World Bank-financed

China Plastic Waste Reduction Project (Shaanxi)

——Batch 1 Subprojects

Social Impact Assessment Report

Foreign Loan Project Management Office of Shaanxi Province

November 2022

Executive Summary

The China Plastic Waste Reduction Project (Shaanxi) (P176989) (hereinafter referred to as "the Project") will be implemented in Shaanxi Province. The Project is one of the subprojects of the World Bank-financed China Plastic Waste Reduction Project in China (P174267). The Project will be carried out based on the combination of the Environmental and Social Management Framework (ESMF) with the environmental and social impact assessment (ESIA) of Batch 1 subprojects. The details are shown as follows:

- Preparing ESMF documents for the entire Shaanxi Project, including ESMF, Stakeholder Engagement Framework (SEF), and Environmental and Social Commitment Plan (ESCP);
- For the scope identified for Batch 1 Subprojects in Shaanxi, preparing detailed environmental and social management documents, including a social audit report, SIA report, labor management procedure, stakeholder engagement plan, resettlement plan, etc.

According to the above principles and methods, the Shaanxi PMO, Baoji PMO, District/County PMOs and PIUs (project implementation unit), during the project preparation process, have determined the districts and counties of Batch 1 subprojects, namely Linwei District, Chengcheng County in Weinan City, Chencang District in Baoji City, and Baoji City. The main activities of the Project include the construction of front-end domestic waste collection facilities (including waste bins and vehicle procurement), transfer facilities (including vehicle procurement, waste transfer truck parking & maintenance centers), and sorting centers, as well as the closure of domestic waste landfills (including the reconstruction of landfill leachate treatment plants).

Shaanxi PMO entrusts Shaanxi Keshe Business Information Consulting Co., Ltd. (hereinafter referred to as the "SIA unit" or "Shaanxi Keshe") to carry out social risk and impact survey and assessment for the Project.

The methods adopted for the SIA include literature study, focus group discussion, key informant interview, and questionnaire survey. During the survey, the SIA unit has made field visits to the project service area and conducted Focus Group Discussions (FGDs) and key informant interviews among the community residents affected by the Project, households involved in land acquisition and resettlement, project workers, relevant government departments, project owners and other relevant enterprises to keep track of key stakeholders' views, concerns, and suggestions for the Project.

In accordance with the Environmental and Social Standards (ESSs) under the World Bank's Environmental and Social Framework (ESF) and the World Bank-approved project environmental and social management framework, the SIA unit has screened and analyzed the social risks and impacts and has found the following:

1) none of the construction for Batch 1 subproject activities is located in ethnic minority communities, and no ethnic minority communities are collectively attached to the proposed project area, so ESS7 is not relevant;
2) the Project is not a financial intermediary, so ESS9 is not relevant; and,
3) Batch 1 subprojects do not involve any cultural relics and monuments identified in ESS8, nor will they have a significant impact on or involve commercial use of any intangible cultural heritage, so ESS8 does not apply.

The social risks related to the Project include NIMBY (not-in-my-back-yard) risks, labor safety and health risks, community health and safety risks, land acquisition and resettlement, insufficient stakeholder engagement, and legacy social problems (such as noncompliance with China's land use policies and land permitting, outstanding community health and safety impacts of landfills, etc..) in some existing facilities. Therefore, the SIA for the proposed Batch 1 subprojects refers to 5 environmental and social standards, namely ESS1, ESS2, ESS4, ESS5, and ESS10. To mitigate the identified risks, the SIA has developed corresponding social action plans for different facilities, and the SIA unit has also formulated labor management procedures (LMP) and separate stakeholder engagement plans (SEP) according to the activities of Batch 1 subprojects and their PIUs.

According to the social audit, social survey and impact analysis, **potential social risks mainly include the following:** (1) The construction of new WTSs and sorting centers has land acquisition and resettlement impacts; for the closure of landfills (Majiagou Landfill in Linwei District and Yaotou Landfill in Chengcheng County) that is included in activities of Batch 1 subprojects, the project sites are located on leased collective land, which does not comply with relevant requirements for the construction land of such facilities in China; the reuse of land after the closure may lead to disputes over land ownership. (2) The direct workers, contracted workers, and community workers (such as village/community cleaners) are involved in the project construction and operation, but there are still gaps between their working conditions (such as the salary level, working hours, contract terms, GRM, and overtime subsidy) and these required by the Labor Law; workers in some posts may also be exposed to OHS risks. (3) The project construction and material/waste transportation may present road and traffic

safety risks, the improper disposal of the closed landfill gas may cause an explosion and the improper disposal of leachate will bring risks to community health and safety; for communities with residents living within the sanitary protection zone of existing landfills (such as Chengcheng Landfill), such health and safety risks are even greater; due to the high water content of waste, the slope of the waste pile in Changshougou Landfill has the risk of sliding, constituting safety risks for downstream communities, facilities, and transportation. (4) The community workers in Batch 1 Subprojects, some workers not formally contracted, and waste collectors at non-sanitary landfills (about 50 persons) may be excluded from the Project due to a lack of opportunities to participate in the Project. (5) Insufficient effective stakeholder engagement may lead to unsustainable project development and community dissatisfaction. (6) Considering the social recognition of waste treatment projects, the site selection for waste collection points and WTSs and NIMBY risks during the construction, if not handled properly, may cause protests from the surrounding communities and the masses; if the landfills are built on collective land, the reuse of land after the closure may lead to community conflicts due to benefit distribution. According to the SIA, the above risk levels range from "low" to "substantial". Therefore, the overall social risk of the activities in Batch 1 subprojects is defined as "substantial".

Regarding the identified social risks and risk assessment, the SIA unit has reached an agreement with the Shaanxi PMO, District/County PMOs, and PIUs after negotiation. Based on the existing social risk management mechanism, the SIA unit has developed a social management plan to avoid and mitigate the negative impacts of the Project to the greatest extent. The Shaanxi PMO, District/County PMOs and PIUs have agreed to take **main social risk management measures** as follows:

1) Risks in labor and working conditions: It is necessary to formulate appropriate labor management procedures (LMP); conduct regular inspections of occupational hazards in workplaces and take corresponding measures according to the results; strengthen OHS training; strengthen employees' safety awareness, organize regular emergency drills, and guide employees to use personal protective equipment (PPE) properly; carry out occupational disease health examinations (including admission/dimission health examinations); further improve the grievance redress mechanism for employees (including direct workers, contracted workers, and community workers). The opinions, feedback and concerns raised by employees will be properly handled and recorded in writing; a qualified social management consulting agency will be entrusted to regularly monitor labor risk management, and the labor management will be improved as recommended.

2) Community health and safety risks: each district/county PMO and PIU will establish a formal community communication mechanism to strengthen the communication with communities and respond to the concerns of communities in a timely manner; a qualified social management consulting agency will be entrusted to regularly monitor and assess social management measures, the community health and safety risk management will be improved as recommended. Regarding community health and safety risks arising from the construction and operation of various facilities, the following measures will be taken:

- **For front-end waste collection facilities and transfer facilities:** It is necessary to optimize the construction organization scheme, develop reasonable construction procedures and construction schedules to minimize the impact of construction on communities, keep high-noise equipment, main sewage outlets, and other nuisance facilities away from sensitive points around the Project and strengthen internal supervision and management to avoid leakage of pollutants;
- **For transportation safety:** Measures for driver and vehicle management (including safety training, vehicle maintenance, etc.) will be optimized, and management requirements for safe driving in the transportation system will be formulated and strictly implemented.
- **For landfill closure:** corresponding technical schemes and measures to deal with the health risks of surrounding communities will be included in the design. Especially for the Yaotou Landfill in Chengcheng County, it is ensured that there are feasible measures to deal with the health risks of surrounding communities in its closure scheme and post-closure operation and maintenance scheme. For the landfill in Baoji with a risk of slope sliding, corresponding technical schemes and engineering and non-engineering measures will be taken to eliminate potential safety hazards; traffic safety facilities and signs at the entrance of the access road will be optimized in the design; construction supervision and external social monitoring will be strengthened.

3) **Land use of the project**

- **For the land for front-end facilities (village-level collection points/community sorting pavilions, etc.):** According to the practices in the project area, the ownership of the project land remains unchanged, and the land use method will be negotiated. On the basis of the existing procedures, the Shaanxi PMO has enhanced the procedures for

negotiation over land use (such as a complaint & grievance redress mechanism and monitoring & assessment);

- **For project activities involving land acquisition and resettlement (mainly caused by the construction of transfer facilities):** a resettlement action plan has been formulated in accordance with Environmental and Social Standard 5 (ESS5); land acquisition impacts, policies and standards, implementation plans and other information will be disclosed for public engagement and implementation in resettlement according to the resettlement action plan; a qualified social management consulting agency will be entrusted to monitor and assess the process and implementation of resettlement. At the same time, the project land will meet the requirements of the corresponding Chinese laws and regulations, and the necessary government approvals for the activities are required before the resettlement is implemented.
- **For the legacy problems of landfills:** Corresponding management procedures reducing closure and relevant requirements and measures for land reuse after closure will be formulated.
  - For landfills where residents' access will be also restricted not for other purposes after closure, the contract can be extended on the basis of effective communication with villagers;
  - The land acquisition shall be undertaken for landfills where new facilities will be constructed after closure. Prepare the resettlement plan and submit it to the World Bank for approval before the project evaluation as required by the ESMF;
  - In case of new benefit re-sharing involved in land reuse after closure, meaningful consultation shall be made with villagers to reach an agreement on the benefit distribution scheme;
  - For landfills with inspection non-compliance issues, determine a feasible treatment scheme as soon as possible, ensure that the relevant pre-requisites for the project land are prepared before the bidding for landfill closure, and meet the requirements of relevant domestic regulations.

4) Insufficient stakeholder engagement: The implementation will be in accordance with the Stakeholder Engagement Plan (SEP) and the determined Grievance Redress Mechanism (GRM) and sufficient resources will be provided to ensure the effective operation of the relevant mechanism; a special column will be set up on the government website to regularly publish project information,

especially environmental and social performance information; environmental and social monitoring information in the operation process will be released to communities in a timely manner.

5) Risks of exclusion: Community workers and some workers not contracted will be incorporated into the consultation procedures for project preparation, construction, and operation; priorities to participate in the future urban and rural waste collection and transfer system will be given to waste collectors at informal waste dumps on the basis of respecting their willingness and considering their work abilities, for example, suitable posts (such as village-level cleaners, agricultural film collection and transfer workers, etc.) will be provided to them after consultation with communities.

6) NIMBY risk: The PIUs will publicize the relevant information about the construction project through the official website, site publicity display boards, and community residential sites before construction; before the implementation, a special person will be assigned to be responsible for the GRM of residents in surrounding communities and the complaint telephone number and contact information of the project will be disclosed in the surrounding communities; during the construction and operation periods, a negotiation and communication system will be established between the PIU and communities for information exchange, response to the community's appeal, and timely release of environmental monitoring data and information to the stakeholders during facility operation.

On the basis of consultation with each stakeholder, a social management plan is formulated to avoid and mitigate the negative impacts of the project to the greatest extent and to expand the social benefits of the project. **See Table 8-1 in the Report for details.**

According to the measures in the social management plan, corresponding monitoring indicators are designed. The full-time responsible personnel of the Shaanxi PMO will collect and sort out information related to social management in a timely manner, regularly follow up on the implementation of subprojects, inspect the social performance of subprojects on site, identify problems and propose improvement suggestions.

During the project implementation, the Shaanxi PMO will entrust a third party to conduct independent monitoring and assessment of the implementation and performance of social actions and measures of the Project semiannually.

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Abbreviations

E&S	Environment and Society
EIA	Environmental Impact Assessment
ESF	Environmental and Social Framework
ESCP	Environmental and Social Commitment Plan
ESMF	Environmental and Social Management Framework
EHSG	World Bank Group's Environmental, Health and Safety Guidelines
ESS	Environmental and Social Standards
GIIP	Good International Industrial Practices
GAP	Gender Action Plan
GRM	Grievance Redress Mechanism
LMP	Labor Management Procedure
M&E	Monitoring and Evaluation
PIU	Project implementation unit
PMO	Project Management Office
PLG	Project Leading Group
SAP	Social Action Plan
SEP	Stakeholder Engagement Plan
TA	Technical assistance
ToRs	Terms of Reference
USD	US Dollars
WBG	World Bank Group

1 Project Introduction

1.1 Project Background

The China Plastic Waste Reduction Project (Shaanxi) (P176989) (hereinafter, the "Project")) is the second phase of the World Bank-financed program to support China in tackling plastic waste pollution. The Project will be implemented by **Shaanxi Province** and will be submitted to the World Bank Board of Executive Directors for approval in March 2023. The China Plastic Waste Reduction Project (Phase 1) was approved by the World Bank Board of Executive Directors in May 2021, and was implemented by the Department of Resource Conservation and Environmental Protection of the National Development and Reform Commission, Ningbo City and Chongqing City. In lines with the 14th Five-year Plan, the Project supports China's plastic pollution reduction, resource utilization, carbon neutrality and circular economy.

The project development objective is to provide information for plastic waste management at the national level, improve plastic waste management at the provincial level, and reduce plastic pollution in city-level solid waste in selected underserved areas. The Project includes three components:

Component 1: technical assistance for institutional strengthening and capacity building in plastic waste management

- Project activity 1A: urban and rural integrated waste service pattern development
- Project activity 1B: consultation / knowledge exchange between provinces, the Ministry of Housing and Urban-Rural Development, and the National Development and Reform Commission
- Project activity 1C: institutional strengthening and capacity building

Component 2: improving municipal solid waste management and agricultural plastic waste management in underserved areas

- Project activity 2A: urban and rural waste management
- Project activity 2B: collection and treatment of agricultural plastic waste

Component 3: project management, monitoring and evaluation

According to the project objective, composition and selection criteria for project counties / districts, the Project will cover 11 counties / districts (including

Baoji city[1]) in the Yellow River and Yangtze River basins in Shaanxi Province. See Table 1-1.

