee, the Government's development strategy, Midong,	Midong District, where the College is located, is within the "30 minutes fast traffic circle from city center", which can realize connecting between Midong and shipping and passenger rail center of Urumqi city. It includes Midong Avenue, North Circle Road, Hetan express, etc. To the south the college is connected with the main road, to the	Currently, the college which has been fully completed, Urumqi meters Eastern controlled switching networks, broadband internet, long distance digital transmission network, mobile communications networks and other modern public telecommunications network. Project Area Telecommunications laying rate has reached 100 percent, to meet project requirements.

	9558 vocational students), teaching equipment worth 110 million yuan, 17 professional training bases, 132 labs for experiment and training, and five training workshops on campus. Serving light industry, textile, chemical, mechanical and electrical industries of Autonomous Region, the college offers 61 majors for the society. The college consists of Food Science and Biotechnology Branch, Chemical Technology Branch, Environment and Resources Branch, Textile Technology Branch, Mechanical Technology Branch, Electrical Technology Branch, Construction and Materials Technology Branch, Information and Software Technology Branch, Economics and Management Branch, Language and International Cooperation Branch, Humanities and Arts Branch, Continuous Education Branch, Department of Public Subjects, Preparatory Department, Department of Ideology and Political Theory Research. It has completed six teaching teams of regional level, 16 quality courses of national and regional level. The college has seven national key construction majors,	towns, two townships, and six street offices with a total population of 296,000. The District People's Government is at Fuqian Middle Road.	combined with regional characteristics, unswervingly takes a new road to industrialization, deciding to become an important part of the Urumqi City center, the core area of Xinxiang's manufacturing and Urumqi international trade and modern logistics region.	east it is connected with Hetan express.	
College of Xinjiang Uyghur Medicine	College of Xinjiang Uyghur Medicine, founded in 1984, belongs to the Education Department of Xinjiang Autonomous Region, which is the only one Uighur medical college dedicated to the succession, mining, sorting, enhancing and promotion of Uighur medical talents as the	Hotan County has a total area of 40,300 square kilometers, including 10 townships, a gardening village, Wuzong Shaw	Hotan City includes Hotan County authorities, the Headquarters of 14th Agricultural Division of XPCC. Hotan is also a center of politics, economy, culture,	Hotan Prefecture has major road--G315 National Highway, and an airport. Southern Xinjiang	In Hotan City, telecommunications, communications industry has developed rapidly, including entire programmable

	educational goals with a full-time education system. In 2009, the school successfully passed the talent development evaluation by the Ministry of Education. There are five higher vocational majors including Uighur Medical Study, Uighur Medicine, Medical testing, nursing and rehabilitation. There also three medical directions including Uighur Physician, Uighur Gynecology and Uighur Pharmaceutical Studies. By the end of 2013, there are a faculty of 244, 127 full-time teachers, including 50 senior titles, (8 are of high-grade title, 42 are of pre-senior grade of professional title), six discipline leaders, two college outstanding teaching teams, 56 dual qualified teachers, and 4779 students in total. School covers 2634 acres (including 100 acres of an old campus, 24 acres of branch, 1000 acres of new campus, 200 acres of pharmaceutical factory, 30 acres of hospital, 1280 acres of Uighur medicine planting base).The total construction area is 62,457.97 square meters, consists of a subordinate hospital, a pharmaceutical factory, a manufacturing lab. Teaching and support space cover 29,314 square meters, including 17 on-campus professional training labs, experimental training equipment worth 14.75 million yuan, 28 multimedia classrooms, 5 online classrooms. There are 120,000 paper books,	Management District and New Economic Zone, Kunlun Industrial Park, 206 administrative villages, 27.15 million people. They are 13 ethnic groups including Uygur, Han, Kazak, Hui, etc. Uygur account for 99%. It is a typical border agricultural county of multi-ethnic inhabitants. It is also a national-level poverty-stricken county.	education, transportation and communication, and trade center. The total population is 29.5 million, 87.31% residents are Uygur, and Han Chinese accounting for 12.28% , other ethnic groups accounting for 0.68%; urban population is 13.56 million, accounting for 45.97%, 15.94 million rural population accounting for 54.03 %.It has arable land of 15.56 million mu. By the year of 2013, Hotan City’s GDP was 3.545 billion yuan, accounting for 20.62 % of the total regional GDP, the first industry takes a value of 575 million yuan, the second industry takes 1.143 billion yuan, and the third industry takes a value of 1.827 billion yuan. The city's per capita net income of farmers and herdsmen 6297 yuan.	Railway has witnessed its utilization in 2010. The project is located 9 km from Hotan airport, 500 kilometers west to Kashgar railway station, 1500 km to Urumqi. The city's transportation network, has achieved the goal of village roads. The project is located near the local major road--Beijing West Road.	fixed telephone, mobile communications coverage throughout the city, which are served by China Mobile, China Unicom and China Telecom. Postal services, computer internet business are fast and convenient. Hotan city’s programmable networks, mobile broadband communication networks and information network system can meet the requirements of the project. In the local area, telecommunications laying rate has reached 100%, meeting project requirements.

	250GB e-books (equals 2.1 million volumes), 117 kinds of academic journals, 1700 kinds of shared electronic academic journals.				
Xinjiang Agricultural Vocational and Technical College	Xinjiang Agricultural Vocational and Technical College, located in Changji Hui Autonomous Prefecture, was established in 1959. It is a full-time college focusing on higher vocational education. In 2009, the college passed the approval of Ministry of Education an Ministry of Finance, becoming one of the first group of nationally demonstrated vocational colleges. College graduates' employment rate ranked first for ten years consecutively among the colleges of the Autonomous Region. By the end of 2013, the college covers 8,000 acres, with 14,000 square meters of experimental and training building; it has a library and information building of 17,000 square meters, including a collection nearly 900,000 books; there is a China - Israel dry farming demonstration center, and other 86 on-campus training labs and training bases, keeping a favorable cooperation with enterprises. At present, the college has established 1556 “internship-employment” bases. The college has 13 branches including Biotechnology Branch, Gardening Technology Branch, Animal Science and Technology Branch, Economic and Trade Branch, Engineering Branch, Branch of International Cooperation, Continuing	Changji City, where the prefectural capital of Xinjiang Changji Hui Autonomous Prefecture is located, has a total area of 8,215 square kilometers, including mountains accounting for 40.7%, plains for 32.5%, desert accounting for 26.8%. It includes six townships and six towns, and six administrative offices. On its territory locates the 6th Agricultural Division Headquarters of XPCC, and 101st Regiment, 103rd Regiment, Military Families Farm, Communist Youth League Farm, and more than 150 units of the autonomous regions	In 2013, Changji’s GDP is 83.85 billion yuan, an increase of 16.0% calculated at comparable prices, which means the growth rate dropped 0.6 % compared with last year. Per capita GDP is 51,708 yuan, an increase of 16%. The first industrial added value is 21.84 billion yuan, an increase of 7.0%; the second industrial added value is 39.59 billion yuan, an increase of 22.9%, of which the industrial added value is 31.95 billion yuan, an increase of 23.1%; the third industry added value is 21.22 billion yuan, an increase of 13.2%. Three industries were 26.4: 47.9: 25.7. Three industries respectively benefit economic growth rate at 1.9%, 10.5% and 3.6%, 8.6% of which is contributed by industry.	The project is located in Changji National Agricultural Technology Park, divided by Wenhua East Road. The proposed school building is located in the southeast corner of the North Campus, east to Oasis Road, south to Wenhua East Road. It is 35 km away from Urumqi and 18 km from Urumqi International Airport. The school is 1.5 km from the 312 national highway, there are buses No.3, 6, 41, 44.	Changji City, Hutubi County have fully completed program-controlled switching networks, broadband Internet, mobile communications networks and other modern public telecommunication networks. The optical fiber is available in the college. Project Area is 100% covered by Telecommunications laying, meeting project requirements.

	Education Branch, etc., setting up 53 majors focusing on agriculture, forestry and husbandry . There are 12,337 students of all levels and more than 800 teaching staff. Led by the college, 21 agricultural vocational colleges and institutes are dedicated to the construction of agricultural teaching resources base. It has 7 key disciplines of national level, 7 key or special disciplines of regional level, 3 state-level quality courses, 3 sharing courses of national high-quality resources, 13 regional-level quality courses; 3 national teaching teams, 6 autonomous teaching teams; 2 national prestigious teachers, and 6 regional prestigious teachers.	and autonomous prefectures in the city. It has a total population of 530,000, and 72% of it are Han.			

3 ECOP Management System

3.1 Setting of the Management System of ECOP

In accordance with the relevant regulations and the actual needs of the project and in order to better achieve the effectiveness of the demonstration of the project, the project, apart from the regulatory functions according to law performed by environmental protection department, intends to designate persons responsible for all levels of project management office for the environmental management, and to establish an environmental management system which is mainly charged by external supervision and internal oversight of the project management departments as a supplement.

3.2 Responsibilities of Various Management Agencies in Preparation Phase

In the environmental management system of this project, some are organizations within the projects, some are hired by the project to offer advisory services, and some are outside agencies of the projects. All these organizations constitute the complete project environmental management system, but each assume different job content with different areas of responsibility. Responsibilities of various agencies and personnel of the project configuration are shown in the Table 3-1 below. The relationship of environmental management system is shown in Figure 3-1

Table 3-1 Environment-related Responsibilities of Each Agency

name	Organization Type	responsibilities of the agency
①environmental management department of each project site	Supervision	To conduct environmental supervision and management to the whole process of the project according to the law, including: approval of each sub-project of environmental impact assessment reports, environmental supervision and management of the construction phase.
②Management Office of World Bank Loan Xinjiang Technical and Vocational Education	Administrative	1. Supervise the composing of ECOP;
		2. Supervise and coordinate the environmental management requirements between World Band and domestic departments;
		3.To submit a report to the World Bank every six months;

and Training Project		4 To check environmental management of each sub-project in every school; and be responsible for all environment-related knowledge and training of all project management contractor and sub-office staff;
		5. To coordinate with other departments to solve major environmental problems;
③Xinjiang College of Engineering, Xinjiang Agricultural Vocational and Technical College, Xinjiang Institute of Light Industry Technology, College of Xinjiang Uyghur Medicine, Project Directing Board of Urumqi Vocational University	Administrative	1.Commissioned to compose and monitor the implementation of ECOP
		2.Commissioned to compose domestic documents for approval;
		3. To make the project design meet the requirements of environment assessment
		4. To include environmental protection measures of project management plan in the construction contract;
		5 To hire, supervise and coordinate project supervision (qualifications, responsibilities, management);
		6 Make a record and sort the record of complaints received during the construction and operation of the project, offer the answers of how the complaints are resolved to the public, solve the problem about which the public complain;
		7 Review environmental supervision reports and environmental consulting reports;
		8 Submit a report/statement each quarter to the project office of the regional education department;
		9 Sign construction site checklist of construction units and supervision units, verify environmentally sensitive issues and archive.
		10 Prepare for environmental work inspection(including World Bank Project Inspection).
④Xinjiang College of Engineering, Xinjiang Agricultural Vocational and Technical College, Xinjiang Institute of Light Industry Technology, College of Xinjiang Uyghur Medicine, Project Management Office of Urumqi Vocational University (Office staff including school staff of the project, construction	Administrative organization	1 Responsible for environmental supervision, supervise and inspect the construction area sewage treatment, waste water treatment, soil erosion protection measures, emissions, dust, noise control measures, garbage disposal of construction area and staff, sanitation and epidemic prevention;
		2. To conduct a construction site inspection every two weeks according to the "environmental protection checklist", and check whether the checklist form is well filled in by the construction units per week and archive the checklist.
		3. To propose corrective solutions the environmental issues construction units encounter in construction activities, and to push the units to follow up the implementation, including issue rectification notice, rectification checklist, and check the file archiving;
		4. Ensure the involvement of all construction units listed and

supervisors)		submit project implementation report to all project management offices in the schools regularly.
⑤qualification units Classified A with a construction project environmental impact assessment certificate	Environment Impact Assessment agencies	1 Site visits to various projects, and evaluate their environmental impact;
		2 Responsible for the preparation of environmental impact assessment report
⑥environmental management advisory agency	Advisory agency	1 Responsible for the preparation of "implementation of environmental protection regulations," and provides environmental site management consulting services
		2 Responsible for training the construction unit and project office personnel
⑦construction units	Implementing Agency	1 Compose environmental protection measures to in all various construction periods;
		2 Prepare for supervision and inspection of all environmental protection departments at all levels;
		3 Establish a feedback mechanism: after receiving a rectification notice, to complete the rectification in three working days (10 working days to complete the rectification if administrative agency coordination required);
		4. Together with other project related offices to complete the composing of "Construction Site Environmental Management Plan" before construction begins, and report the plan to the sub-project management office;
		5 Enlist 1 or 2 environmental management coordinators who are responsible for the implementation of environmental protection measures throughout the construction period, and conduct on-site inspection according to the weekly "environmental protection checklist" and file the list.

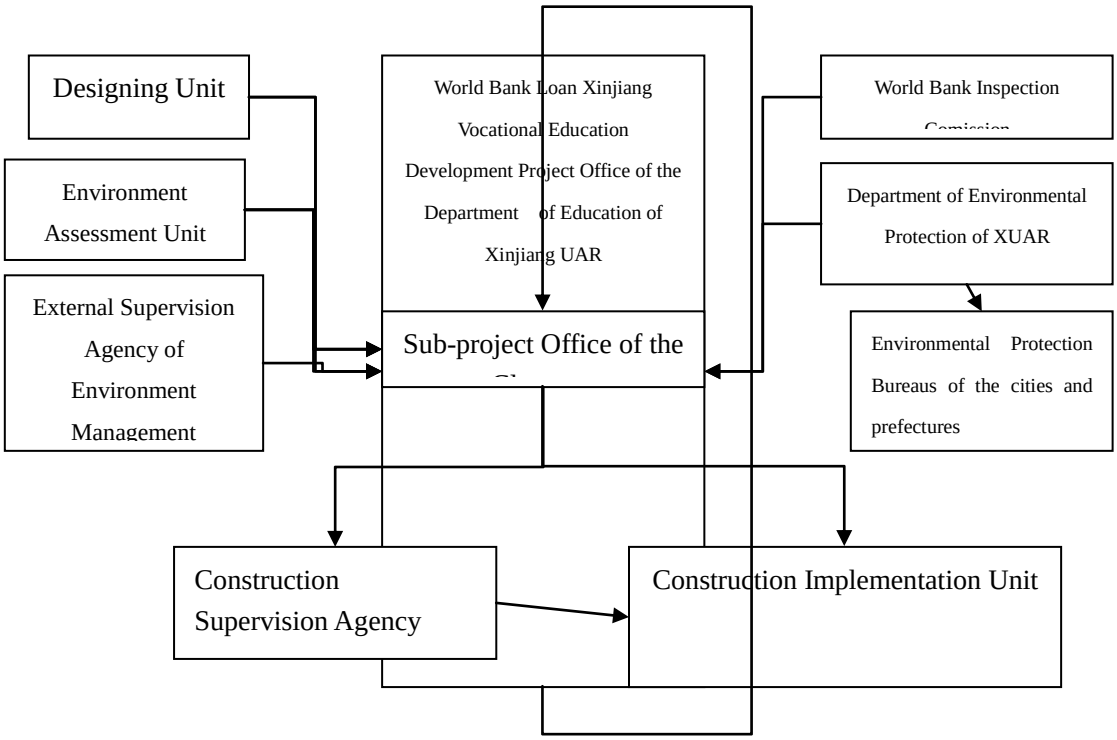
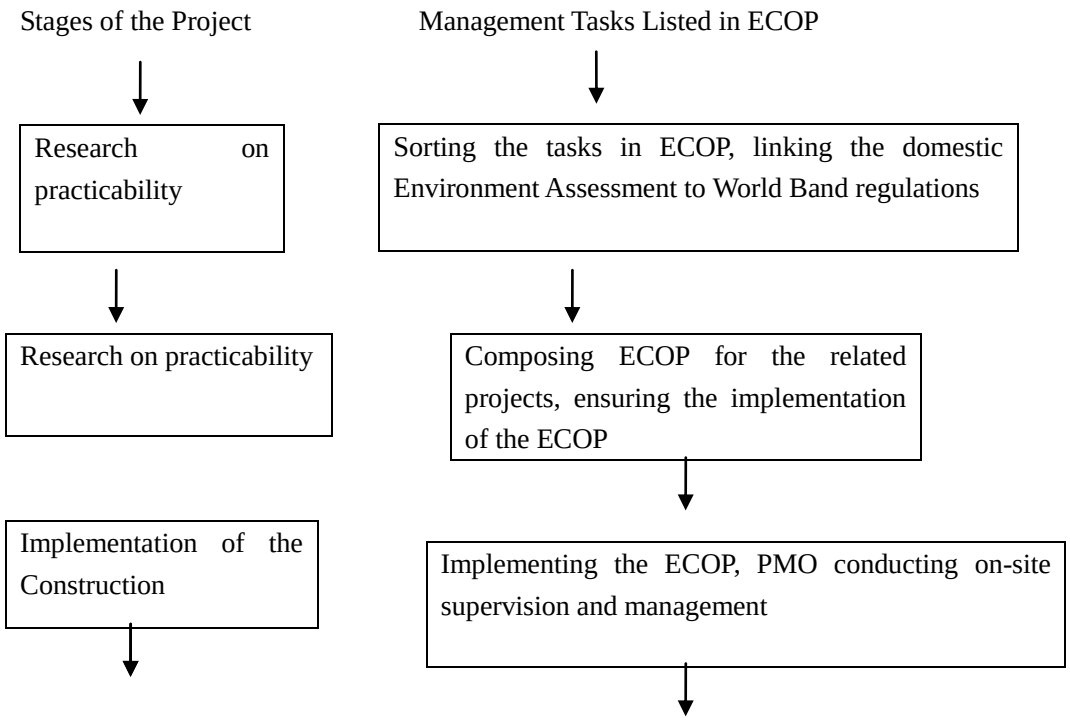


Figure 3-1 Organization Chart of EMS (Environment Management System)

3.3 EMT for Each Phase of the Project

At different stages of implementation of the project, ECOP covers different job contents, as can be seen in 3-2.



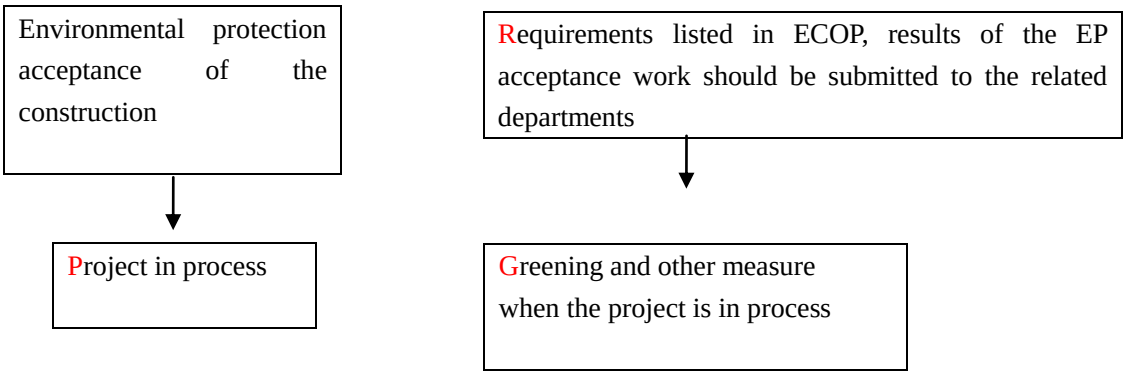


Figure 3-2 Work Content of ECOP at Different Phases

The most important task of ECOP is to ensure that all the environmental protection measures proposed can be effectively implemented, including:

(1) Environmental protection measures included in ECOP in project design and construction contracts;

(2) How the environmental protection measures are conducted by the PMO Construction Supervision;

(3) Inspection mechanism, report mechanism, and archiving mechanism of ECOP, time line of the project by checking the daily work.

3.4 Workflow of the Agencies Implementing ECOP in Construction Phase

Workflow of agency implementing ECOP during the construction can be seen in Figure 3-.

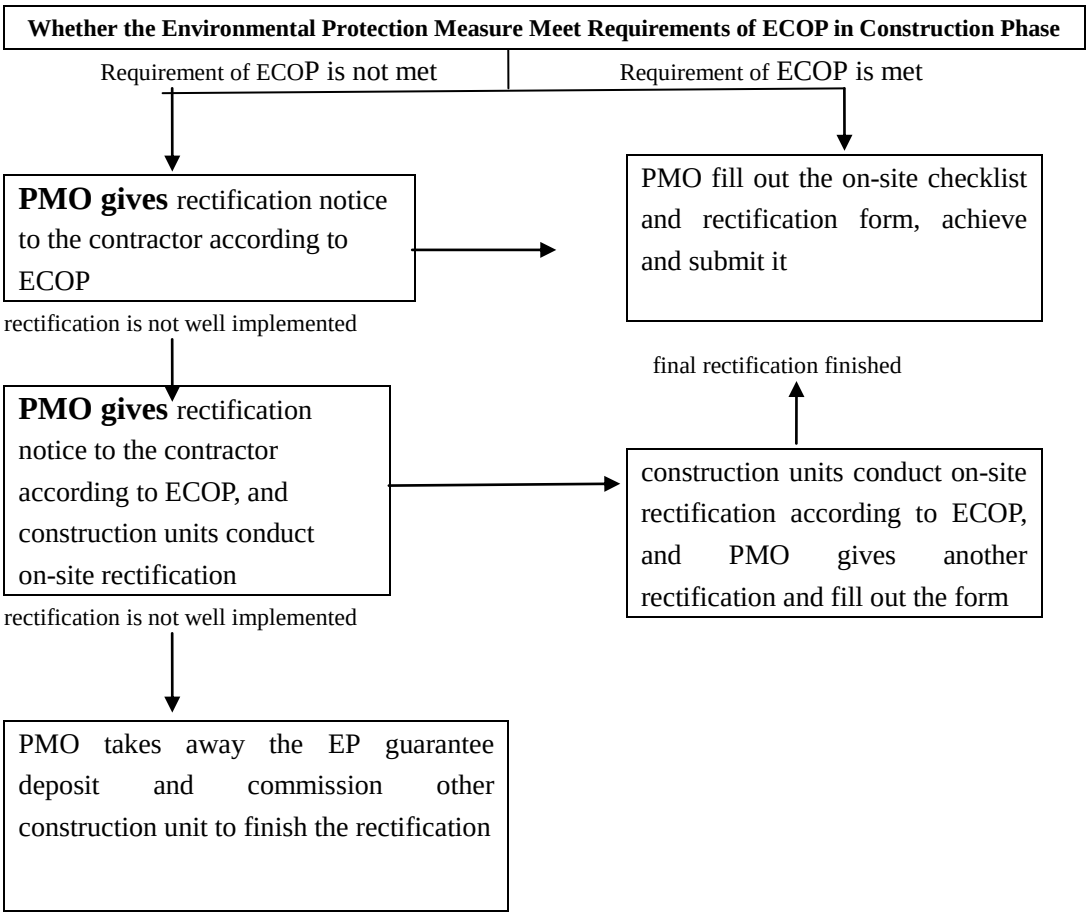


Figure 3 - 3 Workflow Project Environmental Protection Agencies Implementing ECOP

3.5 Preparation and Supervision of the Construction Environment

The ECOP (and environmental management plan may be prepared in future) should include the tendering documents and civil construction contract, and the candidate contractors are supposed to take full account of these measures in the tendering offer. Contractors should conduct site investigation when entering the construction site, verifying and recognizing whether the site is consistent with this ECOP. And if new sensitive issues about the construction site are found, the contractor shall propose appropriate environmental prevention and mitigation measures in response. And the construction can be conducted only after the approval of environmental supervision office and project management office.

During the construction, the environmental supervision task is to check whether environmental protection and prevention measures meet the requirements proposed in ECOP.

Environmental supervision should include a daily supervision on the construction site, filling out and archive environmental inspection checklist (Appendix 1) all through the construction. If construction

contractors are found to violate ECOP or measuring behavior of environmental management plan in construction activities, the environmental supervision agency should issue environmental protection rectification notice to the contractor (see Appendix 3), and supervise the contractors to take appropriate corrective measures. Environmental Supervision agency is also supposed to submit environmental supervision summary report every six months to the director of PMO.