Table 1-1 Project Counties / Districts

Region	Prefecture-level city	County/District
Guangzhong region (Yellow River basin)	Baoji	Jintai, Weibin, Chencang and Fengxiang Districts
	Xianyang	Jingyang County
	Weinan	Linwei District, Chengcheng County, Baishui County, Pucheng County
Southern Shaanxi region (Yangtze River basin)	Ankang	Hanbin District
	Hanzhong	Nanzheng District

Source: Shaanxi PMO

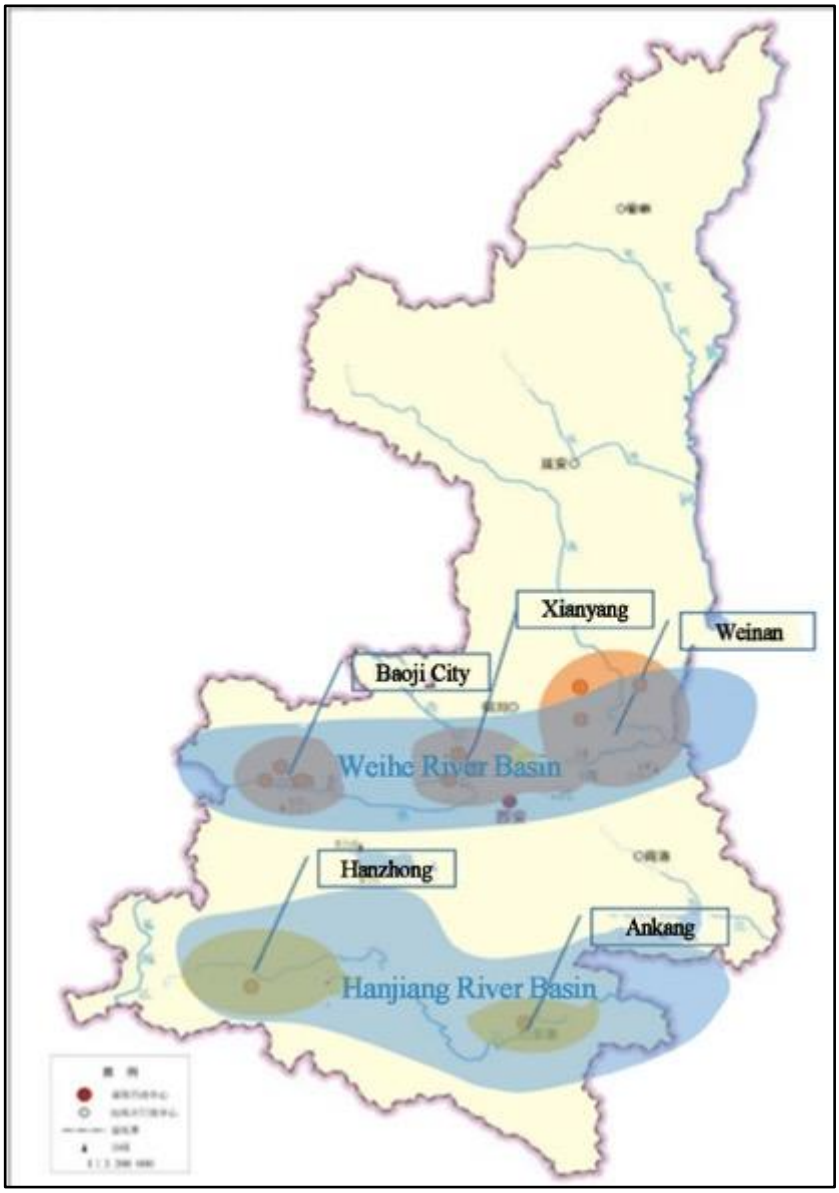

Figure 1-1 Location Map of Project Counties / Districts

[1] It is a municipal level city; the others are county-level.

1.2 Batch 1 Subprojects

At the preparation stage, since the details (including site, scale, technical solution, etc.) of some subproject activities are to be confirmed, the social management documents of the Project, namely the Shaanxi Plastic Waste Reduction Project, are prepared and assessed as follows:

- Prepare ESMF documents for the whole Project, including the ESMF, SEF, ESCP, etc.;
- Prepare detailed ES management documents in batches for the contents identified for the Project. Social management documents include SIA report, social audit report, labor management procedures (LMP), stakeholder engagement plan (SEP), resettlement plan (RP), etc.

According to the above principles and methods, the Shaanxi PMO, Baoji PMO, District/County PMOs and PIUs, during the project preparation process, have determined the districts and counties of Batch 1 subprojects, namely **Linwei District, Chengcheng County in Weinan City, Chencang District in Baoji City, and Baoji City**. The main activities of the Batch 1 subprojects include the construction of front-end domestic waste collection facilities (including waste bins and vehicle procurement), transfer facilities (including vehicle procurement, parking & maintenance centers for collection and transfer trucks), and sorting centers, as well as the closure of domestic waste landfills (including the reconstruction of landfill leachate treatment plants). The construction contents of Batch 1 subprojects are shown in Table 1-2.

Table 1-2 Main Contents of Batch 1 Subprojects

County/District	Activity	Construction Scale and Scope
Linwei District	Collection facility	Construction of 510 waste collection points (rural), each provided with 9 waste bins
		Construction of 500 community waste sorting pavilions (urban), each provided with 2 other waste bins, 2 recyclable waste bins, 2 kitchen waste bins and 1 hazardous waste bins
	Transfer facilities (including trucks)	Reconstruction of 3 urban WTSs; construction of 5 township WTSs;
		49 3t compression and transfer trucks (village / community to WTS); 21 12t box hook arm trucks (WTS to WTE plant)
	Sorting facility	Reconstruction of 135t/d sorting center
	Disposal facility	Closure of the Majiagou Landfill
Chengcheng County	Collection facility	Purchase of 195 electric door-to-door collection trucks
		Construction of 1 urban WTS and 9 township WTSs

County/District	Activity	Construction Scale and Scope
	Transfer facilities (including trucks)	40 2t hanging bucket trucks (village / community to WTS); 2 14t box hook arm trucks, 9 10t box hook arm trucks (urban WTS to WTE plant); 1 8t rear loading compression and transfer truck; 6 2t hanging bucket trucks (village to WTE plant)
	Disposal facility	Closure of the Chengcheng Landfill
		Closure of the Yaotou Landfill
Chencang District	Collection facility	Construction of 170 waste collection points, each provided with a 240L waste bins (rural)
		Construction of 500 domestic waste sorting pavilions, each provided with 3 240L other waste bins, 1 240L recyclable waste bin, 1 240L kitchen waste bin and 1 240L hazardous waste bin (urban)
		Construction of 30 central waste collection sites, and reconstruction of 2 central waste collection sites
		Cleaning vehicles, including 5 new energy washing and sweeping vehicles, fallen leaf cleaning vehicles and sprinkling vehicles
	Transfer facilities (including trucks and a truck maintenance center)	Construction of 2 urban WTSs and 3 township WTSs;
		Transfer trucks, including 3 20t transfer trucks, 7 12t compression and transfer trucks, 8 8t compression and transfer trucks, 3 12t mobile box hook arm trucks, 14 transfer site washing and sweeping vehicles, etc.
		Construction of a 11,000 m^2 waste transfer truck parking & maintenance center, including 15 parking spaces for 8t compression and transfer trucks, 15 parking spaces for 12t compression and transfer trucks, 15 parking spaces for 12t mobile box hook arm trucks, 5 20t box hook arm trucks, 300 for other sanitation vehicles, 30 charging piles, etc.
Baoji City	Disposal facility	Closure of the Changshougou Landfill

Source: Feasibility Study Report, August 2022.

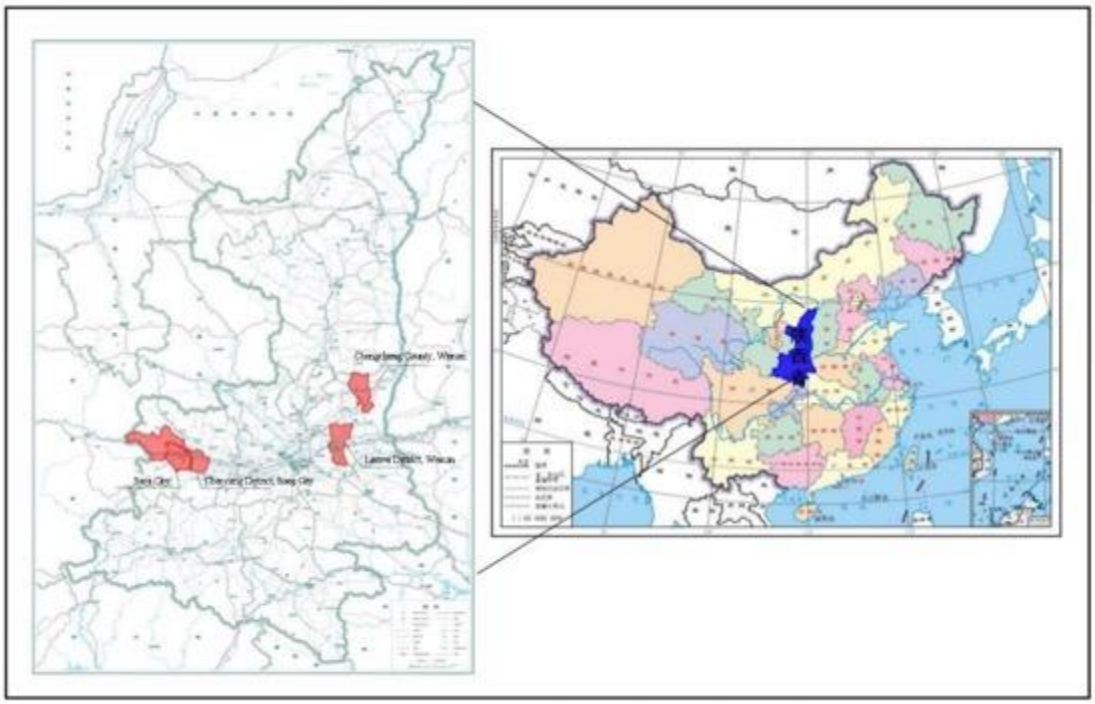

Figure 1-2 Distribution of Districts/Counties in Batch 1 Subprojects

To ensure successful project construction, the Shaanxi Project Leading Group (provincial steering committee) has been established [2] (PLG) led by Shaanxi Provincial Development and Reform Commission and Financial Department of Shaanxi Province, with members from relevant authorities such as housing construction, environmental protection, commerce and agriculture, as a coordinator to solve major issues in project construction. The Office of Steering Committee is located in Shaanxi Provincial Development and Reform Commission, and Shaanxi Provincial Foreign Loan Utilization Project Office (Shaanxi PMO) will perform the duty of the Office of Steering Committee. It is responsible for project planning, guidance, coordination, implementation, supervision, management and reporting, including the management of social matters.

The county / district governments have established county / district project leading groups (PLGs)[3] to coordinate the implementation of the county / district subprojects, and set county PMOs under these PLGs. The county / district PMOs thereunder are responsible for subproject planning, guidance, coordination,

[2] The Provincial Steering Committee consists of the provincial development and reform commission, finance department, ecology and environment department, housing and urban-rural development department, agriculture and rural affairs department, commerce department, rural revitalization bureau, and federation of supply and marketing cooperatives, and the participating prefecture-level cities (Baoji, Xianyang, Weinan, Yulin, Hanzhong and Ankang).

[3] The leading group of each district usually consists of the deputy district head in charge of environmental sanitation, development and reform bureau, finance bureau, ecology and environment bureau, housing and urban-rural development bureau, agriculture and rural affairs bureau, and urban administration and law enforcement bureau, township governments, etc.

implementation, management and supervision.

For the Batch 1 subprojects, the county / district governments have established PIUs, and operation and maintenance (O&M) agencies, responsible for facility construction and O&M.

The institutional arrangement for the Batch 1 subprojects refers to Figure 1-3.

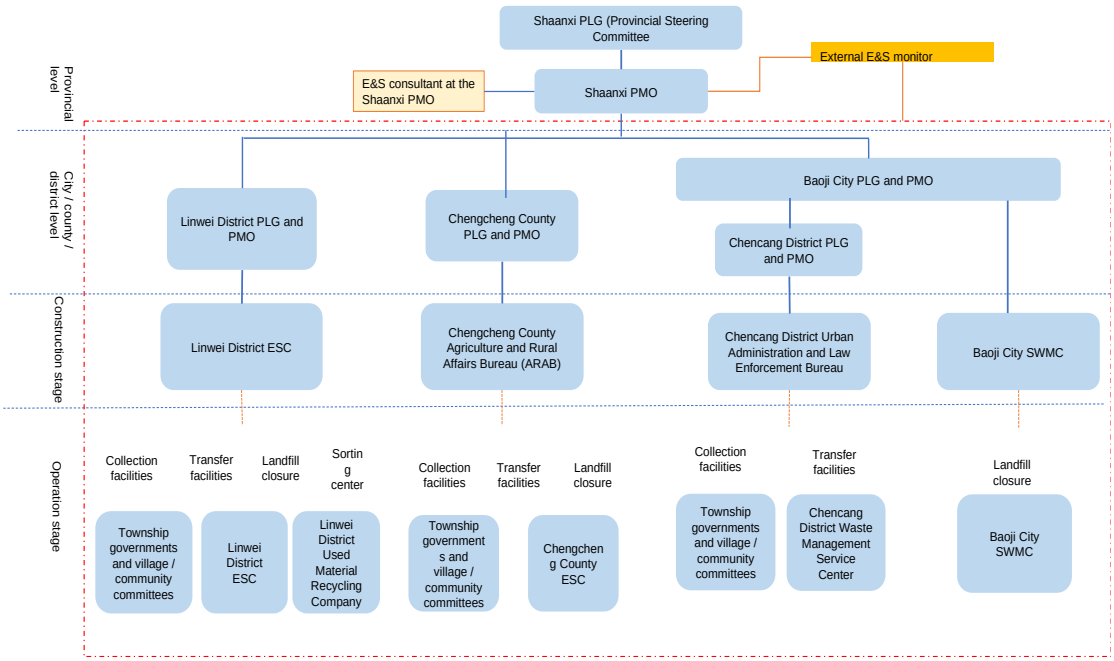

Figure 1-3 Organizational Structure for the Batch 1 Subprojects

1.3 Scope of the Social Impact Assessment

This SIA will apply to the Batch 1 Subprojects of the Project, involving Linwei District, Chengcheng County, Chencang District and Baoji City (at the city level).

The SIA focuses on the potential impacts of the site scope of each subproject facility and the construction and operation of project activities on workers, major surrounding sensitive communities, communities and residents affected by land acquisition and resettlement, as well as those communities that are along and may be affected by waste transfer lines during the operation.

At the same time, the SIA unit screens and assess the social risks and social impacts that may occur during the preliminary preparation stage, construction period, and O&M stage of Batch 1 subprojects, formulates mitigation measures and relevant documents, carries out stakeholder engagement activities, implements follow-up monitoring and completes relevant reports on a regular basis.

In addition to the SIA, social audits have been carried out on the existing facilities of Batch 1 subprojects (such as the basic situation, operation, and

management of existing transfer stations) and Project-related facilities[4], and social risks and impacts (including present management level of facilities, labor and working conditions, land acquisition and resettlement, community safety, and stakeholder engagement, etc.) have been assessed systematically for the assessment of the status and level of the social management of existing facilities and Project-related facilities and the formulation of corrective measures and actions, thus laying foundation for the SIA of Batch 1 Subprojects and the formulation of corresponding management measures. See the ***Social Audit Report*** for details.

Since the Social Impact Assessment (SIA) report is the leading social document covering all relevant social risks and impacts of the Batch 1 subprojects but has different level of details from other relevant social instruments that are required by the specific ESSs. The SIA and other social instruments would have certain overlapping substances. But the thematic social instruments (e.g., Labor Management Procedure (LMP), Resettlement Action Plan (RAP)) accentuate more detailed arrangements to implement relevant actions and measures to avoid, minimize, manage, and monitor relevant risks and impacts. For instance, for the Batch 1 subprojects, a solid and quality social audit reinforced the contents of LMP.

1.4 SIA Objectives

The SIA mainly aims to analyze and assess the potential social impacts and risks of the proposed subprojects during the entire project cycle (including current level, preparation, construction, and operation) in accordance with the relevant requirements of the World Bank's Environmental and Social Framework. The **specific purposes** of the SIA are as follows:

- Based on the results of the social audit and risk screening, the potential social impacts and risks in the future construction and operation of the future investment activities of the proposed subprojects are assessed in accordance with relevant Chinese laws and regulations and the requirements of related environmental and social standards in the World Bank's Environmental and Social Framework (ESF), and the impacts and risks are as follows:
    - Assessment and Management of Environmental and Social Risks and Impacts (ESS1);

4 "Project related facilities" in this report refer to those facilities that are not within the scope of project financing, but are directly and significantly related to Batch 1 subprojects, are constructed simultaneously or planned to be constructed simultaneously, and are necessary for their feasibility. By identification and screening, it is determined that the related facilities of Batch 1 subprojects include Weinan WTE Plant, Chengcheng WTE Plant and Baoji WTE Plant.

- Labor and Working Conditions (ESS2);
- Community Health and Safety (ESS4);
- Land Acquisition, Restrictions on Land Use and Involuntary Resettlement (ESS5);
- Stakeholder Engagement and Information Disclosure (ESS10).

- Formulating and implementing stakeholder engagement plans (including GRM) and improving the project design and impact/risk mitigation measures and actions based on the comments and suggestions proposed by various stakeholders in Meaningful Consultations.
- Learning the attitudes of local communities (especially those surrounding the sites (WTSs, landfills, etc.) to and concerns about the proposed subprojects, and providing a basis for identifying potential social impacts and risks, and developing more effective mitigation measures;
- Putting forward suggestions for mitigating relevant social impacts and risks according to the SIA results to ensure that relevant subprojects can meet the relevant environmental and social standards of the World Bank and relevant Chinese laws and regulations within a reasonable period;
- Having adequate communication with the owner to clarify risk mitigation measures, scheme optimization and scheme suggestions, and formulating schedules for the implementation of measures and actions;
- Developing a social management plan (SMP), clarifying the organizational arrangements, staffing, fund arrangement, monitoring, and reporting for the social management implementation of the proposed subprojects.

1.5 SIA Process and Method

From March to August 2022, the SIA unit, with the active cooperation of the Shaanxi PMO, district/county PMOs and PIUs, carried out field investigations in the project area. The specific processes are as follows (See Figure 1-1):

1) The SIA starts with the by analyzing the project activities (Section 2), which is essential to identify the nature of the social risks and impacts, identify the elements that would interact with the social receptors, primarily analyze the relevance of relevant ESSs, and define a targeted scope of social baseline studies and the regulatory framework analysis.
2) Based on the social audit of existing facilities and completed land acquisition (Social Audit), the analysis of the project activities, and the social risk screening of proposed investment activities (Social Screening), the SIA unit screened the relevance of ESSs, identified the social impacts

and risks related to Batch 1 subprojects and determined the scope of analysis (Scoping).

3) Based on the project description and the social impacts and risks identified, the SIA unit analyzed the relevance and applicability of China's existing regulatory framework and related environmental and social standards (ESSs), as well as gap-filling measures (Section 4), and conducted targeted social baseline surveys (Section 3). Both the baseline surveys and the regulatory framework form the basis of a solid social risks screening and scoping (Section 5).

4) Following the scoping, the consultants carried out targeted surveys and stakeholder engagement (section 6) to inform the risk assessment and mitigation. Stakeholder engagement ran through the entire assessment process, as well as the implementation and monitoring & assessment of social measures after project approval. The project developed a stand-alone Stakeholder Engagement Plan (SEP) to manage the information disclosure and stakeholder engagement, consistent with the ESS10.

5) The SIA unit assessed the potential social risks and impacts that were significant and related to the proposed subprojects, focused on the analysis of significant impacts and risks, and proposed project design optimization suggestions and impact/risk mitigation measures, based on which a social management plan was formed. The risk assessment and optimization are an iterative and integral process while considering various measures to find better options.

6) After the risks and impacts assessment and mitigation process, the SIA unit summarized all the actions in a tabular form by activities and counties (Section 8), which are more convenient for the PMOs to refer to and use.

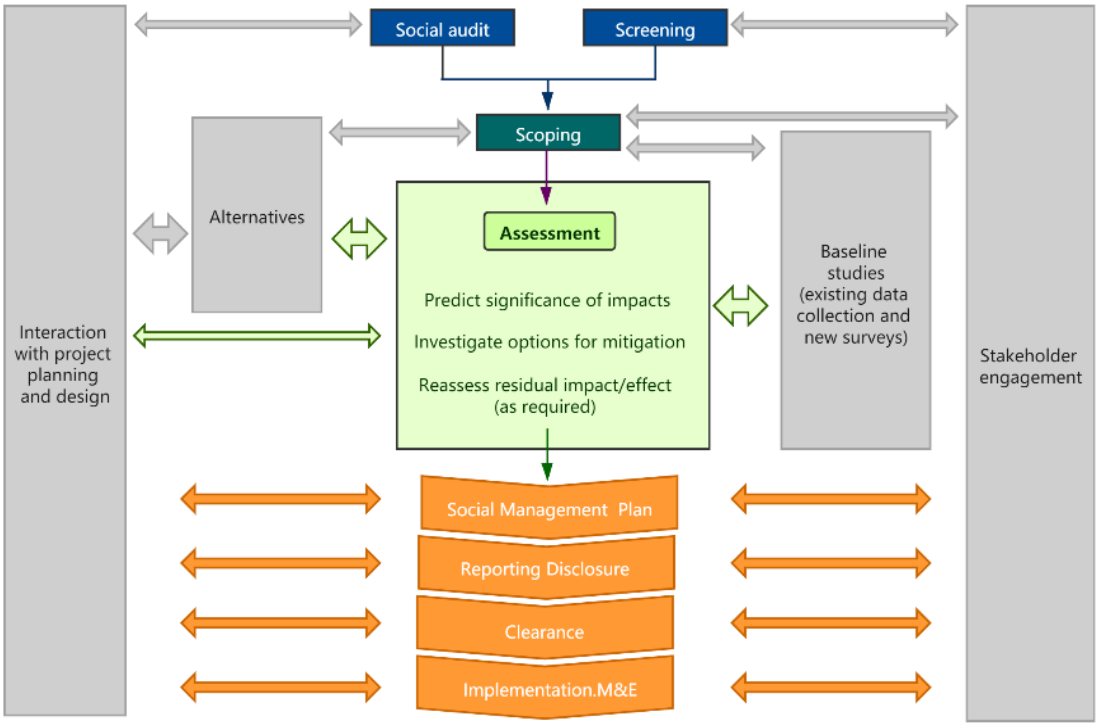

Figure 1-4 SIA Approach

The **survey methods** adopted in the project SIA are as follows:

1) Literature review

The SIA unit searched for information on project construction and social stability by means of the Shaanxi PMO, county / district PMOs, PIUs, government agencies concerned, and online search engines, such as project approval documents, special reports, social stability documents, relevant management systems, approval documents for land acquisition, LAR compensation documents, etc.

2) Field visit

Based on the review of collected data, the SIA unit conducted field visits to the districts and counties and proposed activity sites of Batch 1 subproject to learn nearby E&S sensitive points, identify potential social risk factors, and evaluate on-site management level through site observations.

In addition, the SIA unit also interviewed communities and residents around major existing facilities to learn their attitudes, opinions and suggestions.

3) Interview with government agencies concerned

The SIA unit interviewed government agencies concerned (mainly including county / district natural resources bureaus, health commissions, etc.) with great

influence on the Project by interview, telephone, etc. to learn their requirements for facility land, OHS, etc.

4) Key informant interview

The SIA unit interviewed key informants (mainly including PIUs, competent authorities, owners of Project-related facilities, third party managers, feasibility study agency, EIA agency, township governments, village committees, etc.) by fieldwork, online meeting, etc. to learn existing waste collection, transfer and disposal systems, and E&S risks of existing facilities (including LAR, OHS, community health and safety, traffic safety, NIMBY, etc.), existing institutions and management measures, and suggestions on managing E&S risks.

5) FGD

The SIA unit held FGDs with workers of existing facilities, community workers, nearby community residents, school faculties, etc. to learn about their existing working conditions, working hours, overtime conditions, remunerations, OHS training, labor protection, physical checkup, and concerns about and suggestions on facility site selection, construction and operation noise, odor and traffic safety risks, etc. 42 FGDs were held with stakeholders, with 528 person-times in total, to learn their needs, impacts, and opinions and suggestions.

6) Questionnaire survey

With the support of the county / district PMOs, the SIA unit also conducted a questionnaire survey on local residents (where urban residents include officials, teachers, property management staff, cleaners, residents, enterprise workers, etc.; rural residents include officials, cleaners, transfer workers, farmers, etc.) to learn attitudes to and suggestions on waste separation, waste facility site selection, etc. The survey covers 1,008 urban respondents and 1,768 rural residents in 96 villages / communities in 41 townships / sub-districts.

7) Consultation Workshop

Based on the results of the social audit and SIA, the SIA unit has communicated and discussed with the Shaanxi PMO, District/County PMOs, PIUs, the Designer, EIA units, and relevant government departments (such as the natural resources bureau, agriculture and rural development bureau, ecological and environmental protection bureau, etc.) on the risks in land use, labor and working conditions, community health and safety and corresponding mitigation measures and determined feasible solutions that comply with Chinese laws and regulations, the World Bank's ESF and good international practices.

1.6 Limitations

The Project involves many districts and counties and covers a wide scope. The SIA is carried out simultaneously with the project feasibility study, which is still in its preliminary stage when the SIA Report is prepared. The SIA is based on the data and information provided by the Shaanxi PMO, District/County PMOs and PIUs, as well as the field surveys and consultation by the SIA unit during the SIA. Any change in the scope of proposed investment activities, or other relevant information such as project design, composition, and service procurement may affect the analysis, assessment, and conclusions of the SIA Report.

The outbreak of COVID-19 in Xi'an during the SIA has limited extensive field surveys and face-to-face community engagement. This may affect the depth and breadth of social risk analysis to a certain extent.

Due to time constraints, the review of documents (e.g., labor contracts) is conducted by random sampling. The sampling is intended for risk screening through the verification of the current situation instead of a comprehensive document review.

Only scanned copies instead of original documents of most permits and approvals have been provided for review. The SIA unit assumes that these scanned documents are accurate and reliable unless written documents or field surveys contradict this assumption.

1.7 Report Structure

The SIA Report mainly includes the following parts:

- **Chapter I** is an overview mainly introducing the project background, objectives, methods, and scope of the SIA.
- **Chapter II** is the project introduction. It mainly introduces the location, service scope, specific activities, employment, and land use of each subproject, and analyzes the environmental and social sensitive points of each subproject;
- **Chapter III** is the policy framework. It compares relevant Chinese laws and regulations with the World Bank's Environmental and Social Standards (ESSs), and analyzes the policy applicability in the Project;
- **Chapter IV** is the baseline analysis. It analyzes the social and economic development of Batch 1 subproject districts and counties (Linwei, Chengcheng, Chencang, and Baoji) and the community-level social background information related to the proposed subprojects;
- **Chapter V** is the identification and analysis of stakeholders. For the stakeholders of the proposed subproject, it describes the information

disclosure and participation completed in the early stage, and plans the future information disclosure and consultation activities;

- **Chapter VI Social Risk Assessment and Mitigation & Strengthening Measures.** Analyze the relevant social impacts and risks identified according to the requirements of the relevant World Bank's Environmental and Social Standards (ESSs), put forward corresponding mitigation measures, and propose relevant suggestions on the optimization of the project scheme and the inclusive arrangement of vulnerable groups; (project design optimization and social risk mitigation)
- **Chapter VII Social Management Plan.** It formulates the corresponding implementation plan according to the risk mitigation and benefit enhancement measures in Chapter VI;
- **Chapter VIII Implementation, Monitoring, Evaluation and Budgeting.** It proposes the monitoring, evaluation and budgeting during the implementation phase.
- **Annexes:** including LMP and records of public participation of the Batch 1 subprojects.

2 Project Description

As mentioned above, the project districts/counties of the Batch 1 Subprojects include **Linwei District, Chengcheng County in Weinan City, Chencang District in Baoji City, and Baoji City**. The main activities of the Project include the construction of domestic waste collection facilities (including waste bins and vehicle procurement), transfer facilities (including vehicle procurement, parking & maintenance centers for collection and transfer trucks), and sorting centers, as well as the closure of domestic waste landfills (including the reconstruction of landfill leachate treatment plants).