Immediately before the end of construction, environmental supervision agency should carry out environmental acceptance check, filling out pre-acceptance check form and archive checklist before submission to the PMO.

3.6 Training and Capacity Building

For a smooth and effective implementation of the project, it is a must-do to train all the staff, especially the construction workers trainers in terms of environmental protection knowledge and skills. The main training content is included in the ECOP and environmental management plan (if any), as well as national and local laws and requirements concerning environmental protection, water conservation, antiques protection, health and hygiene, national customs and culture protection. In principle, before each new sub-project is started, PMO should organize construction units and supervision units to carry out training. During the implementation of every sub-project, the PMO can train the construction units and supervision units if it is needed. Construction units and supervision units should carry out regularly internal environmental training. Environmental training and education should include the following:

(1) At the beginning of the construction, the project organizers should organize training courses for civil contractors and construction supervising agencies

(2) Construction contractor is responsible for construction site workers' education, training and assessment. During construction, regular training should be carried out according to the actual needs (such as for new construction personnel).

(3) Civil Engineering Contractor should conduct an annual training to workers about the risk and contingency plans, and should also organize drills.

(4) The civil contractor should organize occupational health training and medical examination every six months for civil construction works in toxic and hazardous working environment and should guide the

construction operators to use occupational protective equipment and personal protective equipment correctly.

(5) Project Office should regularly organize or require the construction units and supervision units to invite local health and epidemic prevention section to educate the construction personnel about prevention and treatment of epidemic, sexually transmitted diseases and AIDS.

Training programs in details are shown in the table below:

Table 3.6-1 Environmental Technician Training Program

STAFF	Training content	Methods	(Person)	Time (days)
Contractors and construction site environmental staff	①Introduce environment-related factors and environmental protection measures ②Introduction about construction environment and issues of particularly sensitive region and about the area where the construction is ③Waste Management of construction camps and construction sites ④Pollution control measures of construction site ⑤Simple monitoring methods of construction noise and control measures (self-test) ⑥Provisions of related laws and regulations	Domestic Training	4 in Each construction phase	2
Environmental Supervising Engineer	①Study World Bank Environmental Policy ②the measures and requirements of environmental management plan ③ Environmental regulations, construction planning, and supervision rules concerning construction, ④Reinforcement of learning ECOP, offering specified environmental rules for the construction side; as the technical consultant prepare environmental protection items in detail, every item of environmental protection should include monitoring instructions. Study the environmental impacts and environmental projects required monitoring. ⑤Air monitoring and control technology, noise monitoring and control technology	Domestic Training	1-2 each construction stage	5
Environmental Management Staff of construction unit	All of the above included, operation and maintenance measures of the environmental management plan, as well as operating and maintenance of environmental protection facilities	Domestic Training	2-4	5

Senior staff in charge of Environmental management	Advanced foreign experience in environmental construction and noise control	Domestic Training	4	5

3.7 Document Management of ECOP

During the practice of ECOP, the Management Office of World Bank Loan Xinjiang Technical and Vocational Education and Training Project, all sub-project management offices in the schools, external environmental management and monitoring agency, the EIA units, project supervision unit and construction unit all must conduct appropriate document management and reporting as in detail in Table 3.7-1.

Table 3.7-1 Requirements on Document Management

Organization Name	Document Management
Management Office of World Bank Loan Xinjiang Technical and Vocational Education and Training Project	①preparation and monitoring of the implementation of ECOP, the domestic EIA documents, archiving; ②record the report of each school project office every six months, and submit semi-annual reports of environmental monitoring to the World Bank, archiving; ③Coordination with other departments to solve major environmental problems, recording the specific measures, archiving.
Sub-projects management offices in the schools	① preparation and implementation of sub-project environmental management regulations, archiving; ② preparation and implementation of environmental management training programs, archiving; ③ organize thematic studies or related investigations, manage seminars and investigation files, archiving; ④ make a record complaint in the process of construction and operation, sorting, archiving; ⑤Project Management division records a quarterly report, archiving, and submitting a report/statement to the Project Management Office of World Bank Loan Xinjiang Technical and Vocational Education and Training Project. ⑥ sign the site checklist from project construction unit and supervision unit, verify environmentally sensitive issues and archiving; ⑦manage and archive the submitted rectification notice
external Environmental management & monitoring agency	①submit an annual report about medium-term monitoring to World Bank and implementation of environmental management agencies every six months and archive. ②submit an annual monitoring report annually to the World Bank and the unit of property owners and archive. ③6 months after all environmental management completed, to submit a comprehensive environmental management assessment report and archive.
Sub-contractor	①weekly recording of construction, archiving, and reporting to the project supervisor; ②complete construction site checklist together with project supervision before construction, archiving, and report to schools sub-project office; ③record the specific implementation in the case of emergencies and unexpected situations, , archive, and report to the project supervisor; ④after receiving the rectification notice, it is supposed to complete the rectification in 3 working days (10 working days if administrative agency coordination is required), archiving.
Environmental Supervision	①construction unit should record weekly situation reports, archiving, and reporting to the office of each school sub-project;

	② in the pre-construction phase, it is supposed to work with construction units to complete construction site checklist, archiving, and reporting to sub-project office of every school; ③ emergencies and unexpected situations occur, record the construction unit's specific program, archiving, and reporting to the local project management unit; ④ when construction units encounter environmental issues in construction, it is supposed to propose rectification program and ensure the program is implemented, including issuing rectification notice, rectification checklist, and filing.
Environmental Impact Assessment organization with a class-A Certificate	①compose ECOP and domestic EIA documents; file archiving of the first draft, submitted version, and the approved version.

4 General Requirements for ECOP

During the construction of the project, the contractor will play a key role in environmental management, pollution control and measures of prevention and control. In order to implement the ECOP, this section offers a list of requirements to be applied in the construction process, which will hopefully promote internal and external supervision and management of the construction unit in terms of the implementation of environmental protection measures.

4.1 Environmental Measures to Implement the Construction Design and Preparation of Tender

During the implementation of the project, it will be in accordance with the World Bank's purchase guidelines, to carry out the purchase of all construction. Xinjiang College of Engineering, Xinjiang Agricultural Vocational and Technical College, Xinjiang Institute of Light Industry Technology, College of Xinjiang Uyghur Medicine, and Urumqi Vocational University should be under the coordination, guidance and supervision of the regional PMO, as it is required the environmental impact assessment concerning how to mitigate potential adverse environmental impacts caused by the project should be written clearly in the technical specifications and construction design by the organization who will compile the bidding document. The bidding

document should also respond to the following requirements of environmental management requirements and include civil engineering contract.

(1) The contractor is required to establish a system of supervision and responsibilities for the implementation of environmental protection measures during construction, with 1 to 2 environmental management coordinators responsible for the implementation of environmental protection measures throughout the construction period, to ensure that their construction activities and subcontractors (if there is) construction activities can meet this the requirements of ECOP and ensure that environmental protection measures are well implemented in the process of construction.

(2) During construction, the contractor should communicate and negotiate with the people who live in the project area, establishing a bulletin board in each construction unit to inform the public of specific construction activities and construction time. Meanwhile it is supposed to provide a contact person’s name and telephone number, so that the public have the access to providing recommendations or complain about the building activities.

(3) The construction unit and construction supervision should be give related training on environmental protection and environmental management before the construction is conducted. The training is commissioned to PMO staff dedicated to section of environmental protection, contractors and project supervision by the regional PMO to employ environmental experts to dedicated training.

(4) After signing the contract, the contractor must include "site environmental management plan" in construction program before the project is started.

(5) When construction activities occur on the campus the district which is among the running time, the Contractor should have a consultation with the school to make sure the staffs on campus are not disturbed.

(6) Once high risk of accident occurs due to non-compliance with environmental protection measures of ECOP, environmental coordinator contractor must notify the participating units within 24 hours. Schools and local government, or department in charge of environmental protection should immediately order the construction unit to take remedial measures, and the contractor must maintain a record of implementing these measures and report regularly to the school.

(7) The contractor must set aside guarantee deposit in accordance with the annual budget to

complete the environmental management and other aspects of work, and the percentage of the deposit should account for about 3% of the budget.

(8) The contractor should comply with local regulations on construction safety.

4.2 Preparation before the Construction

After the award of the contract, each sub-project management office should give the environmental impact assessment, including the EIA report, copy of approval document of the local environmental protection assessment and ECOP, to the contractor under coordination of the regional PMO, guidance and supervision, before the projected is started. The contractor is asked to conduct environmental research on the construction site, whose purpose is to verify and identify how each sub-project's environmental impact assessment describe the environment of construction site and what the environmental factor may limit the project area. According to requirements for environmental management in the contract, it is supposed to edit "on-site environmental management plan," which aims to guarantee the implementation of two "environmental inspection checklist" of the requirements of this ECOP and Appendix 2. In addition, it is needed to propose appropriate countermeasures for environmental protection in response to the environmentally sensitive issues founded in the new on-site research. Contractors need to receive the approval of the "on-site environmental management plan" from the project management office before conducting the project.

4.3 EM on the Construction Site

In the construction of civil works, the project management offices from Xinjiang College of Engineering, Xinjiang Agricultural Vocational and Technical College, Xinjiang Institute of Light Industry College of Xinjiang Uyghur Medicine, Urumqi Vocational University under the direction of "The World Band Loan Project Leading Group" to perform environmental supervision over contractors across the entire process of construction, in accordance with the contract requirements for environmental management, ECOP, and environmental inspection checklist which have been approved by experts of environmental supervision.

4.3.1 A Whole-process Environmental Supervision

Project Management Office should designate 1 or 2 full-time staff (project office staff or project supervision personnel under PMO) responsible for related environmental supervision, which includes:

(1) To be responsible for engineering activities and other related activities of construction supervision of the contractor such as land use and so on, to ensure that these activities comply with the requirements, investment, and objectives of environmental protection; to be responsible for on-site coordination between land management department and environmental monitoring and control sector.

(2) To supervise the contractor's environmental behavior of the daily and guidance and to meet the requirements of this regulation;

(3) To supervise and see to it that the construction contractor's behavior meets the requirements of this ECOP;

(4) Once environmental requirements are not met, adverse environmental impacts occur, or complaints about environment occur, these situations need to be investigated immediately, reported to local administrative department of environmental protection and to be found solutions. Meanwhile, the contractor will be given "rectification notice" (Appendix 3), and be supervised to take appropriate corrective measures.

(5) To prevent contractors from conducting activities against environmental protection;

(6) To provide a variety of relevant in-service training for contractors to avoid and mitigate the activities that may cause adverse environmental effects on local environment and surrounding community.

(7) To give a regular testing on the implementation of ECOP, filling out the "environmental inspection checklist" (see Appendix 1), including it into "On-site Environmental Supervision Report" and report it regularly to the PMO of Xinjiang Autonomous Region.

4.3.2 Environmental Regulators and the Public Sector

Throughout the construction phase, the construction unit will work closely with local government and other sectors to ensure that the public is fully consistent with the policies and

regulations, providing sufficient information to the public that may be influenced by the construction, especially paying attention to those activities that might harm public security, interest, or sensitive areas, temporary area for stocking construction materials. Local EPA, will conduct random checks to property owners and construction units. And if there are any unfavorable conditions against the environment, emergency measures should be arranged immediately.

Civil engineering construction site of the project are shown in Table 1.2-2, the contractor will ensure that the project is located in the area around the building and site to inform the public in advance by pasting information, including the estimated duration.The Contractor will provide an open and transparent public participation model to provide hotline, websites, forums and respondents to accept the views of the Office or advice and recommendations from the public, as well as a variety of calls related to the construction’s interference against environment, all calls will be recorded. Contractor will respond in the shortest possible time to the public complaints.

5 Environmental Protection Measures in the Construction and Management

As the main content of ECOP, this chapter presents environmental protection measures and environment management requirements that contractors should follow when they are conducting civil engineering according to "Sub-projects of World Bank Loan Xinjiang Technical and Vocational Education and Training Project", including construction site preparing, camp management of the construction site, health and safety measures, prevention and mitigation measures for air, water and solid waste pollution, soil erosion prevention and mitigation measures, prevention and mitigation measures against disturbance, activity or conduct that should be prohibited for environmental protection; countermeasures for antique conservation; and accepting external and public complaints and corrective action.