The Batch 1 subprojects will explore the development of an urban and rural integrated waste service pattern to promote the extension of urban waste treatment facilities and capacities to cover rural areas, build a full-chain domestic waste management system integrating urban and rural sanitation facilities, realize the vision of domestic waste reduction, resource utilization, harmless disposal, sustainable development and equal service level in urban and rural areas, enhance the integrated, systematic and synergic waste management and environmental protection, and explore the mode of urban and rural ecological environmental protection and high-quality development.

2.1 Linwei District Subproject

The main civil construction activities of the Batch 1 subprojects in Linwei District (Linwei District Subproject) consist of: the construction or reconstruction of 8 domestic waste transfer stations; the construction of 1 new waste sorting center, and the closure of the Majiagou Landfill. In addition, Linwei District Subproject also involves the construction and installation of front-end facilities such as village-level collection points/urban sorting pavilions and the procurement of waste collection and transfer facilities.

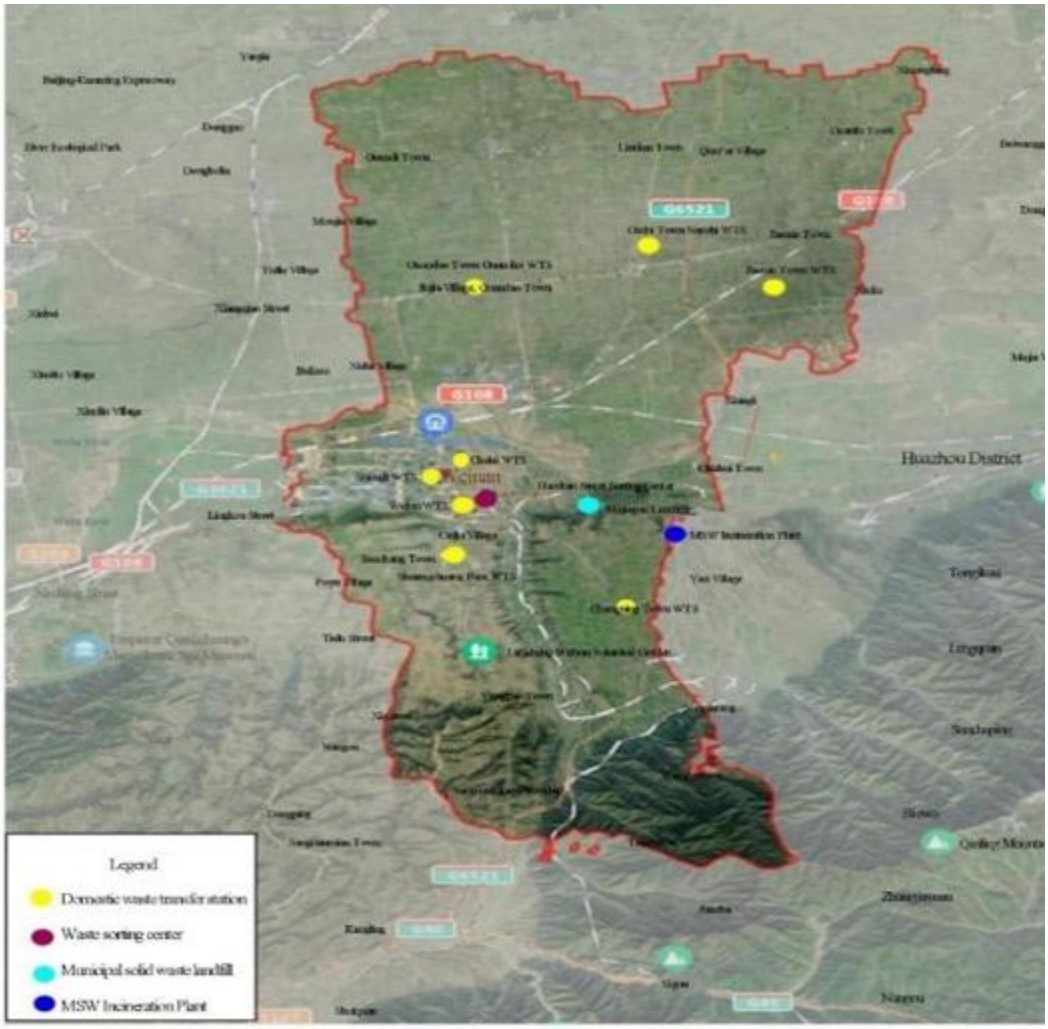

Figure 2-1 Distribution of Main Activities of Linwei District Subproject

The detailed activities of Linwei District Subproject are as follows:

2.1.1 Linwei Collection Facility

Linwei District Subproject involves the construction of 510 waste collection points (each provided with 9 waste bins) in rural areas and 500 community waste sorting pavilions (each provided with 2 other waste bins, 2 recyclable waste bins, 2 kitchen waste bins and 1 hazardous waste bin) in urban areas. Such facilities will mainly involve installation works with a few civil construction activities.

2.1.2 Transfer Facilities of Linwei District Subproject

(1) Basic information

The activities for transfer facilities of Linwei District mainly include the reconstruction/construction of 8 waste transfer stations (WST) and the procurement of forty-three 3t compression and transfer trucks (village/community to WTS) and twenty-one 12t box hook arm trucks (WTS to

waste-to-energy (WTE) plant). See Table 2-1 for details of the reconstruction/construction of transfer stations in Linwei District.

The WTSs are equipped with deodorization systems composed of a deodorant spray deodorization device and an activated carbon adsorption deodorization system. In addition, the large and medium WTSs with a compression capacity of ≧ 150t/d are provided with independent air extraction and exhaust systems.

Table 2-1 Reconstruction/Construction of WTSs in Linwei District

S/N	WTS	Construction nature	Location	Design scale	Target population	Main works	Transportation works	Utilities	Environmental protection works
1	Chelei WTS	Reconstruction on original site	Southwest of the intersection between Chelei Street and Jinshui Road	200t/d	130000	The WTS covers a land area of about 4,671m^2 and has a floor area of 2,042.52m^2. It involves the construction of one (1) set of 200t/d fixed compression equipment adopting the horizontal compression process;	Four (4) 12t transfer trucks are configured for the waste transfer with a haul distance of 21.2km from the WTS to Weinan WTE Plant through the existing municipal roads at a frequency of 3 times per day.	Power supply: The WTS is supplied with power from the municipal power grid through the three-phase four-wire system; Water supply: The WTS is supplied with water from the municipal tap water pipeline; Drainage: The WTS is set up with sewage drainage ditches (pipes), and rainwater is directly discharged into the rainwater pipes of nearby towns.	A 35~55m^2 supporting sewage storage tank is set up to collect the leachate generated in compression and the workshop flushing water, which will regularly be delivered by sewage suction trucks to the Weinan Leachate Treatment Plant for treatment; a 4~6m^2 septic tank is set up to collect domestic sewage, which will be discharged through the municipal pipe network to Weinan Municipal Domestic Sewage Treatment Plant for treatment; the deodorization device adopts a deodorant spray
2	Shengli WTS	Reconstruction on original site	Northwest corner of the intersection between Cangcheng Road and Shengli Street	100t/d	105000	The WTS covers a land area of about 913m^2 and has a floor area of 422m^2. It involves the construction of one (1) set of 100t/d fixed compression equipment adopting the horizontal compression process;	Three (3) 12t transfer trucks are configured for the waste transfer with a haul distance of 21.5 km from the WTS to Weinan WTE Plant through the existing municipal roads at a frequency of 3 times per day.		
3	Weilan WTS	Reconstruction on original site	North of Hanma Gas Station on Weilan Road	100t/d	90000	The WTS covers a land area of about 1,786 m^2 and has a floor area of 434 m^2. It involves the	Three (3) 12t transfer trucks are configured for the waste transfer with a haul distance of 20.6 km from the WTS to Weinan WTE Plant through		

S/N	WTS	Construction nature	Location	Design scale	Target population	Main works	Transportation works	Utilities	Environmental protection works
						construction of one (1) set of 100t/d compression equipment adopting the horizontal compression process;	existing municipal roads at a frequency of 3 times per day.		deodorization system.
4	Guandao Town Guandao WTS	Newly constructed	Lijia Village, Guandao Town	80t/d	99353	The WTS covers a land area of about 1,396 m^2 and has a floor area of 320 m^2. It involves the construction of one (1) set of 80t/d compression equipment adopting the horizontal compression process;	Three (3) 12t transfer trucks are configured for the waste transfer with a haul distance of 34.1 km from the WTS to Weinan WTE Plant through the existing municipal roads at a frequency of 2 times per day.		
5	Gushi Town Nanshi WTS	Newly constructed	50m northwest of Nanshi Agricultural Materials Distribution Department, Nanshi Township, Gushi Town	80t/d	71636	The WTS covers a land area of about 1,969 m^2 and has a floor area of 320 m^2. It involves the construction of one (1) set of 80t/d compression equipment adopting the horizontal compression process;	Two (2) 12t transfer trucks are configured for the waste transfer with a haul distance of 38 km from the WTS to Weinan WTE Plant through the existing municipal roads at a frequency of 2 times per day.		

S/N	WTS	Construction nature	Location	Design scale	Target population	Main works	Transportation works	Utilities	Environmental protection works
6	Jiaoxie Town WTS	Newly constructed	Xinzhai Village, Jiaoxie Town	60t/d	52883	The WTS covers a land area of about 1,852m^2 and has a floor area of 320 m^2. It involves the construction of one (1) set of 60t/d compression equipment adopting the horizontal compression process;	Two (2) 12t transfer trucks are configured for the waste transfer with a haul distance of 40.6 km from the WTS to Weinan WTE Plant through the existing municipal roads at a frequency of 1.5 times per day.		
7	Shuangchuang Base WTS	Newly constructed	Sanzhao Village, Sanzhang Town	80t/d	81508	The WTS covers a land area of about 1,710m^2 and has a floor area of 320 m^2. It involves the construction of one (1) set of 80t/d compression equipment adopting the horizontal compression process;	Three (3) 12t transfer trucks are configured for the waste transfer with a haul distance of 25.3 km from the WTS to Weinan WTE Plant through the existing municipal roads at a frequency of 2 times per day.		
8	Chongning Town WTS	Newly constructed	Xianwang Village, Chongning Town	60t/d	54158	The WTS covers a land area of about 1793.3 m^2 and has a floor area of 320 m^2. It involves the construction of one (1) set of 60t/d compression equipment	One (1) 12t transfer truck is configured for the waste transfer with a haul distance of 17.4 km from the WTS to Weinan WTE Plant through the existing municipal roads at a frequency of 3 times per day.		

S/N	WTS	Construction nature	Location	Design scale	Target population	Main works	Transportation works	Utilities	Environmental protection works
						adopting the horizontal compression process;			

Source: Feasibility Study Report (August 2022) and site survey

(2) Typical Layout Plan of WTS

The domestic waste transfer station is planned to be equipped with one (1) set of waste compression equipment, which may be either fixed or mobile type according to the compression process. The WTS is designed with a management room, lounge, public restroom, and other associated buildings, all in a single-story frame structure. The layout of domestic waste transfer stations is basically the same and the typical layout plan of WTS is shown in Figure 2-2.

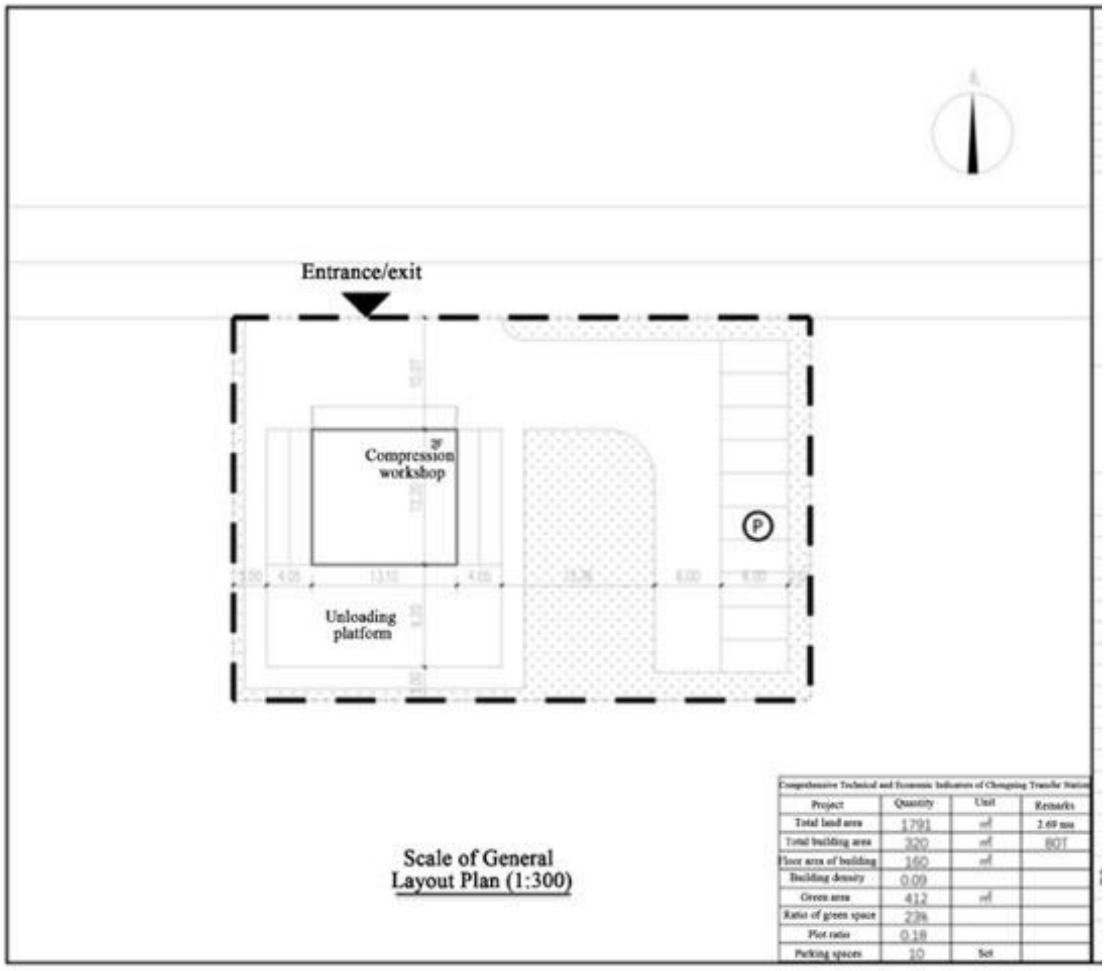

Figure 2-2 Typical Layout Plan of WTS

Figure 2-3 Rendering of As-built WTS

(3) Process flow of WTSs

Linwei District Subproject mainly involves the construction of compression WTSs, including fixed and mobile compression WTSs.