5.1 Construction Site Management

5.1.1 Construction Site EM

Construction site environmental management is mainly aimed at construction time, construction site layout, construction materials and construction equipment stacking warehouse management, construction vehicles. And construction units must comply with regulations of local environmental protection department, preparing for regular environmental supervision and checks. Measures to reduce the adverse environmental impacts of construction activities are as follows:

(1) Construction Time

Construction time is 8 am: 00 pm ~ 24: 00. In consideration of its site on campus, any sub-project should not be conducted at noon 14:00 - 16:00 as lunch time, and construction vehicle driven in or out of the campus must comply with local requirements. Construction at night is restricting, and it is unavoidable, the construction must be informed on campus and to the surrounding residents with relevant construction approval documents. It is also suggested to take measures to minimize the construction impact on students and residents. Construction units should provide information such as the construction schedule on public information platform;

(2) Construction Camp Layout

In the construction area reasonable layout includes construction camps and accommodation, construction offices, warehouses for stacking construction equipments, and material processing rooms. Construction site camp in Xinjiang Light Industry Vocational Technical College should be kept away from student dormitory and classroom building to prevent the noise of construction workers from interfering students.

(3) Borrow Pits and Waste Disposal Area

To use existing borrow pit sites and waste disposal area approved by local sanitation department, without employing new pits or area.

(4) Accident Risk Prevention

Construction accident prevention unit should make prevention plan and designate appropriate person in charge of dealing emergency and asking for help from related departments in case that accidents occur.

(5) Soil and Water Conservation and Ecological Protection Measures

①A strict control of occupying land for construction

② To give a rational plan on the land that is permanently occupied by the project, and have a strict control over the amount of the construction area.

③To make use of existing road for construction work, along with the existing track. If there is no highway, new highway must be paved before the construction begins. It is supposed to prevent the vehicle from rolling sidewalk.

④On-site construction machines should be strictly managed and area for using machines should be defined and the vegetation in the area should not destroyed.

⑤After construction, temporary land should be restored to its original state land forms. To minimize the impact on soil nutrients for a fast recovery of the land and avoiding soil erosion.

⑥The amount of land digging and dumping should be balanced. If the land is dug or dumped, the ground should be rolled and covered with lawn.

(6) Dust Pollution Control on Construction Site

① All construction units construction have to designate a person responsible for implementing and monitoring dust pollution prevention measures. All building construction site entrances and exits must be put up with environmental supervision board with the name of the

project, the construction unit, contractor's unit, dust control supervisor's name and telephone number for contact, duration of the project, environmental protection measures, and hotlines.

②All the construction site should be circled by walls. Around the construction site 1.8 meters high hard wall must be set up or enclosed. No open area is permitted for construction if there is no wall or other enclosure. And anti-spill base should be set up without any distance between the base and enclosure. Dust and fallout on the enclosure should be cleaned regularly to ensure that the construction site and surroundings are clean and tidy;

③ All stock of building material must be covered. If it is easy to produce dust or contaminated in the construction area, all material within the construction site must be stored in closure or covered; the main construction body of the project must be closed with dense mesh safety net;

④All vehicles in or out of the site must be washed. Entrances and exits of construction site must be hardened equipped with vehicle washing station and ancillary drainage, mud sedimentation facilities. All washing facilities must be well equipped; wheels and body of vehicles must be washed and cleaned before they are driven on the road;

⑤All the ground on construction site must be hardened. What's more, the main road on the construction site should be laid concrete or asphalt pavement, other ground within the site should be covered with lawn or hardened. During the earth excavation, all roads should be simply hardened and sprinkled with water against dust;

⑥All wet demolition on the construction site are required. All the demolition of houses should go with watering and debris removal. If the dump or debris cannot be removed on the day, timely dust-proof measures must be taken, such as covering the debris;

⑦During construction, dust, muck or other construction wastes transported from the top of the building to the ground or downstairs, all should be sealed;

⑧Any project within the set-up buildings of the city are not permitted to be conducted with the on-site concrete mixing;

⑨30 days after the completion of the project, the construction unit must level the site area and clear up all piles of soil or waste;

⑩ If five or higher degree of windy weather occurs, it is prohibited to conduct the construction of earth moving and demolition work which is easy to produce construction dust

pollution.

(7) The Safety and Health of the People

The entire construction site is enclosed and kept isolated. The traffic signs, guardrails, etc., are installed to ensure safety of pedestrian, construction workers and teachers and students; security personnel should be arranged for smooth traffic on campus before or after the classes in study period; construction workers must be given safety training before the project and provided with personal protective equipment. It is also supposed to ensure construction demolition and disposal of toxic substances must be implemented by specially trained workers; all work should be stopped at the emergency of rainstorm. Construction workers should pay attention to occupational health protection, including:

①Construction workers on site must wear long-barreled boots, gloves, dust masks, and other construction site must be sprinkled to reduce dust. All workers must be given regularly health checks and offered timely treatment.

②Project Department provides welders with welding mask, gloves, overalls, glasses, etc., to reduce the harmful effects of their work.

③To provide tea, green bean soup, and essential balm to workers for preventing heat stroke.

④Construction workers must wear safety helmets, construction gloves, dust masks and other protective equipments. Full-time security officer must command on the construction site to eliminate potential accidents for protecting the safety of construction workers.

⑤Construction team personnel of lower status must be supplied with cold boiled water 24 hours, bean soup, construction gloves and other protection products, to ensure the health of construction workers.

⑥Materials management staff must be given induction training, and awarded certificates, and offered protective equipments and fire facilities, to ensure that there is no harm to health caused by accidents.

5.1.2 HSE Management

(1) Aerial Requirements

①Workers' clothing should be flexible, hard-sole shoes and nailed or slippery shoes should be forbidden to wear. Safety helmet and safety rope must be used by anyone who goes into construction site. When these safety equipments have been approved unnecessary, or the high-above-the-ground circumstances are inappropriate to wear a seat belt, it is permitted to work

without using them as a special case. But it must be verified by quality, safety and environmental protection departments, and, it must be closely scrutinized with taking effective preventive measures to ensure the safety of workers.

②Safety belt must be tied and hung securely on the hard device over the construction site, and it should not be tied or hung near sharp edges. The safety belt should be hung over vacant ground. The hanging point should be high enough but used at lower place. Lower-than-the-waist hanging is prohibited. And it is prohibited to tie the safety rope around waist simply.

③It is prohibited to conduct the project if it is of six degree of strong wind or above (wind speed 10.8m/s), or it is in lightning, heavy rain, fog and other weather conditions and high temperatures above 40℃, or cold environment -20℃ below. Aerial work in the temperature of 30-40℃ should be conducted according to "heavy labored job" provision in "Time Limits for Continuous Contact with the Thermal in Hot Environment " (GB935 - 89) standard to arrange work shift.

④Construction materials must be stacked and fixed. Tools must be equipped with safety rope so that they would not be fallen and tools should be readily placed in tool bags. When the tools materials and other debris are passed down, it is prohibited to throw of cast them. Below the operating point, security zone and warning signs should be set up and taken care.

⑤Scaffolding erection should avoid power lines, and if it can not, it should be guaranteed the circuit is not charged when work high above the ground is operated, or the operator on the scaffolding with the tools, materials to work with minimum distance longer than the safety distance (voltage ≤110kV, 2m; 220kV, 4m). When high-above-the-ground operations is on, electricity wires must be insulated well, no joints, especially when metal scaffolding is used, attention should be paid to prevent electrical shock.

(2) Electrical Safety Requirements

①Temporary power supply on construction site should be three-phase five-wire system. And the metal casing of electrical equipment must be connected with the special protection of the mull line; 5-core cable should be used underground or with aerial installation. Interior wiring must be insulated wire using porcelain, ceramics clip no less than 2.4m high from the ground indoor or 3m high from the ground outdoor.

② Power distribution system should be set with a general distribution box and sub-distribution boxes, switch boxes, for the implementation of sub-class distribution of electricity,

and each device has its own dedicated power distribution box, with a strict implementation of "one machine-one power distribution box-one switch board" system; switch box must be installed leakage protection. And leakage protection in switch box should not work with a rated current over 30mA, and rated operating time should be less than 0.1s; all the distribution boxes, switch boxes should be checked and repaired monthly by qualified electricians wearing insulated shoes, gloves, using insulated tools

③Operations in the wet, potholes should be conducted with class Ⅲ hand-held power tools and keep switch box of the leakage protection outside and striking, and a supervisor should be on the site; if the construction is stopped more than one hour, power switch box should be powered off and locked; all electrical equipments on the construction site should be inspected, repaired and registered on schedule.

④Interior lighting wiring must be insulated conductors no less than 2.4m high above the ground. If it is used for low voltage lighting in the warehouse, flammable items must be kept away from the distribution line; welding site should be kept without stacking flammable items.

⑤ On the construction site, switch boxes and power distribution box should be kept without any debris in them; on the construction site, overhead lightning should be equipped with thunder-proof devices and grounding device, and with a dedicated fire extinguisher putting out fire promptly.

5.2 Environmental Quality Management during Construction

To reduce the environmental impact of construction generated, the following countermeasures are taken considering the construction of sewage, gas, noise, solid waste, ecology and environment.

5.2.1 Sewage Control during the Construction

Water pollutants during construction are mainly from the construction site waste water, sewage and storm runoff formation. This report presents the following countermeasures:

(1) Countermeasures for Construction Waste Water

Seepage pits, seepage wells or overflow mode of emissions for waste water of construction

are forbidden. On the construction site construction sewage sludge and oil-containing pollutants must be treated after grease traps, sedimentation tanks to reach the standard for spilling on field dust. Indiscriminate discharge should be forbidden. Sedimentation tank size should not be less than 3m × 2m × 2m, which should be cleaned by specified staff.

Lime masonry enclosed pool required height to ensure no spills of lime; set or designate a person with a rain canopy canvas cover to prevent rainwater from the pool of lime, lime spilling when it rains. During off work time, block canopy should be used to prevent rainfall from the lime pool in case of raining.

Place for car-washing should be set in construction venues to ensure that the water could be reused after settling and grease trap.

It is forbidden to dump the various organic solvents, chemical waste and oil into the sewer and soil. The project site should have places for oils, chemicals deposit with rain-proof and leak-proof measures and designated staff in order to prevent oil and chemicals from polluting the environment.

(2) Countermeasures for Construction Workers' Sewage

Construction sewage is mainly from the canteen, bathroom, toilet and other living facilities. The project construction is about 12 months, a total of 360d. According to the amount of the construction of the project, it is estimated that various types of construction workers, managing staff at the site every day are about 500 people. Construction workers live in dormitories. According to construction site domestic water quotas and analogy investigation of water consumption in similar project construction personnel, which is 50L / person * d, construction workers living water consumption reaches 25m ^{3} / d, total water consumption throughout the construction period of about 9000m ^{3,} . Emission is usually 80% of water consumption, so the construction sewage emissions totaling 20m ^{3} / d, ie 7200m 3.

Major pollutants of construction workers' sewage include BOD $_{5,}$ CODcr, ammonia and so on. Phosphorus or phosphorus detergents should be bought to control the concentration of phosphorus in waste water. After centralized sewage treatment, including fecal sewage through septic tanks, kitchen grease effluent and precipitation to meet the relevant standards required by the EIA report, could be sewage be released into the municipal sewage network or to be used by sprinkler at the site or watering the greens. After the project is completed, the residue of septic tanks should be cleaned according to local regulatory requirements for processing.

5.2.2 Air Protection Measures during the Construction

During the entire construction, the dust generated by construction focused on civil construction phase. By cause dusting can be divided into wind dusting and mechanical dusting. The wind dusting is mainly due to open dumps of building materials (such as sand, cement, etc.) and the exposed surface area of construction dust is due to dry weather and high winds; while the mechanical dusting is mainly generated during the handling of building materials, the mixing process, since the dust generated by an external force caused by resuspension in which construction vehicle and loading trucks are counted mostly for dusting.

(1) Temporary road within the construction site or nearby should be regularly watering. loading and unloading of transport vehicles should abide by regulations. Overloading is forbidden. At the construction site, the speed control should be 20km / h or less. The vehicle body and tore should be sprayed before leaving the site.

(2) In order to reduce construction dusting, the construction site, entrance and exit roads, and construction vehicles must maintain clean. Effective measures such as timely cleaning, prohibition of overloading and spilling to keep the roads clean, reduce construction dusting .