- **Fixed compression WTSs**

① Receiving: Under the guidance of traffic lights, the collection truck enters Basement 1 and gets close to the designated unloading parking space for unloading waste to the feed mechanism of the compressor. The high-speed roller shutter door in the unloading room opens quickly after the automatic detection of the collection truck. When the truck stops stably, the dust removal and deodorization system located on the side of the unloading chute automatically starts to work.

② Feeding: After being unloaded into the feed mechanism, the waste in the feed hopper of the compressor is dumped into the storage hopper and then pushed into the waste compressor by the pushing device below the storage hopper. The pushing head runs in a continuous cycle. When the waste container is full, the blue indicator light will be on, and the final compression program will be initiated. Then the pushing head will automatically increase the compression force and further compact the waste.

③ Container alignment: After the hook arm truck returns to the station, it will lift up the sealing surface of the empty waste container tailgate and then place the waste container on the guide rail device in front of the compressor, so that the empty container can be docked with the compressor. The push-pull device of the compressor automatically pulls and incorporates the empty container into the

compressor, the locking device automatically tensions and locks the waste container and the compressor, and the door lifting device automatically lifts the feeding door of the empty container. At this time, the container is docked with the compressor, so the unloading and compression loading can be carried out.

④ Compaction: The waste pushed into the compressor is pushed into the container by the pushing head of the compressor, and the waste is compacted. When it is detected that the lateral pressure of the container reaches the compaction pressure, the compression head will further compress with the maximum pressure and maintain such pressure for a certain period of time. Finally, the compression head retracts and the feeding door is immediately lowered to completely seal the container.

⑤ Hoisting: The automatic push-pull device and the positioning locking device loosen the lock between the container and the compressor. The container is pushed away for a certain distance and then lifted up by the hook arm truck, which will transport the waste to the domestic waste disposal terminal for disposal.

See Figure 2-4 for the schematic diagram of the transfer process flow for the fixed compression transfer station.

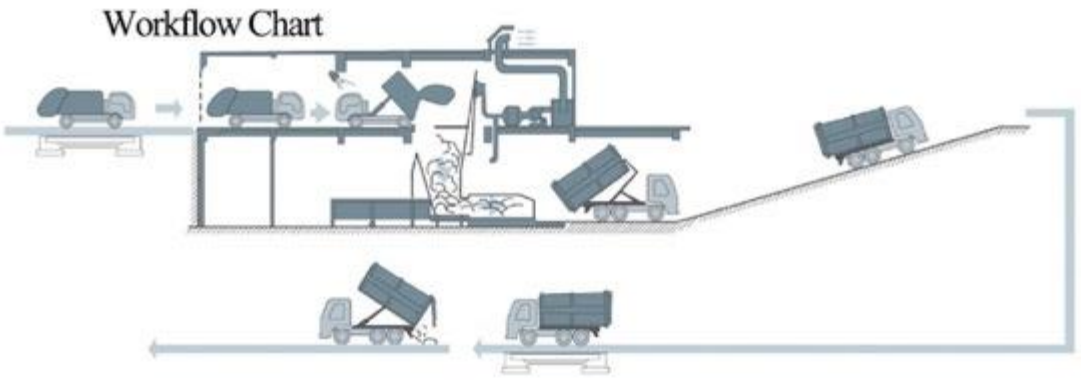

Figure 2-4 Schematic Diagram of Transfer Process Flow for Fixed Compression WTSs

- **Mobile compression WTSs**

① Feeding: The collection truck (or manpower tricycle) filled with waste enters the WTS, reverses and stops at the unloading parking space on the unloading platform, and unloads the waste to the hopper in front of the compressor. The feed mechanism lifts and turns the hopper to dump the waste from a high place into the waste container through the inlet at the container top.

② Compaction: The scraper in the compressor rotates for primary rolling compression and then moves horizontally for secondary horizontal compression. When the system sends out a fully-loaded alarm, the compressor will return in place. Extrusion sewage flows into the sewage collection facilities in the plant area through the sewage ditch.

③ Transfer: After waste is fully compressed, the mobile waste compression box will send a full-box signal, and the compressor will automatically stop compressing the waste. At this time, the hook arm truck will move in to connect with the mobile waste compressor; the whole mobile waste compressor filled with waste will be hooked on the transport vehicle and transported to the waste disposal terminal for disposal.

See Figure 2-5 for the schematic diagram of the transfer process flow for the mobile compression transfer station.

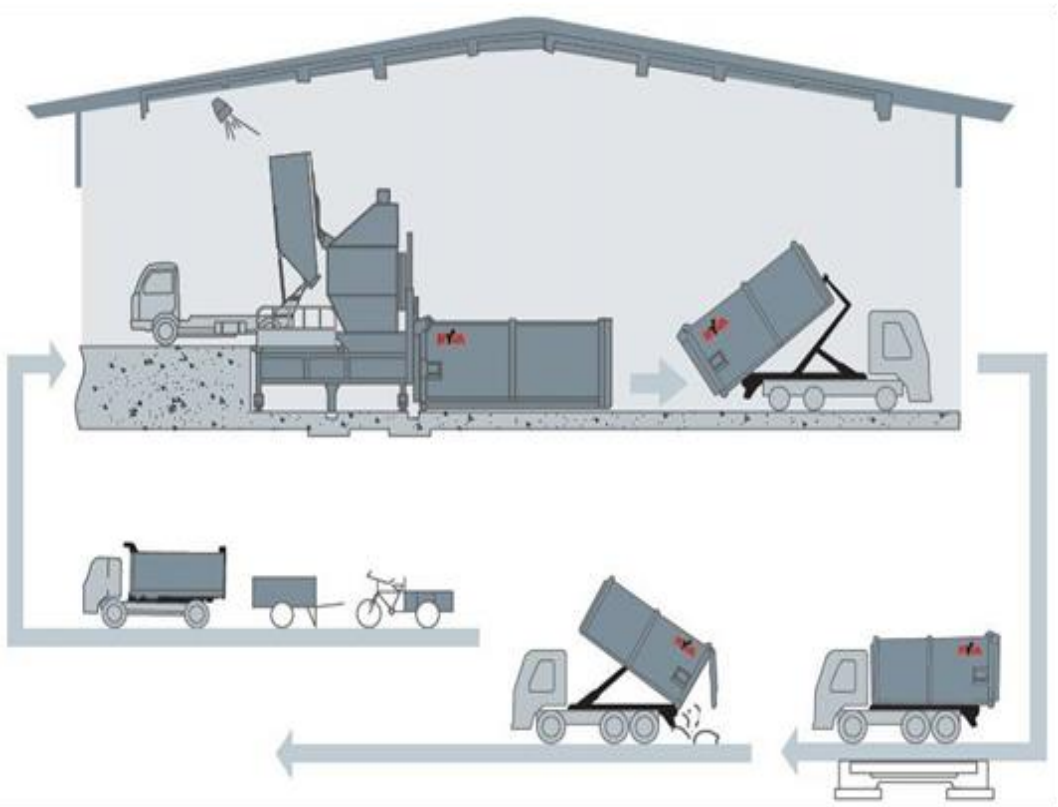

Figure 2-5 Schematic Diagram of Transfer Process Flow for Mobile Compression WTSs

2.1.3 Linwei Sorting Facilities

- **Basic information**

One sorting center will be built for the Linwei Subproject. The sorting center is located in the middle section of Huashan Street in Linwei District. It is proposed to build new buildings such as a temporary waste storage area, a sorting workshop,

a temporary storage area for sorting, a comprehensive building and a guard room, covering a land area of about 7,697m^2. The layout plan of the sorting center is shown in Figure 2-6.

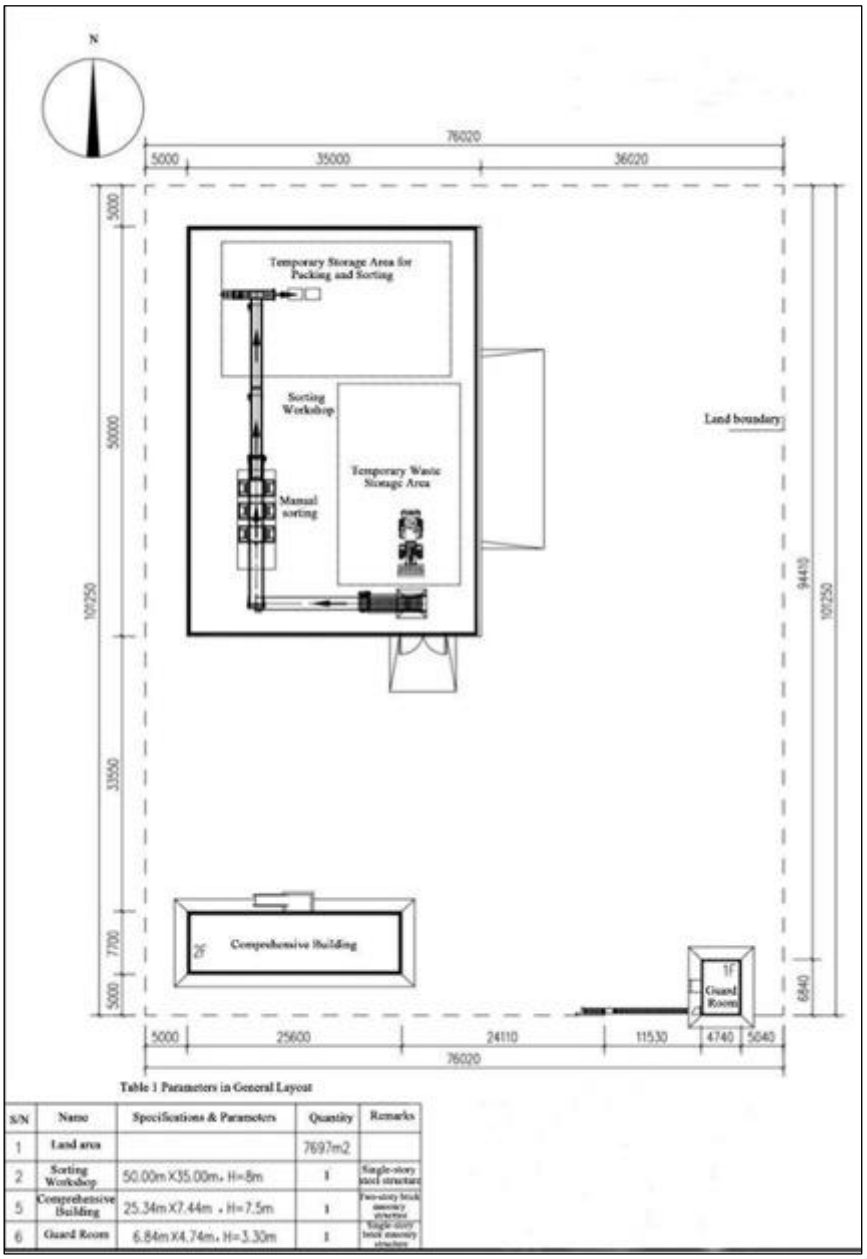

Table 1 Parameters in General Layout

S/N	Name	Specifications & Parameters	Quantity	Remarks
1	Land area		7697m2	
2	Sorting Workshop	50.00m X35.00m, H=8m	1	Single-story steel structure
5	Comprehensive Building	25.34m X7.44m , H=7.5m	1	Two-story brick masonry structure
6	Guard Room	6.84m X4.74m, H=3.30m	1	Single-story brick masonry structure

Figure 2-6 Layout Plan of Domestic Waste Sorting Center in Linwei District

2.1.4 Process Flow for Sorting Center

The recyclable waste is transported to the sorting center by transport vehicles and stacked in the temporary waste storage area. After the large waste is preliminarily sorted out, it is transported upward to the manual sorting platform through a belt. After the waste is sorted, the staff puts it into the sorting port. The high-value recyclables such as plastics, paperboards and metals are classified and packed in batches with a packer for temporary storage.

See Figure 2-8 for the specific process flow.

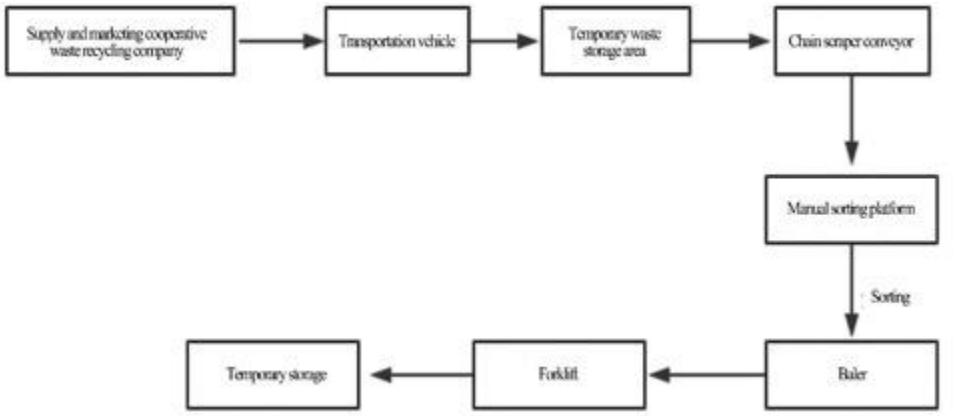

Figure 2-7 Sorting Process Flow for Waste Sorting Center

2.1.5 Terminal Disposal Facilities for Linwei District Subproject

(1) Basic information

The closure of Majiagou domestic waste landfill is the Linwei terminal disposal works. See Table 2-2 for the main construction contents for the closure of the Majiagou domestic waste landfill.

Table 2-2 Main Construction Contents for Closure of Majiagou Landfill

Location	Main works	Auxiliary works	Environmental protection works
Majiagou, Xiangyang Subdistrict	① **Closure Works:** disposal of waste dump, final covering and seepage control system, rainwater drainage system, leachate collection and drainage system and landfill gas collection system. ② **Upgrading and reconstruction of leachate treatment plant:** A set of 100t/d concentrated solution treatment equipment is added, and the low-temperature negative pressure MVR evaporation process is adopted, i.e. "modified coagulating sedimentation + low-temperature vacuum evaporation + membrane filtration + solidification". The solidified crystalline salt sludge is sent to the domestic waste landfill for landfill, and the leachate is discharged from the existing pipe network after being treated up to the standard.	Ecological restoration works: the average thickness of the closure soil layer is designed to be 0.5m, and lawns, ornamental vegetations and flowering shrubs are planted; Power supply: The WTS is supplied with power from the municipal power grid through the three-phase four-wire system; Water supply: The water is supplied by municipal tap water pipes to meet the requirements of dust suppression and cleaning water in the site. Drainage: After closure, rainwater flows into the	Wastewater: A gas gathering and liquid drainage well is built to collect leachate which is discharged into the existing Majiagou leachate treatment plant of the landfill for treatment. Waste gas: After being collected by the landfill gas collection system, it is sent to the existing Majiagou Landfill Gas Power Generation Project for power generation.

Location	Main works	Auxiliary works	Environmental protection works
		downstream nearby rainwater pipeline through the rainwater drainage system; Transportation road: supported by the existing landfill roads;	

Source: Feasibility Study Report (August 2022) and site survey

(2) Works contents and relevant processes

The construction contents of the closure works include side slope shaping for waste dump, final covering, leachate collection, drainage and treatment, landfill gas collection, drainage and treatment, surface water collection, drainage, ecological restoration and utilization and auxiliary facilities works. The details are shown as follows:

A. Shaping for waste dump: mainly including finishing of the platform at the top of the dump; finishing at the slope toe of the dump; trimming of the side slope for the dump; construction of the anchoring platform.
B. Final covering works: mainly including exhaust layer, impervious layer, drainage layer and vegetation layer.
C. Rainwater drainage system for closure: the platform drainage system and an open drainage ditch around the landfill area are adopted to drain rainwater. The section of the drainage ditch around the landfill area in the periphery of the waste dump is designed to be 0.6~1.0×0.5~0.6 (m), and the section of the platform drainage ditch in the landfill is designed to be 0.5~0.6×0.5~0.6 (m). The rainwater collected by the platform drainage ditch is transported to the drainage ditch around the landfill, and the rainwater collected by the drainage ditch is finally discharged through the existing off-site rainwater drainage system.
D. Leachate drainage and treatment system: including horizontal collection and drainage system and vertical collection and drainage system. The collected leachate is sent to the leachate treatment station of the existing landfill for treatment through the leachate regulating tank of the existing landfill, and a small amount of concentrated solution generated after treatment is recharged to the landfill for treatment, or treated by the concentrated solution treatment system of the leachate treatment plant.
E. Landfill gas drainage system: Active drainage facilities are provided for the closure of Majiagou. The landfill gas is exported to the existing landfill gas power plant for power generation.

F. Ecological restoration scheme: For ecological restoration, by comprehensively considering the ecological benefits for plant growth and the later maintenance cost, plants are selected and local shallow-rooted plants are used to build plant communities. After ecological restoration, pesticides and fertilizers will not be sprayed. After ecological restoration, it will be used as a green field without development planning, and closed for no access of people.

(3) Upgrading and reconstruction of landfill leachate treatment plant

During the closure of Majiagou Landfill, the existing Majiagou Leachate Treatment Plant is upgraded and reconstructed, and a 100t/d concentrated solution treatment plant is added.

The leachate treatment capacity of Majiagou Leachate Treatment Plant is 250t/d, and the treatment process is "MBR+DTRO". The treated effluent quality meets the discharge limit of the *Standard for Pollution Control on the Landfill Site of Municipal Solid Waste* (GB16889-2008), and the concentrated solution generated by treatment is recharged to Majiagou Landfill. The concentrated solution evaporation process is added in this upgrading and reconstruction, and the process of "pretreatment coagulating sedimentation + low-temperature vacuum evaporation + membrane filtration + solidification" is adopted.

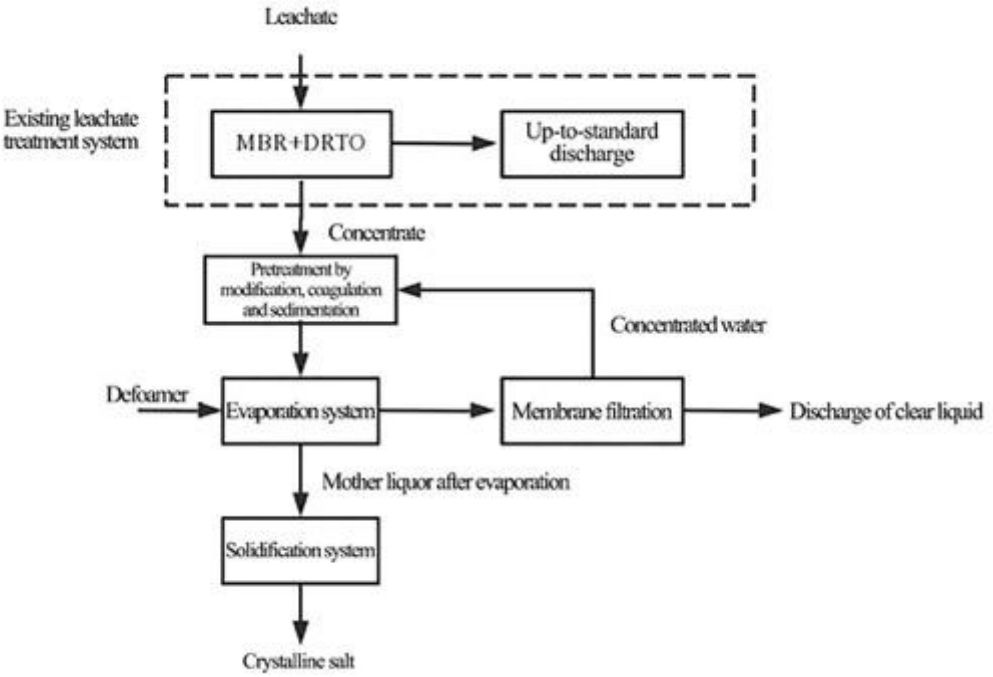

Figure 2-8 Flow Chart of Concentrated Solution Treatment in Majiagou Leachate Treatment Plant

2.2 Chengcheng County Subproject

For the Batch 1 subprojects in Chengcheng County (Chengcheng County Subproject), 9 new town-level WTSs will be built, 2 domestic waste landfills will be closed, and collection and transfer trucks will be purchased.

The WTS includes Chengguan Town WTS in the fixed horizontal compression process, with management rooms and lounges; the remaining 8 WTSs in the mobile horizontal compression process are constructed, with management rooms, storage rooms, public toilets and lounges.

The closure works of domestic waste landfill include Yaotou Landfill and Chengcheng Landfill.

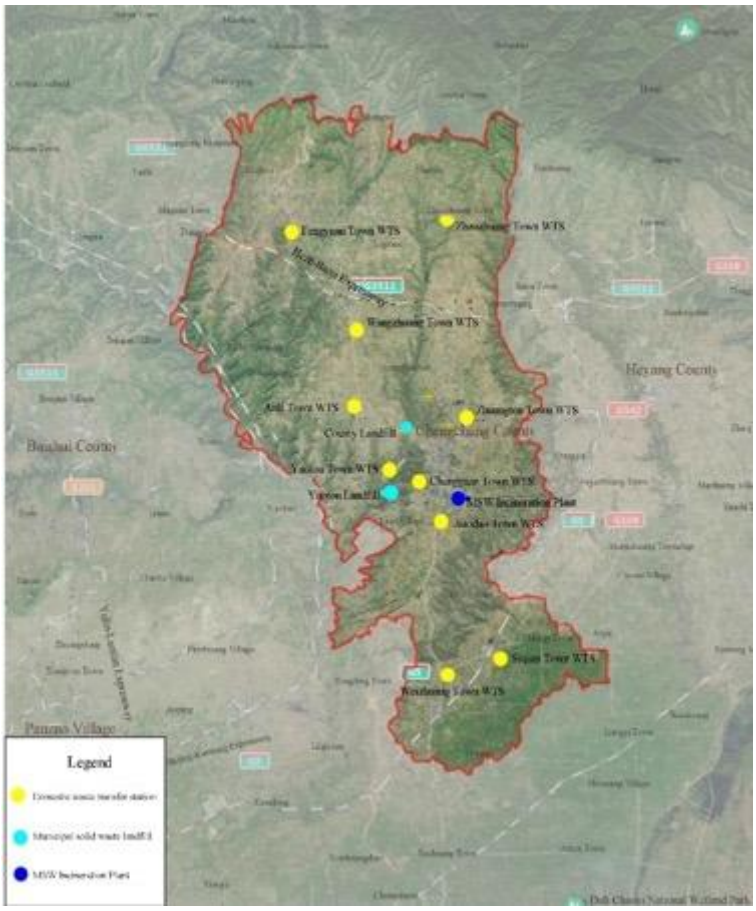

Figure 2-9 Distribution of Main Activities for Chengcheng County Subproject

The specific activities for Chengcheng County Subproject are as follows:

2.2.1 Transfer Facilities of Chengcheng County Subproject

(1) Basic information

The transfer facilities in Chengcheng County mainly include the construction of 9 new town-level WTSs and the purchase of forty 2t bucket-type transfer trucks (from villages/communities to the transfer station); two 14t box-type hook arm

trucks and nine 10t box-type hook arm trucks (from the urban transfer station to the incineration power plant); one 8t back-loading waste compression transfer truck; six 2t bucket-type transfer trucks (from villages to the incineration power plant). See Table 2-1 for details of new WTSs for the Chengcheng County Subproject.

The WTSs are equipped with deodorization systems composed of a deodorant spray deodorization device and an activated carbon adsorption deodorization system. In addition, the large and medium WTSs with a compression capacity of ≧ 150t/d are provided with independent air extraction and exhaust systems.

Table 2-3 List of New WTSs for Chengcheng County Subproject

S/N	Name of Transfer Station	Description of Works						
		Location	Design scale	Service population (person)	Main works	Transportation works	Public works	Environmental protection works
1	Chengguan Town WTS	Zhenji Village, Chengguan Subdistrict	100t/d	102333	It covers a land area of about 2000 ㎡ and has a floor area of 821.5 ㎡. It involves the construction of one (1) set of fixed compressor by the horizontal fixed compression process.	Two (2) 14t box hook arm truck is configured for waste transfer along the 14.3 km distance from the WTS to the WTE plant in Chengcheng County through the existing municipal roads.	Power supply: The WTS is supplied with power from the municipal power grid through the three-phase four-wire system; Water supply: The WTS is supplied with water from the municipal tap water pipeline; Drainage: The WTS is set up with sewage drainage ditches (pipes), and rainwater is directly discharged into the rainwater pipes of nearby towns.	A 10~15 ㎡ sewage storage tank is provided. The leachate generated by compression and workshop flushing water enter the sewage storage tank and are regularly transported to Chengcheng County Domestic Sewage Treatment Plant by sewage suction trucks for treatment. Septic tanks for domestic sewage are regularly transported to Chengcheng County Domestic Sewage Treatment Plant by sewage suction trucks for treatment. A
2	Fengyuanzhen Town WTS	Ji'ancheng Village, Fengyuan Town	20t/d	20085	The WTS covers a land area of about 1600 ㎡ and has a floor area of 471.15 ㎡. It involves the construction of two (2) sets of 10t mobile compression boxes by the horizontal compression process;	One (1) 10t box hook arm truck is configured for waste transfer along the 16.6km distance from the WTS to the WTE plant in Chengcheng County through the existing municipal roads.		
3	Jiaodao Town WTS	Jiaodao Town	20t/d	18991	The WTS covers a land area of about 1500 ㎡ and has a floor area of 471.15 ㎡. It involves the construction of two (2) sets of 10t mobile compression boxes by the horizontal compression process;	One (1) 10t box hook arm truck is configured for waste transfer along the 16.6km distance from the WTS to the WTE plant in Chengcheng County through the existing municipal roads.		
4	Wangzhuang Town WTS	Wangjiazhuang Village, Wangzhuang Town	20t/d	23555	The WTS covers a land area of about 1332 ㎡. It involves the construction of two (2) sets of 10t mobile compression boxes by the horizontal compression process;	One (1) 10t box hook arm truck is configured for waste transfer along the 33.6km distance from the WTS to the WTE plant in Chengcheng County through the existing municipal roads.		

S/N	Name of Transfer Station	Description of Works						
		Location	Design scale	Service population (person)	Main works	Transportation works	Public works	Environmental protection works
5	Weizhuang Town WTS	Weizhuang Village, Weizhuang Town	20t/d	27976	The WTS covers a land area of about 1332 ㎡ and has a floor area of 471.15 ㎡. It involves the construction of two (2) sets of 10t mobile compression boxes by the horizontal compression process;	One (1) 10t box hook arm truck is configured for waste transfer along the 29.2km distance from the WTS to the WTE plant in Chengcheng County through the existing municipal roads.		plant spray deodorization system is adopted for the deodorization device.
6	Yaotou Town WTS	Linzhuanghe Village, Yaotou Town	20t/d	5383	The WTS covers a land area of about 2000 ㎡ and has a floor area of 471.15 ㎡. It involves the construction of two (2) sets of 10t mobile compression boxes by the horizontal compression process;	One (1) 10t box hook arm truck is configured for waste transfer along the 24.7km distance from the WTS to the WTE plant in Chengcheng County through the existing municipal roads.		
7	Zhaozhuang Town WTS	Zhaozhuang Village, Zhaozhuang Town	20t/d	23570	The WTS covers a land area of about 2000 ㎡ and has a floor area of 471.15 ㎡. It involves the construction of two (2) sets of 10t mobile compression boxes by the horizontal compression process;	One (1) 10t box hook arm truck is configured for waste transfer along the 33.2km distance from the WTS to the WTE plant in Chengcheng County through the existing municipal roads.		
8	Zhuangtou Town WTS	Daizhuang Village, Zhuangtou Town	20t/d	30688	The WTS covers a land area of about 470.15m² and has a floor area of 471.15m². It involves the construction of two (2) sets of 10t mobile compression boxes adopting the horizontal compression process;	One (1) 10t box hook arm truck is configured for waste transfer with a haul distance of 13.8km from the WTS to the WTE plant in Chengcheng County through the existing municipal roads.		