Loading of cement and sand etc should be avoided in windy weather. Materials such as cement should not be dumped in open field. Even it has to be done, waterproof cloth should be used to cover it from construction dusting caused by gale.

(3) During the project, the construction site will use boundary 1.8 ~ 2.5m high enclosure to reduce dust diffusion, and it is prohibited to stack construction materials, construction debris and muck outside the boundary. The bottom of boundary should have spill free seat, and no gap between the boundaries as well as the seat and the boundary.

(4) Earthworks includes excavation, transportation, filling soil and construction processes, Sometimes it needs drainage, welling, soil wall support and other preparatory work. In case of dry, dusting earthworks, dust should be controlled by sprinkler to minimize dusting operation time. In case of level four or more than four windy weather, earthwork must stop, meanwhile operation site should be covered with dust-proof net, besides the mud carried by rain or transportation to the construction field and road should be cleaned timely to prevent the truck from bringing dusting. In case of windy weather, the building materials which cause dusting easily and the remaining mud

should be covered intact to prevent blowing wind and pollution of the environment.

(5) Measures for Construction Material Anti-dust Management: following measures should be taken when materials causes dusting are used during construction, such as cement, lime, sand, paint, paving materials.

a) to store in a closed space;

b) to set enclosure or walls;

c) to use dust-proof cloth thatch;

(6) Anti-dust management measures of construction waste: waste earth, waste materials and other debris the construction produced should be removed in time. If it has to be stacked on site more than a week, the following measures should be taken to prevent wind erosion dusting and water erosion migration:

a) to cover with the dust cloth, dust-proof net;

b) to spray dust suppressants regularly;

c) to spray water;

(7) Vehicle washing platform should be provided, drainage should be improved to prevent soil adhesive to tires. During construction, washing platform should be provided inside the exit for vehicles carrying construction material, debris and garbage. Before leaving the construction site, the tires and body of the vehicle should be washed to prevent carrying mud onto roads. Washing platform should have spill free seat, waste diversion drainage, waste water collection tank, sedimentation tanks and other facilities to collect waste water and mud from vehicle washing, construction and welling.

(8) Dust-proof measures, transportation route and time for vehicles carrying construction material, debris and garbage: vehicles transporting construction material, debris and garbage should be van truck to prevent spilling. In the case without van truck, construction materials, garbage, debris loading height must not exceed the vehicle along the ledge, besides the bucket tarpaulin must be covered tightly. Tarpaulins cover at least the edges along the ledge below 15 cm, to ensure that the construction material, debris and garbage are not exposed. The vehicles should transport on approved route and time for construction material, debris and garbage.

(9) Measures for cleaning the dust on the roads of the construction site: roads at construction site are to be cleaned every day. No cleaning without sprinkler and other dust

suppression measures

(10) Dust-proof measures for open ground at construction site: During construction, open ground at the construction site, in the sunny weather, should be watered twice to seven times weekly depending on the circumstances. The frequency of watering could be raised when dusting is serious.

(11) During construction, dust cloth or dust filter with dense mesh (not less than 2000 mesh / 100 cm) should be used outside the scaffold outside the construction structure

(12) Dust-proof measures for concrete: If concrete needs to be used during construction, ready-stirred concrete could be used or stirring in enclosed room with dust removal device. It is forbidden to stir concrete, lime or mix lime with soil in open air and so on. Finished or semi-finished products of stone or wood would be used to conduct prefabricated construction, reducing dust pollution caused by stone, wood cutting

(13) Dust-proof measures for vertical transportation of construction material, debris and garbage: During construction, fugitive construction materials, debris and garbage should be transported to ground or underground from Elevator channel, building internal pipeline or pipeline custody transfer. Or it is suggested to be moved with package boxes. Throwing is forbidden.

(14) A full-time staff should be responsible for implementing and monitoring dust-proof measures at the construction site. Position responsible for managing the construction waste, storage, removal and disposal of construction materials should be set at construction site. Disposal site should be away from the surrounding neighborhoods, and avoid residential areas wind, stamped tarpaulin or watering when necessary, to prevent secondary dust pollution. The position is also responsible for fugitive materials, garbage, debris, open ground and operations of covering, sprinkler, vehicle washing etc. besides the record of dust control measures.

5.2.3 Sound Environmental Protection Measures during the Construction

The noise during construction period can be divided into mechanical noise, construction noise and construction vehicles noise. Mechanical noise is mainly caused by the construction machinery, such as digging machinery, piling machinery, concrete mixers, lifts, major construction

machinery noise source strength can be seen in Table 5.2-1.

Table 5.2-1 Noise level of Major Construction Machinery and Equipment

Serial No.	Construction machinery	Measuring the noise level [dB (A)]	Measuring the distance (m)
1	Road digging machine	79	15
2	Roller	73	10
3	Scraper	75	15
4	Dump Truck	70	15
5	Impact hammers	110	22
6	Drilled pile machine	81	15
7	HIP hammers	80.	15
8	Concrete mixer	79	15
9	Concrete vibrators	80.	1
10	Lift	72	15

Contractors shall comply with local noise regulations, from the following aspects; appropriate measures are to be implemented to mitigate the effects of noise.

(1) Rational Distribution at Construction Site

During construction, contractors should avoid arranging a lot of power machinery equipment in the same place, in order to reduce the risk of localized accumulation of excessive sound levels; high noise mechanical operation should be placed relatively in the middle position of each block; the distance to field edge should be larger than calculated attenuation buffer distance.

(2) Reasonable Arrangements for Construction Time

Although the project construction period is long, but with different construction periods by each contractor, so it can be avoided that a lot of high noise construction equipment operating at the same time, which will cause construction noise concentration phenomenon. During the construction, if the construction noise has a certain impact on the surrounding residential buildings, dormitories near the construction site, contractors must arrange the reasonable construction time, develop construction plans. Construction from 00:00 - 8:00 is prohibited. In the case of technical requirement, contractors should collect and follow the views of people around. Construction during teaching must be more careful to decrease the impact of construction noise on sensitive points to the minimum. Construction disturbance phenomenon is to be informed timely, and

subject to public scrutiny.

(3) Reducing the Sound Level of the Equipment

On the choice of equipment, with the premise that the quality of construction can't be influenced, low-noise, low-vibration equipment and construction methods should be prioritized for the construction of the foundation and structure; construction equipment should receive regular maintenance to avoid noise enhancement due to performance loss.

(4) The Use of Noise Reduction Practices during Construction

Power machinery equipment should receive regular maintenance, conservation to avoid vibration caused by loose parts or increased SPL due to muffler damage; the equipments should be turned off immediately after use or not in use.

(5) To Minimize Artificial Noise

Steel template practices are not suggested for it noise; banging concrete pipe should be avoided in operation, throwing should be prohibited in moving and unloading the items as well as construction tools, vehicles entering the site should slow down the speed and reduce the whistle and so on.

(6) Measures to Reduce Local Noise

If the project is surrounded by residential buildings, dormitories and other sensitive sites, local noise reduction measures should be adopted by contractors. Large mechanical device with relatively large noise should be placed away from environmentally sensitive sites besides isolation and protective silence treatment. In piling, earthwork which produces high noise, mobile noise barriers should be set up (4, 2m × 2m) at the construction side, the sound barrier may be provided on the construction site boundary toward the environmentally sensitive sites. If power machinery or equipment with relatively high noise are comparatively stable, noise barriers could be set up in the vicinity of machinery and equipment, for example, temporary installation acoustic enclosures or noise barriers could be set for chainsaws, compressors with high noise, sound insulation is up to 20dB (A) above. Or temporary mobile sound barriers should be set around the construction machinery and equipment in order to ensure the construction site boundary and sensitive sites noise is in compliance with standards.

(7) Construction Vehicle Management

The management of construction vehicles should be strengthened. Lower sound level horn should be used by vehicles of transportation and whistling is forbidden at environmentally sensitive sites. Also, traffic control should be strengthened in the project area, especially when the

project is surrounded by residential areas, operation should be avoided during the rest time of the surrounding residents.

5.2.4 Solid Waste Control during the Construction

Solid wastes during the construction are mainly what construction workers produce and garbage produced during decoration and other construction.

(1) Household Garbage during the Construction

During the construction of the project, household garbage is 1.0kg / person ·d, so the amount of garbage produced is 500kg / d and about 182.5t / per year. After municipal sanitation department collected the garbage from all construction units and treated at municipal solid waste disposal field, no significant impact can be produced to the surrounding environment.

(2) Construction and decoration wastes during the construction

Earthworks generated by the excavation of land, building waste generated by losses, and other construction waste generated by decoration during the construction of the project, such as masonry, cement, bricks, sand, stone, cement, crushed wood, sawdust, scrap metal, steel, wire and other debris are referred as construction and decoration wastes.

The project produced 5426.2t of decoration garbage approximately in house decoration stage.

Construction unit should take appropriate measures to mitigate the impact of the solid waste from the following aspects:

(1) The construction should have strict waste management and full utilization: loose mortar, concrete could be recycled as much as possible, the solidification of mortar, concrete can also be used as recycled aggregate, currently recycled aggregate concrete could generally be used as the basis for low strength concrete pavement and non-load-bearing structures, and the mix and blend of recycled aggregate amount can also be applied to achieve load-bearing structural concrete requirements by strict control and selection. The waste concrete blocks can be directly used as gravel foundation reinforcement, road cushion, cushion and other indoor floor after being crushed; broken bricks can be used as coarse aggregate concrete mixing as well as materials for ground handling, floor cushion.

(2) Hazardous wastes or waste with strict control of substances should be stored and managed in accordance with the requirements of 5.2.5, entrust qualified waste processors to treat with recycling or safe disposal. Contractors should sign processing contracts with processors, and file the qualification certificate provided by the processors. Each sub-project leadership team should supervise whether the contractor has signed a hazardous waste treatment contract and file the attachment of the contract.

(3) Earth should have a reasonable allocation for digging, moving or filling. Abandoned earth after the excavation shouldn't be heaped. Centralized interim storage yard should be set to be treated.

(4) Construction waste, sediment and debris etc., should dumped into designated places in accordance with the relevant regulations of relevant provisions of the area

(5) At the construction site, the construction unit should provide bin for household trash, collected and disposed together. Sanitation department should regularly collect the garbage at the construction site for disposal in accordance with the contract signed by both parties; garbage will eventually be treated with hazard-free disposal.

5.2.5 Hazardous Chemicals Environmental Risk Control Code of Conduct

Hazardous chemicals used in the construction process includes: paint, thinner, oxygen, acetylene, liquefied petroleum gas, etc.

(A) Each of the following items must be marked in conspicuous places:

(1) classification and labeling information;

(2) physical and chemical properties;

(3) the main purpose;

(4) hazardous characteristics;

(5) safety requirements for storage, use and transportation;

(6) emergency measures in dangerous situations.

(B) The hazardous chemicals should be identified, stored and classified on their performance to make sure different categories are stored separately. There should be a safe distance to ensure smooth traffic.

(C) The construction units in use of hazardous chemicals shall comply with the laws and administrative regulations and national standards, industry standards in its condition (including process). Safety management regulations and safety procedures of hazardous chemicals should be established and completed to ensure the safe use of hazardous chemicals based on the types, hazardous properties and usage.

(D) Warning signs shall be set at obvious place at the construction site, facilities and equipments.

(E) Dangerous chemicals should be stored in special warehouses, designated space or storage rooms (hereinafter referred to as designated warehouse) by the staff responsible for the management. A variety of safety management regulations should be developed: a) fire safety responsibility regulation; b) storage acceptance, delivery inspection regulation; c) goods custody, requisitioning regulation; d) inspection system; e) registration regulation for in-and-out of storage. Safety facilities, equipment should be regularly tested in the warehouse of hazardous chemicals.

(F) In the case of hazardous chemical spilling, firing, etc., it requires timely reports to the security departments; it is necessary to adapt the appropriate measures and fire fighting equipments in rescue, wearing appropriate PPE. The leaks or residue after the accident will not be allowed to be disposed of (such as flow in rain sewer) to cause environmental pollution.

5.2.6 Countermeasures for the Ecological Impact during the Construction

Construction of the project may impact on the ecological environment mainly on the following aspects: damage on the artificial vegetation and surface disturbance caused by the changing nature of land use, dusting because foundation excavation work at the site will change the original surface morphology. Because the soil surface is damaged, construction area is muddy in the rain, dusty in the wind, which will impact the construction on the project area and the surrounding area, hence causes environmental pollution.