S/N	Name of Transfer Station	Description of Works						
		Location	Design scale	Service population (person)	Main works	Transportation works	Public works	Environmental protection works
10	Siqian Town WTS	Beijie Village, Siqian Town	20t/d	25350	The WTS covers a land area of about 3,000m^2 and has a floor area of 471.15m^2. It involves the construction of two sets of 10t mobile compression boxes with the horizontal compression process;	One (1) 10t box hook arm truck is configured for waste transfer with a haul distance of 14.1km from the WTS to the WTE plant in Chengcheng County through the existing municipal roads.		

Source: Feasibility Study Report (August 2022) and site survey

(2) Typical layout and process flow of WTS

The typical layout and process flow of the transfer facilities of the Chengcheng County Subproject are similar to those of the Linwei District Subproject, which will not be repeated.

2.2.2 Terminal Disposal Facilities of Chengcheng County Subproject

(1) Basic information

Chengcheng County Subproject involves the closure of the Chengcheng Landfill and Yaotou Landfill. See Table 2-4 for the main construction scope of domestic waste landfill closure.

Table 2-4 Main Construction Scope of Domestic Waste Landfill Closure of Chengcheng County Subproject

S/N	Activity	Location	Main works	Auxiliary Works	Environmental protection works
1	Closure of Chengcheng Landfill	Xiaochanggou, Xihuan Road	Disposal of waste dump, final covering and seepage control system, rainwater drainage system, leachate collection and drainage system, landfill gas collection system and ecological restoration project.	Power supply: The WTS is supplied with power from the municipal power grid through the three-phase four-wire system; Water supply: The water is supplied by municipal tap water pipes to meet the requirements of dust suppression and cleaning water in the site. Drainage: After closure, rainwater flows into the rainwater pipeline near the downstream through the rainwater drainage system. **Transportation road:** supported by the existing landfill roads.	**Wastewater:** A gas gathering and liquid drainage well is built to collect leachate which is discharged into the existing leachate treatment plant of the landfill for treatment. After being treated up to the standard, the leachate is discharged, and the concentrated solution generated during treatment is recharged. **Waste gas:** After being collected by the landfill gas collection system, it is emitted from the combustion by the set flare.
2	Closure of Yaotou Landfill in Chengcheng County	Yaotou Village, Yaotou Town			

Source: Feasibility Study Report (August 2022) and site survey

(2) Works Content and Relevant Process

Except that the landfill gas is collected and discharged to the flare for emissions from combustion, the construction scope and related process of the closure of Chengcheng Landfill are similar to those of the closure of Linwei Landfill.

2.3 Chencang District Subproject

For the Batch 1 subprojects in Chencang District, Baoji City (Chencang District Subproject), 170 new rural waste collection points, 500 new urban domestic waste sorting and collection points and 32 new central domestic waste collection sites will be constructed, 5 domestic waste transfer stations will be constructed/reconstructed, new parking & maintenance centers for waste collection and transfer trucks will be constructed, and waste transfer trucks will be purchased.

Figure 2-10 Location Map of Main Transfer and Terminal Facilities of Chencang District Subproject

The activities of Chencang District Subproject are as follows:

2.3.1 Collection Facilities of Chencang District Subproject

(1) Waste collection points/sorting pavilions

The Chencang District Subproject involves the construction of 170 new waste collection points in rural areas and 500 new community waste sorting pavilions in urban areas. Such facilities will mainly involve installation works with a few civil construction activities.

(2) Central waste collection sites

Chencang District Subproject involves the construction/reconstruction of 32 Central waste collection sites, which service the villages nearby. According to the principle of cost-effective transfer and terrain features of Chencang District, the

waste from the central waste collection sites can be directly transported to the waste terminal disposal point (such as the WTE plant) or transferred to the new compression transfer station of the project, and then transferred to the waste terminal disposal point.

See Table 2-5 for the construction scope of collection facilities of Chencang District Subproject.

Table 2-5 Construction Scope of Collection Facilities of Chencang District Subproject

S/N	Construction Scale and Scope	Description of Works	
		Main works	Transportation works
1	Village-level collection points (rural areas)	Construction of 170 new waste collection points, each provided with 240L waste bins (rural)	Supporting 500 hanging bucket trucks
2	Domestic waste sorting pavilions (urban areas)	Construction of 500 new domestic waste sorting pavilions, each provided with 3 240L other waste bins, 1 240L recyclable waste bin, 1 240L kitchen waste bin and 1 240L hazardous waste bin(urban)	
3	Central waste collection sites (non-compression)	Construction of 30 new central waste collection sites and reconstruction of 2 central waste collection sites	According to terrain features, firstly transfer from the village-level collection point/sorting pavilion to the central waste collection site and then secondly transfer to the proposed compression transfer station for transfer

Source: Feasibility Study Report (August 2022) and site survey

2.3.2 Transfer Facilities of Chencang District Subproject

(1) Basic information

The activities for transfer facilities of Chencang District mainly include the reconstruction/construction of 5 waste transfer stations (WST) and the procurement of 3 20t transfer trucks, 7 12t compression and transfer trucks, 8 8t compression and transfer trucks, 3 12t mobile compression box hook arm trucks and 14 transfer site washing and sweeping vehicles, etc. See Table 2-6 for details of the reconstruction/construction of the WTSs of Chencang District Subproject.

The WTSs are equipped with deodorization systems composed of a deodorant spray deodorization device and an activated carbon adsorption deodorization system. In addition, the large and medium WTSs with a

compression capacity of ≧ 150t/d are provided with independent air extraction and exhaust systems.

Table 2-6 Reconstruction/Construction of WTSs of Chencang District Subproject

S/N	Subproject name	Construction Type	Location	Design scale	Service scope and target population	Main works	Transportation works	Utilities	Environmental protection works
1	Tuoshi Town WTS	Newly constructed	Mengjiayuan Village, Tuoshi Town	24t/d	26762	The WTS covers a land area of about 500m2. It involves the construction of two (2) sets of 12t compression boxes adopting the horizontal mobile compression process.	One (1) 12t compression truck is configured for waste transfer with a haul distance of 76km from the WTS to the WTE plant in Baoji City through the existing municipal roads at a frequency of 2 times per day.	Power supply: The WTS is supplied with power from the municipal power grid through the three-phase four-wire system; Water supply: The WTS is supplied with water from the municipal tap water pipeline; Drainage: The WTS is set up with sewage drainage ditches (pipes), and rainwater is directly discharged into the rainwater	A 7~27m² supporting sewage storage tank is set up to collect the leachate generated in compression and the workshop flushing water, which will regularly be delivered by sewage suction trucks to the Baoji Leachate Treatment Plant for treatment; a 4~6m² septic tank is set up to collect domestic sewage, which will be discharged through the municipal pipe network to Domestic Sewage Treatment Plant in Chencang District, Baoji City for treatment; the deodorization device adopts a deodorant spray deodorization system.
2	Xiangquan Town WTS	Newly constructed	Sunjia Village, Xiangquan Town	24t/d	24127	The WTS covers a land area of about 500m2. It involves the construction of two (2) sets of 12t compression boxes adopting the horizontal mobile compression process.	One (1) 12t compression vehicle is configured for waste transfer with a haul distance of 69km from the WTS to the WTE plant in Baoji City through the existing municipal roads at a frequency of 2 times per day.		
3	Xinjie Town WTS	Newly constructed	Xinjie Village, Xinjie Town	16t/d	16612	The WTS covers a land area of about 500m2. It involves the construction of two (2) sets of 12t compression boxes adopting the horizontal mobile compression process.	One (1) 12t compression truck is configured for waste transfer with a haul distance of 43km from the WTS to the WTE plant in Baoji City through the existing municipal roads at a frequency of 1.5 times per day.		
4	Dongguan Sub-district WTS	Newly constructed	Lugang Park, Dongguan Sub-district	45t/d	30185	The WTS covers a land area of about 500m². It involves the construction of one (1) set of fixed compression	One (1) 20t box hook arm truck is configured for waste transfer with a haul distance of 40km from the WTS to the WTE plant in Baoji City through the existing		

S/N	Subproject name	Construction Type	Location	Design scale	Service scope and target population	Main works	Transportation works	Utilities	Environmental protection works
						equipment adopting the horizontal fixed compression process.	municipal roads at a frequency of 2 times per day.	pipes of nearby towns.	
5	Qianwei Sub-district WTS	Newly constructed	Qianwei Square, Qianwei Sub-district	80t/d	62791	The WTS covers a land area of about 500m^2 and has a floor area of 300m^2. It involves the construction of one (1) set of fixed compression equipment adopting the horizontal fixed compression process.	Two (2) 20t box hook arm trucks are configured for waste transfer with a haul distance of 35km from the WTS to the WTE plant in Baoji City through the existing municipal roads at a frequency of 2 times per day.		

Source: Feasibility Study Report (August 2022) and site survey

(2) Typical layout and process flow of WTS

The typical layout and process flow of the transfer facilities of the Chencang District Subproject are similar to those of the Linwei District Subproject, which will not be repeated.

2.3.3 Waste Transfer Truck Parking & Maintenance Center of Chencang District Subproject

The Chencang District Subproject involves the construction of an 11,000m^2 waste transfer truck parking & maintenance center, including 15 parking spaces for 8t compression and transfer trucks, 15 parking spaces for 12t compression and transfer trucks, 15 parking spaces for 12t mobile compression box hook arm trucks, 5 20t box hook arm trucks, 300 for other sanitation vehicles, 30 charging piles, etc.

2.4 Baoji City (City-level)

The Batch 1 Projects in Baoji City (Baoji City Subprojects) is the closure of the Changshougou [5] Domestic Waste Landfill in Baoji City. The closure of the domestic waste landfills in Baoji City includes: 1) closure works and 2) upgrading and reconstruction works of the leachate treatment plant. See Table 2-7 for the main construction scope.

Table 2-7 Main Construction Scope of the Closure of Domestic Waste Landfill in Baoji City

Location	Main works	Auxiliary Works	Environmental protection works
Changshougou, Jinhe Town	① Closure works: Disposal of waste dump, final covering and seepage control system, rainwater drainage system, leachate collection and drainage system, landfill gas collection system, ecological restoration works ② Upgrading and reconstruction of leachate treatment plant: The leachate treatment station will be upgraded and reconstructed, with the addition of a two-stage denitrification filter and the replacement of a complete set of 270m^3/d ultrafiltration + nanofiltration + reverse osmosis (RO) device.	Power supply: The WTS is supplied with power from the municipal power grid through the three-phase four-wire system; Water supply: The water is supplied by municipal tap water pipes to meet the requirements of dust suppression and cleaning water in the site. Drainage: After closure, rainwater flows into the rainwater pipeline	Wastewater: A gas gathering and liquid drainage well is built to collect leachate which is discharged into the existing leachate treatment plant of the landfill for treatment; and then discharged into the municipal pipe network after being treated up to the standard. Waste gas: After being collected by the landfill gas

[5] Also known as Lingyuan Domestic Waste Landfill

Location	Main works	Auxiliary Works	Environmental protection works
		near the downstream through the rainwater drainage system. Transportation road: supported by the existing landfill roads;	collection system, it is sent to the existing landfill gas power generation project for power generation.

Source: Feasibility Study Report (August 2022) and site survey

Figure 2-11 Location Map of Batch 1 Subprojects in Baoji City

(2) Works Content and Relevant Process

The construction scope and related process of the closure of Baoji City Subproject are similar to those of the closure of Linwei Landfill.

(3) Upgrading and reconstruction of leachate treatment plant of Changshougou Landfill

The leachate from Changshougou Domestic Waste Landfill is treated by the existing Lingyuan Landfill Leachate Treatment Plant, with a design treatment capacity of 270m3/h. The treatment process is two-stage A/O biochemical method + external MBR ultrafiltration (UF) + nanofiltration (NF) + reverse osmosis (RO) process. The treated effluent quality meets the discharge limit of the *Standard for Pollution Control on the Landfill Site of Municipal Solid Waste* (GB 16889-2008) and is discharged into Shilipu Sewage Treatment Plant in Baoji City. The concentrated solution generated during treatment is recharged into Changshougou Domestic Waste Landfill.

During the closure of Baoji Changshougou Domestic Waste Landfill, the existing leachate treatment plant was upgraded and reconstructed, and a two-

stage denitrification filter was newly built to improve the treatment effect of ammonia nitrogen and total nitrogen; a complete set of 270m^3/d ultrafiltration + nanofiltration + reverse osmosis device was replaced. The sludge generated is dewatered by the existing sludge dewatering system, and the moisture content is less than 60% after dewatering, which is sent to Baoji Domestic Waste Incineration Plant for incineration. The concentrated solution generated by leachate treatment is stored in the concentrated solution tank and recharged to the waste landfill by the recharge pump.