To protect the environment, improve self-regulating capacity of the environment of the system itself, construction units must implement the target responsibility regulations for ecological protection. During the construction, the process of excavation of earth shall comply with the

provisions of building codes and relevant soil and water conservation, minimizing the damage of vegetation, reducing dust and soil erosion (erosion), and protecting the regional ecological and atmospheric environment.

(1) Protection And Recovery Measures for the Present Land Use Pattern

①To strictly control of field being occupied by construction

②To strictly control the area of the project, to rationally plan the permanent area.

③All construction should take use of present roads, following the present track, if no way existed, the road would be constructed first, the construction along the road could be carried out spot by spot. It is forbidden for vehicles to drive ways and to start detour without permission.

④To strictly managed the machinery at the construction site, to limit activities area to prevent the vegetation being destroyed.

(2) To Restore the Original Pattern of Land Use

①After the construction, temporary land should be restored to its original forms to minimize the impact on soil nutrients, to recover soil faster and to reduce soil erosion.

②The earth generated from digging and used for filling during construction should be balanced in amount, in case of dumping or borrowing, the area need to be leveled and greened

5.2.7 Cultural Heritage Protection during the Construction

According to relevant survey, the project construction area contains no heritage, but if during excavation or construction, relics are discovered or suspected; relics emergency treatment should be immediately implemented in accordance with the flow chart of the operation. Relics emergency treatment flow chart is in Appendix 4.

5.3 Environmental Quality Management during Operations

5.3.1 Xinjiang College of Engineering Environmental Protection Measures

5.3.1.1 Water Pollution Control Measures

Sewage generated during the project operation is to be discharged into the municipal sewer network. Reuse and harmless emissions by the sewage treatment plant after it achieves "urban sewage treatment plant emission standards" level one B standard. The project sewage is to meet the water requirements of the treatment plant before being directly discharged into the municipal sewer network.

5.3.1.2 Solid Waste Pollution Control Measures

(1) Garbage are to be classified and bagged before being collected, are to be put to the trash bin of each building, then be removed by sanitation department daily. Transfer station should be built downwind with more than 10m the distance between adjacent buildings.

5.3.2 Urumqi Vocational University Environmental Protection Measures

5.3.2.1 Water Pollution Control Measures

Sewage generated during the project operation is to be discharged into the municipal sewer network. Reuse and harmless emissions by the sewage treatment plant after it achieves "urban sewage treatment plant emission standards" level one B standard. The project sewage is to meet the water requirements of the treatment plant before being directly discharged into the municipal sewer network.

5.3.2.2 Solid Waste Pollution Control measures

(1) Garbage are to be classified and bagged before being collected, are to be put to the trash bin of each building, then be removed by sanitation department daily. Transfer station should be built downwind with more than 10m the distance between adjacent buildings.

5.3.3 Xinjiang Institute of Light Industry Technology Environmental Protection Measures

5.3.3.1 Water Pollutant Control Measures

Sewage generated during the project operation is to be discharged into the municipal sewer network after the grease trap. Reuse and harmless emissions by the sewage treatment plant after it

achieves "urban sewage treatment plant emission standards" level one B standard. The project sewage after the grease trap is to meet the water requirements of the treatment plant before being directly discharged into the municipal sewer network. To ensure that the sewage discharge standards, the following should be done:

①The design and construction of grease traps should be entrusted to units with relevant qualifications. The grease trap should be equipped with processing capacity for the maximum amount of water, besides reserve at least 1.2 times the processing power to meet the demands of water fluctuation.

②After completion of the project, sewers, grease traps and other water treatment facilities completed at the same period required for leakage-proof treatment.

③ To strengthen environmental management and to strictly implement the relevant provisions. The project sewage treatment systems and other environmental protection facilities should receive regular inspection and maintenance to keep it in good working condition and treatment efficiency.

④To ensure contaminants achieve the designed treatment effect, the management of the purification devices should be strengthened to work in normal condition. It is required to apply with the environmental protection departments for monitoring and inspection until the device is stable.

⑤The project sewage treated after the grease trap must be discharged into the municipal sewer network.

⑥Rain and sewage diversion system should be implemented to separate rainwater and sewage to be discharged respectively.

5.3.3.2 Solid Waste Pollution Control Measures

(1) Garbage are to be classified and bagged before being collected, are to be put to the trash bin of each building, then be removed by sanitation department daily.

(2) Transfer station should be built downwind with more than 10m the distance between adjacent buildings.

(3) Publicity and education should be strengthened to stop littering, to encourage garbage classification, reduction and recycling, etc.

(4) The garbage classification and collection system should be established.

The waste and paper account for a large component of the total waste in the recyclable garbage in the project garbage. If recycling could be achieved in the garbage collection, not only could the garbage transport costs could be saved, but also the load of municipal landfill disposal could be reduced.

5.3.3.3 Air Pollution Control Measures

Natural gas used as fuel in the catering of the project is a clean energy. It is prohibited to use coal, oil and other energy sources. So air pollution is mainly the kitchen cooking exhaust emissions. The project catering fumes are emitted through a high-altitude flue after being purified by a facility whose soot removal efficiency reaches 85% of large equipments. Fume emissions can achieve, "cooking fume emission standards (Trial)" (GB18483-2001) with soot emission concentration $\leq 2.0 mg / m^3$.

5.3.3.4 Noise Pollution Control Measures

①Various machinery and equipments are to choose advanced and efficient low-noise model.

②Pressure pumps, fire pumps, fans and other parts of pumping are to be equipped in the basement rooms, sound-proof door are to be installed for facilities rooms, basis damping should be constructed for pumps and fans, silencer should be installed at the inlet and outlet of the fan, micro muffler and so on could be used at the outlet of the exhaust pipe.

③Fan of the air conditioning and ventilation system, extraction fan should be located in specialized equipment room or noise-proof room.

④ Pump base should be equipped with isolation treatment facilities, the pump inlet and outlet should be equipped with soft rubber joints, slow closing check valve to mitigate the effects of noise.

5.3.4 Environmental Protection Measures in College of Xinjiang Uyghur Medicine

5.3.4.1 Water Pollution Control Measures

Sewage generated during the project operation is to be discharged into the municipal sewer network after the grease trap. Reuse and harmless emissions by the sewage treatment plant after it achieves "urban sewage treatment plant emission standards" level one B standard. The project sewage after the grease trap is to meet the water requirements of the treatment plant before being directly discharged into the municipal sewer network.

5.3.4.2 Solid Waste Pollution Control Measures

Garbage are to be classified and bagged before being collected, are to be put to the trash bin of each building, then be removed by sanitation department daily. Transfer station should be built downwind with more than 10m the distance between adjacent buildings.

5.3.5 Changji Campus, Xinjiang Agricultural Vocational and Technical College Environmental Protection Measures

5.3.5.1 Water Pollutant Control Measures

Sewage generated during the project operation is to be discharged into the municipal sewer network after the grease trap. Reuse and harmless emissions by the sewage treatment plant after it achieves "urban sewage treatment plant emission standards" level one B standard. The project sewage after the grease trap is to meet the water requirements of the treatment plant before being directly discharged into the municipal sewer network. To ensure that the sewage discharge standards, the following should be done:

①The design and construction of grease traps should be entrusted to units with relevant qualifications. The grease trap should be equipped with processing capacity for the maximum amount of water, besides reserve at least 1.2 times the processing power to meet the demands of water fluctuation.

②After completion of the project, sewers, grease traps and other water treatment facilities completed at the same period required for leakage-proof treatment.

③To strengthen environmental management and to strictly implement the relevant provisions. The project sewage treatment systems and other environmental protection facilities should receive regular inspection and maintenance to keep it in good working condition and treatment efficiency.

④To ensure contaminants achieve the designed treatment effect, the management of the

purification devices should be strengthened to work in normal condition. It is required to apply with the environmental protection departments for monitoring and inspection until the device is stable.

⑤The project sewage treated after the grease trap must be discharged into the municipal sewer network.

⑥Rain and sewage diversion system should be implemented to separate rainwater and sewage to be discharged respectively.

5.3.5.2 Solid Waste Pollution Control Measures

(1) Garbage are to be classified and bagged before being collected, are to be put to the trash bin of each building, then be removed by sanitation department daily.

(2) Transfer station should be built downwind with more than 10m the distance between adjacent buildings.

(3) Publicity and education should be strengthened to stop littering, to encourage garbage classification, reduction and recycling, etc.

(4) The garbage classification and collection system should be established.

The waste and paper account for a large component of the total waste in the recyclable garbage in the project garbage. If recycling could be achieved in the garbage collection, not only could the garbage transport costs could be saved, but also the load of municipal landfill disposal could be reduced.

5.3.5.3 Air Pollution Control Measures

Natural gas used as fuel in the catering of the project is a clean energy. It is prohibited to use coal, oil and other energy sources. So air pollution is mainly the kitchen cooking exhaust emissions. The project catering fumes are emitted through a high-altitude flue after being purified by a facility whose soot removal efficiency reaches 85% of large equipments. Fume emissions can achieve, "cooking fume emission standards (Trial)" (GB18483-2001) with soot emission concentration $\leq 2.0 mg / m^3$.

5.3.5.4 Noise Pollution Control Measures

①Various machinery and equipments are to choose advanced and efficient low-noise model.

②Pressure pumps, fire pumps, fans and other parts of pumping are to be equipped in the

basement rooms, sound-proof door are to be installed for facilities rooms, basis damping should be constructed for pumps and fans, silencer should be installed at the inlet and outlet of the fan, micro muffler and so on could be used at the outlet of the exhaust pipe.

③Fan of the air conditioning and ventilation system, extraction fan should be located in specialized equipment room or noise-proof room.

④Pump base should be equipped with isolation treatment facilities, the pump inlet and outlet should be equipped with soft rubber joints, slow closing check valve to mitigate the effects of noise.

5.4 EM Plan

The environmental monitoring plan of the project focuses on the operation period. The main impact from the construction is the civil construction activities, including noise, construction dusting and other factors. The construction of the project is on the preserved land of each school, during the construction process, only environmental management and construction organization need to be strengthened, construction noise and dust monitoring analysis are unnecessary.

5.4.1 Environmental Monitoring Agency

In order to ensure a variety of adverse environmental impact of the project has been effectively controlled, the whole process of the project must be under rigorous, scientific track, and to regulate the environmental management and environmental monitoring.

Responsibilities for environmental monitoring agency are as following:

A qualified environmental monitoring agency under the management of World Bank Loan Project Management Office is responsible for the environmental monitoring during operation as well as World Bank specialists.

Environmental management during construction and operation of the project is supervised by the Qualified Monitoring Agency ， which is responsible for the Department of Environmental Protection Xinjiang Uygur Autonomous Region.

5.4.2 The Type and Content of Monitoring Reports

Illustration of Monitoring sites, sampling time, monitoring factors are to be included in the report besides the corresponding analysis and evaluation of the monitoring results in the monitoring period compared with standards.

According to the monitoring results, the evaluation of implementing environmental mitigation measures and its effect are to be included in the report.

Discussions with the supervisory agencies, and environmental impact assessment group, consultation, improvement or change for ineffective mitigation measures are to be included in the report.

5.4.3 Time and Administrations for Submitting Monitoring Reports

(1) Submit Monitoring Reports

Submit an annual report on operations;

(2) Administration to Receive Monitoring Report

Monitoring reports are submitted to Urumqi Municipal Environmental Protection Bureau, Changji EPA, EPA Hotan Prefecture, World Bank Loan Project Management Office as well as the administrative departments and relevant departments of the World Bank.

(3) The Object and Location of Regular Monitoring

Specific environmental monitoring plan during operation period includes: monitoring objects (air, noise, waste water etc.), monitoring indicators, methods, location, time and frequency (see Table 5.4-1).

Environmental monitoring is intended for a comprehensive understanding of the pollution trends of the proposed project; understand the extent of the project on environmental quality changes, the scope of impact, environmental quality dynamic during the operation of the project construction area, deliver timely feedback to the administrations, provide scientific evidence for environment management of the project.

Table 5.4-1 Environmental Monitoring Plan

Monitoring phase	Monitoring Project	Each sub-project university	Monitoring location	Monitoring Frequency	Monitoring Methods	Monitoring Agency	Sources of funds	Price (ten thousand)
Operation Period	Catering fumes	Xinjiang Institute of Light Industry Technology	Fume exhaust outlet	1 time / year, 6 years	According to the "cooking fume emission standards" (GB18483-2001)	Qualified Monitoring Institute	Project construction funds	3.0
		Xinjiang Agricultural Vocational Technical College				Qualified Monitoring Institute		
	Ph, BOD Ammonia COD suspended solids Animal and vegetable oils	Xinjiang Institute of Light Industry Technolog	Grease traps outlet monitoring catering waste water	1 time / year, 6 years	According to the "Environmental Monitoring technical specifications" (surface water and waste water section)	Qualified Monitoring Institute	Projects operation funds	3.0
		Changji Campus, Xinjiang Agricultural Vocational Technical College				Qualified Monitoring Institute		
Sub-total								6.0

6 Public Participation and Information Disclosure

Public participation is a two-way communication between the public and the project constructionists. The establishment of normal mechanisms for public participation in environmental supervision and management enables the public from the project area to be informed about information on environmental issues, to express their views through normal channels, finally to make the project decision-making process more scientific and democratic, which is essential for policy and implementation of construction plan.

6.1 The Purpose of Public Participation

The public should participate and understand the construction purpose, size, construction location and possible environmental pollution during the construction and operation, countermeasures for pollution, express their opinions, so understanding, support and cooperation

could be achieved toward the project. Through interviews with local permanent residents about their experience and feeling for their living environment, the analysis of status quo of quality and levels of environmental factors in the region could be aided in order to reflect the objectivity of the environmental assessment, to protect the interests of the public.

6.2 General Requirements for Public Participation

Public participation mainly adopts questionnaires, surveys on line and other means.

In accordance with the "Interim Measures on Public Participation in Environmental Impact Assessment" ([2006] No. 28), it requires two rounds of participation. The process of public participation can be seen below in Table 6.2-1. The process of public participation must be legal.

Table 6.2-1 Times and Forms for Collecting Public Comments

Public Participation phase	Means	Content	Time
First	Media publicity	Xinjiang Uygur Autonomous Region Department of Environmental Protection website (http://www.xjepb.gov.cn)	October 14, 2013
	Announcement	residential area, schools, towns, etc. of Xinjiang College of Engineering, Xinjiang Agricultural Vocational Technical College, Xinjiang Institute of Light Industry Vocational Technology, Urumqi Vocational University and College of Xinjiang Uyghur Medicine	April 3- April 15, 2014
	Interview	residential area, schools, towns, etc. of Xinjiang Engineering, Xinjiang Agricultural Vocational Technical College, Xinjiang Institute of Light Industry Vocational Technology, Urumqi Vocational University and College of Xinjiang Uyghur Medicine	April 3- April 15, 2014
Second	Media publicity	Xinjiang Uygur Autonomous Region Department of Environmental Protection website	October 29, 2014

		(http://www.xjepb.gov.cn) *Xinjiang's Economic Report* Xinjiang College of Engineering, Xinjiang Agricultural Vocational Technical College, Xinjiang Institute of Light Industry Technology , Urumqi Vocational University and College of Xinjiang Uyghur Medicine website	
	Group questionnaire	West Railway Station Street Office Jinqiao community, Hotan County Environmental Protection Agency, Hotan County High School, Plants Source Agricultural Science and Technology Co., Ltd., Xinjiang Agricultural Vocational Technical College, Changji City Environmental Protection Bureau, Changji City Bureau of Education, Park Planning and Construction Environmental Protection Bureau	November 2014
↓	Individual Interviews and questionnaire	residential area, schools, towns, etc. of Xinjiang College of Engineering, Xinjiang Agricultural Vocational Technical College, Xinjiang Institute of Light Industry Technology, Urumqi Vocational University and College of Xinjiang Uyghur Medicine	November- December 2014

6.2.1 Questionnaire

The questionnaires were issued after 10 working days of the second information disclosure. A total of 204 questionnaires were all returned.

Taking into account the Uyghur ethnic community of Xinjiang Uygur Medical School, questionnaires is designed to Chinese and Uyghur. The questionnaire includes Han 128 people, Uygur 65 people, Hui 9, Kazakh 1 people, Uzbek 1. Ethnic and Han proportion is 76: 128.

6.2.2 Group Questionnaire

5 sub-project units distributed eight group questionnaires, all returned. The interviewees include: West Railway Station Street Office Jinqiao Community, Hotan County Environmental Protection Agency, Hotan County High School, Plants Source of Agricultural Science and

Technology Co., Ltd., Xinjiang Agricultural Vocational Technical College, Changji City Environmental Protection Bureau, Changji City Bureau of Education. The above units all agree that the construction of the projects are beneficial to improve living standards, increase revenue, improve the quality of teaching, improve students' employment rate and employment levels.

EA team will pass feedbacks collected from two rounds of public participation to the construction units. Accordingly, the construction units will take reasonable methods of construction, rational distribution of the construction, to minimize the adverse impact of construction projects on the environment and residents.

6.2.3 Questionnaire Feedback

(1) Over all feedback: The project receives full support from the government administrations and the people. The project will bring long-term benefits for socio-economic development in the region, will help improve the quality of teaching, increase student employment rates and employment levels;

(2) Departments of environmental protection feedback: Projects construction receives support from the departments of environmental protection. Suggestion one is that the construction waste as well as traces of construction should be cleaned to prevent environmental pollution, besides the greening of the site should be improved. Suggestion two is about the sewage treatment and disposal; suggestion three is that the design of sub-project should on the one hand reflect local characteristics, on the other hand be in harmony with the surrounding environment as much as possible.

(3) Planning and Construction Department: Projects construction receives support from the planning and construction departments. In terms of the procedures for approval of the housing and construction should abide by the relevant provisions of the country;

(4) Community: Projects construction receives support from the community. It is recommended that information disclosure and publicity should be enhanced during the operational phase of the project to get the understanding and support of the public;

(5) People: Projects construction receives support from the people. The project is beneficial to the economic and social development in the region and minority employment.

6.3 The Legitimacy, Validity, Representativeness and Authenticity Analysis of Public Participation

6.3.1 Public Participation Legitimacy

In accordance with the "*Interim Measures on Public Participation in Environmental Impact Assessment*" requires two times of public participation. The first time of information publicity is October 14, 2013, seven days after the environmental impact assessment commission.

The second time of the information publicity is October 29, 2014, after the environment code of practice first draft was completed. Information disclosure meets the requirements of schedule, the process of public participation is of legitimacy.

6.3.2 Methodology Validity

Information disclosure methodologies include publicity on website, announcements by posting, investigation by questionnaires, specialists' consultation and other means. The methodologies are of validity.

6.3.3 **Object** Representativeness

People interviewed are mainly adults aged 20-50, accounting for 95.1% of all the interviewees, who received primary or middle school education, including 178 people of secondary (high school) education. The proportion of ethnic and Han interviewees is 76: 128. All of the interviewees live around the project area, share certain understanding of the project, have personal experience of their environmental impact, and possess good cognitive abilities and expression skills, so the comments of the interviewees are of representativeness.

6.3.4 Results Authenticity

The comments on the construction of the proposed project by the interviewees are: The project is beneficial to improve the living standards, to increase revenue, to improve education quality, to increase students' employment rates and levels; beneficial to regional public employment, maintain social stability. Meanwhile, concerns over the environmental and social impacts of the project area for ecological are also expressed. The public want appropriate

measures be taken during construction and operations to mitigate the adverse effects of the project. Results of the questionnaires are of authenticity.

6.4 Social Analysis Report, Ethnic Development Plan and Social Stability Risk Analysis Report

Department of Education commissioned PMO Urumqi Long-term Stability of Socio-economic Consultation limited company to compose social analysis report. The project-related information was announced and informed to the public by social analysis planning group with full free consultations and higher degree of public participation of teachers and students .Specific working schedule can be seen in Table 6.4-1.

Table 6.4-1 Social evaluation group working schedule

Time	Event Location	Event results
January – March 2014	College of Xinjiang Uyghur Medicine,	To complete the assessment of the school community to conduct field investigations and submit 40,000-word assessment report
July 21st	Education Department of Xinjiang Uygur Autonomous Region	Ethnic development plan was formally signed between commissioner and the entrusted party about the five colleges' social assessment
July 28th	Education Department of Xinjiang Uygur Autonomous Region	Project Team meet leaders of all levels of the PMO, organize the training for PMO staff
July 29th	Xinjiang Academy of Social Sciences	Invite visiting researcher Ge Fengjiao from Xinjiang College of Education Sciences to lecture about "The Development of Vocational Education of Xinjiang"
July 30th – August 1st	Xinjiang Academy of Social Sciences	The project team organize group training, seminars and interviews outline, questionnaire design
August 2nd - August 20th	Xinjiang College of Engineering, Urumqi Vocational College, Xinjiang Agricultural Vocational Technical College, Xinjiang Institute of Light	A total of 33 seminars are to be held with 292 participants; 66 interviews.

	Industry Technology, College of Xinjiang Uyghur Medicine,	
After August 20th		Start the composition of social analysis report, ethnic development plan, social stability risk analysis report

Through questionnaires, field investigation, seminars, in-depth interviews and other types of methodologies, 2131 questionnaires were completed (400 copies of teacher and 1731 copies of students), 4-5 seminars were organized in each school, a large number of interviews with text information were collected.

Overall the interviewed teachers and students welcomed the World Bank Loan Xinjiang Technical and Vocational Education Training Project. Teachers being favorable of the project are 388, accounting for 97% of all the teachers interviewed, students being favorable of the project are 1539, accounting for 88.9% of all the students interviewed.

After the social analysis, project team learn the attitudes of the relevant major beneficiaries of the project in five project schools, the support by the project to the development of vocational education in Xinjiang, problems require attention, possible negative impact of the project, as well as comments and suggestions for the project. It is proposed in the social analysis report and ethnic development plan on curriculum reform, building high-level teaching team, serving the local community, school-enterprise cooperation, school hardware.

In the investigation of social analysis, 2/3 ethnic students from 5 project schools are required to learn Chinese in the preparatory year, ethnic graduates employment rate is low. The project developed an ethnic development plan to propose on education and employment for ethnic students, building teaching team of Chinese for school, improve learning conditions of Chinese and strengthen ethnic employment guidance. Issues and recommendations from the investigation can be seen in Table 6.4-2.

Table 6.4-2 Main Issues and Recommendations Table

Category	Main problems	Recommendations
Social	1: The structure of the courses is not	1: To introduce appropriate policies

Analysis Report	reasonable, the overall quality of students needs to be improved; 2: Preparatory study of Chinese is not well connected with specialty study of Chinese, ethnic students' still encounter language barriers in their study of specialty 3: The students' training and intern are still not up to standard, it is common that the intern doesn't require specialty knowledge 4: Teaching reform lacks of ideas, teaching materials and teaching methods are out-dated and do not satisfy the Xinjiang regional characteristics; 5: Adjustment of specialty and courses are not closely connected with the enterprise, market demand; 6: How to help students (especially ethnic students) to establish a correct idea of employment and improve employability; 7: Problem of "Dumb Chinese" need to be solved, the learning environment for ethnic students of the Chinese language has to be improved; 8: Ethnic students varied in the learning foundation of Chinese, how to teach Chinese according to individuality;	and programs, to build high-level teaching team and the management team; 2: To appreciate the importance of school serving local community, to introduce appropriate policies and programs, to innovate services for local community in ways and meanings; 3: To train vocational professionals jointly through school-enterprise cooperation; 4: To enhance the construction of hardware and software, to improve schooling conditions.
Ethnic Development Plan	**Xinjiang Vocational Education Reform** 1. Ethnic students' training of listening and speaking of Chinese are inadequate, the problem "dumb Chinese" is serious; 2, Ethnic students are poor in Chinese and cultural foundation, which produces impact on their study of specialty; 3. the learning environment for ethnic students of the Chinese language has to be improved; 4, Bilingual teaching is difficult to meet the needs of students; 5, Teaching methods, teaching materials are out-dated; 6, The employment for ethnic students lacks of personalized guidance, and are	Recommendations and measures for curriculum and teaching reform 1, To create more opportunities for exchange by the second language classroom; 2, To create more opportunities for exchange by the second language classroom; 3, To strengthen employment guidance for ethnic; 4, To promote exchange between preparatory students and other ethnic students by using the external environment, to establish system to

	not practical;	encourage communication between Han and ethnic students, and the sharing of dormitories. 5, To integrate the national traditional culture of all ethnics into the humanities and ideological education, to increase the sense of integration by minority students; 6, To combine the ethnic students' humanistic quality education with current economic and social development as well as the requirements of business; 7, To organize cultural activities on campus with varied themes and ethnic characteristics; 8, To promote ideas, methods and models of Chinese teaching in five school jointly;
	Teaching and team building: 1, Lack of ethnic teachers, especially Chinese teachers; 2, Lack of ethnic staff at school; 3, Lack of ethnic teachers with high qualifications and titles; 4, The ethnic female teachers have low career achievement and low participation in training, further-education; 5. Lack of understanding of the importance of building the teaching team; 6, Ethnic staff at school work with great pressure but narrow development space; 7, Traditional thinking restrict the development of ethnic women teachers; 8. Ethnic teachers with high qualification and title is demanding with low pay, so ethnic teachers lack of enthusiasm;	**Recommendations on building a high level of teaching and management team** 1, To improve the training of ethnic professional and to attract ethnic talents; 2, To build team of teaching Chinese at school; 3. To compose and implement ethnic staff development plans, to enhance the space of development; 4, To innovate training model for ethnic female teachers; 5. To Strengthen training of ethnic teachers with high qualification and title;

	Social service 1, Social service lacks of specialty characteristics; the social service toward ethnic lacks of awareness; 2, Social service is not well connected with the development needs of ethnic; 3, Poor hardware conditions restricts social services; 4, Social service lacks of incentives ;	**Recommendations for social service** 1, To improve schooling conditions, to prioritize ethnic in social services; 2, To raise the awareness of social services for ethnic, to enrich services and improve service levels; 3, To meet the special needs of ethnics with specialty advantages; 4, To establish and perfect the mechanism of social services, institutionalize services for ethnics;
	School-enterprise cooperation 1, The intern of ethnic students are ineffective, employment rate is low; 2, Personnel mechanisms of two-way flow between teachers and technicians in the school-enterprise cooperation are inadequate; 3, Ethnic graduates do not enjoy favorable policy; 4, Some training base for students are not completed;	Recommendations for **promoting school-enterprise cooperation** 1, To encourage the enthusiasm of schools and businesses and jointly promote further cooperation; 2, School-enterprise cooperation should take the advantages of Xinjiang Traditional Ethnic industries; 3, To strengthen policy advocacy, to create conditions for ethnic students internships and employment; 4, To establish incentives for school-enterprise cooperation, to encourage teacher's initiative;
	Schooling conditions 1, Lack of funds for school construction, the number of ethnic students continue to increase; 2, The requirement for vocational education and teaching facilities are becoming higher; 3, The special needs of ethnic students receive less attention.	Recommendations for school hardware 1, To raise construction funds, set up a special ethnic construction fund; 2. To strengthen the construction of teaching facilities for Chinese, especially language lab; 3, To pay attention to the habits of ethnic, to improve the living and studying conditions of ethnic students; 4. To strengthen the construction of library especially ethnic books and resources, to meet the needs of ethnic students and teachers.
Social stability evaluation	1, The issue of ethnic customs 2, The issue of timely settlement of wages for migrant workers	1, In the cases concerning the interests of the ethnic, it must be serious and responsible. In the construction, construction workers should be taught

	3, The issue of disturbance during construction	not to crowd the ethnic religious activities, not to contaminate the water, respect for ethnic customs and habits. 2, The project contractors should at the time of tendering include the national and regional regulations on the protection of the rights of migrant workers' wages in the supervision and construction contract, such as margin system for wages of migrant workers. 3, Strict requirements and supervision should be implemented to the construction units of in order to reduce disturbance.

Xinjiang Technical and Vocational Education and Training Project will play a significant role in the promotion of Xinjiang vocational education and improve the level of vocational education, which will have a great benefits for the project schools, teachers and students, first, second and tertiary industries of Xinjiang. Implementation of the project can not only directly benefit groups and businesses associated with the project school, but also improve the employment environment of Xinjiang, creating more employment opportunities for young people of all ethnic groups (especially ethnic youth), improving the lives of people of all ethnics, in the long term helping to consolidate and develop harmonious ethnic relations in Xinjiang, which is the best hope for the people of all ethnic groups in Xinjiang. Overall, the World Bank's support for Xinjiang Technical and Vocational Education and Training Project is of positive social significance.

6.5 Summary

Two publicities of the project were conducted in accordance with the "Interim Measures on Public Participation"; and according to the distribution pattern of interests and stakeholders in the project area, a total of 204 questionnaires were distributed and completely collected.Departments interviews showed that various government departments are supportive of the project.Public interviews showed that 98 percent support the project, two percent showed indifference; the statistical results of this survey indicate that public showed high approval of the project, generally believed the construction of the project are beneficial on the improvement of living standards, increase revenue, improve education quality of teaching, improve students' employment rate and employment levels.

Appendix 1 Environment Inspection Checklist

World Bank Loan Xinjiang Technical and Vocational Education and Training Project Serial number:

(Instructions: This form is for on-site environment inspection checklist of World Bank Loan Xinjiang Technical and Vocational Education and Training Project, exclusively for checking sub-projects, local environmental conditions and related environmental protection measures, and it may be added or adjusted if necessary.)

Sub-project: _____

Contract number and name: _____

Project site: _____

The current construction phase: _____

Environment inspection date: _____

Weather conditions: _____

Environmental inspector: _____

Items for inspection	**Implementation**		**N/A**	**Problems and non-compliance, recommendations for correction, precaution**
	YES	NO		
1.2.1.1Air Pollution Control				
1.1 Whether the construction site are watered to reduce dust				
1.2 Whether powdery material disposal site are under-covered or watered to reduce dust; whether cement bags are opened in sheltered places				
1.3 Whether the vehicle with powdery material are covered or sprinkled before leaving the site				
1.4 Whether demolition project are equipped with sprinklers				
1.5 Whether Dusty road are paved				

with hard surface and watered				
1.6 Whether equipments are maintained, whether the equipment produces black smoke and if so where is it?				
1.7 Whether the places generating dust are set with closure, (such as mud mixing)				
1.8 Whether the temporary enclosure was erected at the site boundary				
1.9. Whether speed limit should be required at construction road				
1.10 Whether the kitchen fume at the construction site are treated with facilities as required				
1.11 Whether the organic solvent is sealed and stored				
1.12. Other (depending on the circumstances)				
2.1.2 Water Pollution Control				
2.1 Whether waste water treatment systems at the construction site are maintained and operated (such as sedimentation tank)				
2.2. Whether waste water is discharged to storm water channels? Whether waste is processed?				
2.3: Whether the construction site has a guide gutter construction of waste water collection facilities (such as soil ridge groove or U-groove)				
2.4 Whether sludge in a U-shaped structure is cleaned				
2.5. Whether sludge in grit chamber / sedimentation tank is cleaned				
2.6. Whether sand bags or earth mound are used to prevent the gravel and sediment overflowing to the public road and sidewalk				
2.7. Whether vehicles and equipment are cleaned before				

leaving the construction site				
2.8. Whether washing facilities are maintained, whether sediment spilling or flooding is prevented				
2.9. Whether the sediment from washing facilities are regularly cleaned.				
2.10. Whether public roads / places, entrance, temporary fence construction site turnover are clean without dirt mud.				
2.12. Whether the sewage is discharged to the septic tank and properly treated				
2.13. Other (according to the specific requirements of Chapter V)				
2.1.3 Noise Control				
3.1. Whether construction pauses in period noise is limited or banned,				
3.2, Whether a valid construction noise permit is authorized				
3.3 Whether the high-noise devices are enclosed and located away from sensitive points				
3.4 Whether the equipments noise is acceptable at the field				
3.5 Other (depending on the circumstances)				
2.1.4 Solid Waste Management				
4.1. Whether different solid waste bin are used for collection				
4.2. Whether the waste collection bins locate at designated place and with clear mark, whether these locations are known to all the staff				
4.3.Whether the construction waste, recyclable waste and waste, etc.are regularly cleaned at the construction site				
4.4. Whether hazardous waste (if any) is collected by a qualified agency to collect and properly disposed				

4.5 Whether the qualification of hazardous waste treatment agency covers all the hazardous waste generated at the construction site				
4.6.Whether hazardous waste storage complies with relevant laws and regulations, whether hazardous waste is properly stored and with warning				
4.7. Whether the site has oil spills or chemical spills on the ground				
4.8 Whether proper methods are used to clean the contaminated soil immediately in case of oil or chemical spills at the site				
4.9. Whether the blockage in the drain / sewer near the construction site is removed.				
4.10. Other (depending on the circumstances)				
5 The **Storage and Handling of Chemicals / Dangerous Goods**				
5.1. Whether chemicals are stored and labeled properly				
5.2. Whether the storage of dangerous goods are in compliance with the regulations of the storage type, storage capacity, storage distance				
5.3. During the maintenance, whether measures in case of leaking chemicals and oil are proper				
5.4. Whether anti-fouling emergency kits used to absorb leaking chemicals / sand / saws grinding tools and materials are equipped and available				
5.5 Other (depending on the circumstances)				
6 Protection of Animals, Plants, Relics				
6.1 Whether disturbance to terrestrial plants is reduced to a minimum level? Whether plant is protected				

6.2 Whether cultural relics are occasionally found in the construction, and if any, protective measures must be taken				
6.3 Other (depending on the circumstances)				
7 Resource Protection				
7.1. Whether waste water are recycled after the sludge treatment				
7.2. Whether the pipes burst and wastage are prevented				
7.3. Whether various power devices are shut when not in use in order to reduce fuel consumption				
7.4. Whether viable energy saving measures are taken				
7.5. Whether metal or other alternatives are used to reduce the use of wood only.				
7.6. Whether the material storage conditions are good to prevent material degradation or waste				
7.8. Other (depending on the circumstances)				
8. Emergency Measures				
8.1 Whether fire extinguishers or fire protection facilities are in good condition and effective, whether the escape routes are blocked				
8.2. Whether an accident or incident is reported or the verified, whether corrective, preventive actions are taken and recorded				
8.3 Whether is emergency preparedness and response procedures developed				
8.4. Other (depending on the circumstances)				

* Any records of "non implementation" indicates that there may be cases non-compliance with regulations or in need of improvement. At this time, "Environment Rectification Notice" should be issued immediately to the contractor by environmental supervision, the serial number of "Environment Rectification Notice" should be recorded in the remarks

column, besides the rectification of the contractor should also be recorded.

Inspector Inspection date

Environment Supervisor: Date

Appendix 2 Directory of Contractor Environmental Site Management Plan

Contractors, once they are awarded the contract, should immediately prepare its "Environmental Site Management Plan", mainly for specific measures at the construction site operation and construction process, especially the "Environmental Code of Practice" and the measures for implementation, such as : construction site management, health and safety, traffic and transport, noise and vibration, air pollution, waste disposal and recycling, water quality, the natural environment protection, cultural heritage protection, staff dormitory management. Contractor's Environmental Site Management Plans subject to the inspection and approval of the project management office. In the process of construction, the contractor accepts the daily environmental inspection by project management office. The rectification notice by Project Management Office must be responded to ensure that each stage of construction comply with the "Environmental Code of Practice" requirements.

Work plans for environmental management is included but not limited to the following directory

(1) Project Overview

(2) Environmental characteristics of the construction site

(3) Site environmental management objectives

(4) Positions for site management and responsibilities

(5) Time for environment inspection

(6) The method, time and approach to communicate with PMO about environment issues

(7) Considering the fact that projects are constructed out on the campus, and produce little impact on the surrounding environment, the items of inspection for environmental management of are consistent with Appendix 1. Appendix 1 "environmental inspection checklist" is used in the inspection.

Appendix 3 Environmental Rectification Notice Issued to the Contractors by Environmental Supervisor

Number: Contract Number and Name:

Project Name: CC Unit:

Current construction stage: Date:

Problems from site inspection:
Reasons and correction measures:
Rectification advice from environmental protection department (if necessary):
Environmental inspector: date: deadline for rectification: to be corrected in days signed by: Date:
Review conclusion:

Review: Date:

Appendix 4 Emergency Flowchart for Found Relics