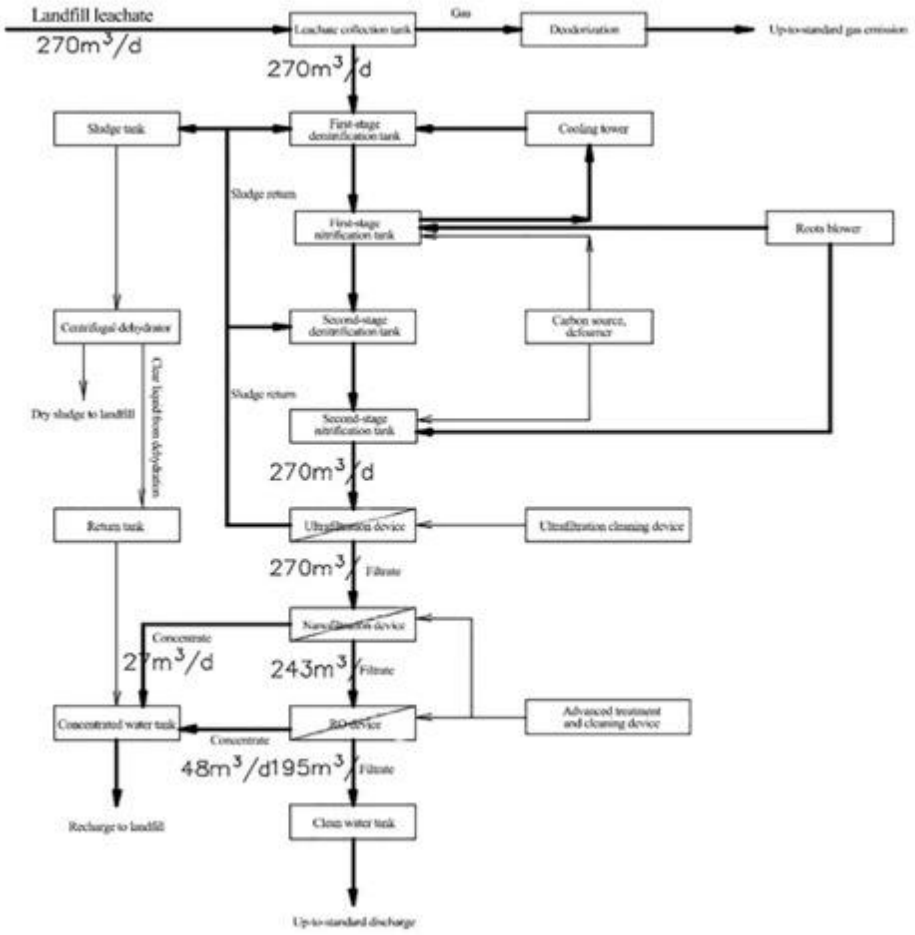

Figure 2-12 Flow Chart of Concentrated Solution Treatment in Baoji Changshougou Leachate Treatment Plant

3 Social and Economic Baseline

3.1 Social and Economic Profile of Shaanxi Province

Shaanxi Province, abbreviated as "Shaanxi" or "Qin", is located in the central hinterland of the Chinese Mainland. Since ancient times, it has been the capital of emperors. In nine unified dynasties, five capitals were in Xi'an (Xianyang). It is an important birthplace of the Chinese nation. Shaanxi Province has a total area of 205,800 square kilometers. By the end of 2021, Shaanxi Province had a permanent resident population of 39.54 million, with 10 prefecture-level cities (of which Xi'an, the provincial capital, is a sub-provincial city), 31 municipal districts, 7 county-level cities and 69 counties under its jurisdiction. Shaanxi Province is a province where ethnic minorities live scatteredly, with a total of 54 ethnic minorities and a permanent resident population of 190,000. The majority of them are Hui people, who are distributed all over the province, of which the urban population accounts for 80%.

In 2021, Shaanxi's annual GDP reached RMB 2,980.098 billion, an increase of 6.5% over the previous year. The added value of the primary industry was RMB 240.939 billion, up 6.3%, accounting for 8.1% of the GDP, that of the secondary industry was RMB 1,380.252 billion, up 5.6%, accounting for 46.3%, and that of the tertiary industry was RMB 1,358.907 billion, up 7.3%, accounting for 45.6%.

By the end of 2021, the province's permanent resident population was 39.54 million, down 10,000 from the previous year. There were 2018 million males, accounting for 51%, and 19.36 million females, accounting for 49%. The urban population was 25.16 million, accounting for 63.63%; the rural population was 14.38 million, accounting for 36.37%. The annual per capita disposable income of residents of the province was RMB 28,568, up RMB 2,342 or 8.9% over the previous year. The annual per capita disposable income of urban residents was RMB 40,713, an increase of RMB 2,845 or 7.5% over the previous year; the annual per capita disposable income of rural residents was RMB 14,745, an increase of RMB 1,429 or 10.7% over the previous year.[6]

3.2 Social and Economic Conditions of the First Project Districts and Counties

3.2.1 Social and Economic Conditions of Baoji

Baoji is located at the junction of Shaanxi, Gansu, Ningxia and Sichuan provinces (districts), with a total area of 18,117 square kilometers, including an

[6]Source: 2021 Statistical Bulletin of National Economic and Social Development of Shaanxi Province.

urban area of 3,625 square kilometers. Baoji has jurisdiction over four districts, namely Jintai, Weibin, Chencang and Fengxiang, and eight counties, namely Qishan County, Fufeng County, Meixian County, Longxian County, Qianyang County, Linyou County, Fengxian County and Taibai County.

In 2021, the regional GDP was RMB 254.871 billion, an increase of 6.0% over the previous year. Calculated by the permanent population, the per capita regional GDP was RMB 77,210. At the end of the year, the permanent resident population of the city was 3.282 million, accounting for 58.74% of the urban population. The annual per capita disposable income of urban residents is RMB 38,741, growing by 7.0%; per capita net income of farmers is RMB 15,694, growing by 10.6%.[7]

3.2.2 Project Districts and Counties

The Batch 1 subprojects to be constructed include Linwei District, Chengcheng County, Chencang District and Baoji City (prefecture-level city); where Chencang District is one of the jurisdictions of Baoji City, Linwei District is the urban center of Weinan City, and Chengcheng County is a county under the jurisdiction of Weinan City.

(1) Social and economic conditions

- **Linwei District** is located in the northeast of Guanzhong Plain, Shaanxi Province. It is the urban center of Weinan City, the political, economic and cultural center of the city, and the location of the municipal Party committee and the municipal government. It has jurisdiction over 6 streets and 14 towns, with a land area of 1221k ㎡. Linwei District has a population of 723,800, including an urban population of 402,300. In 2021, the annual GDP of Linwei District was RMB 36.101 billion, an increase of 7.1% over the previous year. The annual local fiscal revenue was RMB 668 million, an increase of 63.8% over the previous year; the per capita disposable income of all residents was RMB 26,493, an increase of 8.6% over the previous year. Among them, the per capita disposable income of urban residents is RMB 39,614, growing by 7.3%; per capita net income of farmers is RMB 15,470, growing by 10.6%.[8]
- **Chengcheng County** is located in the northeast of Guanzhong Plain, Shaanxi Province. It is a county under the jurisdiction of Weinan City. It has jurisdiction over 9 towns, 1 office, 160 administrative villages and 15 communities, with a total population of 313,800 and a land area of 1121k ㎡. In 2021, the annual GDP of Chengcheng County was RMB 11.372

7Source: 2021 Statistical Bulletin of National Economic and Social Development of Baoji City
8Source: 2021 Statistical Bulletin of National Economic and Social Development of Linwei District

billion, the per capita regional GDP was RMB 37,633, and the annual local fiscal revenue was RMB 376 million. The per capita disposable income of urban residents was RMB 36,602, and that of rural residents was RMB 14,225.[9]

- **Chencang District**, located at the western end of Qinchuan, 800-li away from Guanzhong, Shaanxi Province, has 11 towns, 3 sub-district offices, a total of 157 administrative villages, a population of 467,400 and a total area of 2,058 square kilometers. In recent years, Chencang District has won many national honors such as the National Modern Agriculture Demonstration Zone, the National Ecological Demonstration Zone, the Strong Food Industry Zone, and the Hometown of Chinese Folk Culture and Art.

According to the audit, the income of rural residents in the project area mainly comes from non-agricultural income such as migrant workers.

(2) Low-income group

According to the field survey and the analysis of relevant literature, the first low-income population in the project districts and counties in 2021 was 51,954. The main reasons for the low income of low-income households include illness, lack of labor force, the seniors with no family, and lack of skills. All district and county governments have basic security policies for low-income households. According to the actual situation of low-income households, district and county governments pay monthly subsidies to low-income households (for example, in 2021, the minimum subsidy standard for rural subsistence allowances in Weinan (Linwei District) was RMB 203/person/month, and that in Baoji (Chencang District) was RMB 311/person/month), which can ensure the basic livelihood of low-income households.

(3) Status of Ethnic Minorities

According to the social and economic survey and interviews with relevant authorities, the location selection for the facility construction projects and the scope of urban/rural domestic waste collection services in the Batch 1 Subprojects are not involved in communities or villages inhabited by ethnic minorities.

See Table 3-1 for the specific social and economic conditions of districts and counties.

[9]Source: http://www.chengcheng.gov.cn/ (Website of the People's Government of Chengcheng County)

Table 3-1 Social and Economic Conditions of Counties and Districts of Batch 1 Subproject

Project Counties and Districts	Unit	Chengcheng	Linwei	Chencang	Subtotal
Street/Town/District	Person(s)	10	20	15	45
Permanent population	10,000 persons	30.03	72.38	47.1	149.51
Urban population	10,000 persons	14.27	40.23	24.05	78.55
Rural population	10,000 persons	15.76	32.15	23.05	70.96
Female population	10,000 persons	15.07	36.21	23.08	74.36
Ethnic minority population	Person(s)	1228	1508	943	3679
Low-income group	Person(s)	13834	23727	14393	51954
Per capita disposable income of urban residents	RMB	36602	39614	38061	/
Disposable income of rural residents	RMB	14225	15470	15801	/
Regional GDP	RMB 100 million	113.72	361.01	241.37	716.1

Source: Statistical Bulletin on Social and Economic Development of Project Counties and Districts in 2021 and information provided by the PMOs of counties (districts).

(4) Use of cultivated lands and agricultural films in project counties and districts

The total cultivated land area is 2.462 million mu and the rural per capita cultivated land area is 34.7 mu in the first project districts and counties. In the three districts and counties, the total area of agricultural greenhouse film used is 445,000 mu, the total area of mulching film used is 176,000 mu, and the total area of reflective film used is 105,000 mu. According to the audit, the recovery rate of agricultural greenhouse film reaches more than 95%, because the agricultural greenhouse film has a high recovery value and is easy to be picked up. The field separation rate of mulching film and reflective film is high, about more than 70%; however, due to the low recovery value, mulching film and reflective film are not effectively collected and disposed of after field separation. Most villagers discard the mulching film and reflective film in ditches, randomly pile them up in open spaces or directly burn them, which has a certain impact on the rural environment.

Table 3-2 Survey on the Use of Cultivated Lands and Agricultural Films in the Project Area

Project Counties and Districts	Cultivated land	Per capita cultivated land	Land area of reflective film used	Land area of mulching film used	Land area of agricultural greenhouse film used
	10,000 mu	Mu/person	10,000 mu	10,000 mu	10,000 mu
Chengcheng	90	5.71	10	2.1	0.6
Linwei	105	3.27	0.5	12	40.1
Chencang	51.2	2.22	0	3.5	3.8
Total	246.2	3.47	10.5	17.6	44.5

Source: Bureaus of Agriculture and Rural Affairs of Districts and Counties, 2021

3.3 Current Situation of Domestic Waste Collection, Transportation and Disposal in the First Project Districts and Counties

3.3.1 Current Situation of Domestic Waste Management System

Baoji has established urban management bureaus in Jintai District, Weibin District and Chencang District. Subordinate units, district waste management service centers (sanitation stations) are responsible for waste collection and removal, and the Baoji Solid Waste Treatment Center is responsible for the harmless treatment of waste.

- **Linwei District:** The Environmental Sanitation Center of Linwei District is mainly responsible for the cleaning management of primary and secondary streets, the management of waste landfills, and WTSs, transfer trucks and waste collection trucks. The Environmental Sanitation Center has set up 6 sub-district offices with sanitation teams mainly for the cleaning and waste collection in back streets and alleys in the central sub-districts of the city. In the remaining 14 towns, the town governments are mainly responsible for town cleaning and waste collection; villages are responsible for cleaning and waste collection in villages and streets.
- **Chengcheng County:** The domestic waste in Chengcheng County is managed by the Environmental Sanitation Center (ESC) and the Mining Bureau respectively. The resident population within the management scope of the Mining Bureau is 19,086. At present, the Mining Bureau is gradually delivering the management system to the ESC for management. The existing waste collection and transfer in Chengguan Town, the main urban area, is managed by the Sanitation Management Center. Three villages under the jurisdiction of Chengguan Town are managed by their own villages; environmental sanitation offices set up in Zhaozhuang Town and Weizhuang Town, are mainly responsible for managing the waste collection and transfer in the town, and transferring the waste to non-sanitary stacking points after collection; Other existing waste collection in rural areas and towns is managed by villages and towns.

- **Chencang District:** The urban domestic waste in Chencang District is managed by the Waste Management Service Center of Chencang District. In rural areas of Chencang District, except that the domestic waste in Xiangong Town is transferred to Changshougou Landfill for treatment, the domestic waste in other towns and villages is basically landfilled by own towns and villages, not included in the existing urban domestic waste collection and transportation system of Chencang District.

3.3.2 Current Situation of Domestic Waste Collection and Transfer System

The whole process of domestic waste from generation, collection to transfer is quite different for urban areas and towns. By dividing the sources of domestic waste in Baoji City, Chencang District, Linwei District and Chengcheng County into waste from urban areas, market towns and rural areas, the current situation of the collection and transfer system can include three aspects: current situation of domestic waste collection and transfer system in the main urban area, collection and transfer system in the market towns and collection and transfer system in the rural areas.

- **The collection and transportation methods of domestic waste in the main urban area are as follows:**

Commercial areas, enterprises and institutions, residential communities → waste collection bins, peel bins, waste cans, waste houses → collection and transportation trunks → WTSs → domestic waste landfills;

Street cleaning waste and waste at public points → collection and transportation trunks → waste transfer stations → domestic waste landfills.

The commercial areas, enterprises and public institutions, and residential communities in Baoji are cleaned by property management companies and collected to the waste bins, and then transported to the Changshougou Landfill by a third-party service company; the waste in streets and public points is cleaned by the sanitation station under the Urban Management and Law Enforcement Bureau of Baoji District, and finally transported to the Changshougou Landfill by the waste management center for treatment. The collection frequency is once or twice a day.

The urban domestic waste in Chencang District is collected by the sanitation personnel of the Chencang District Waste Management Service Center. The domestic waste such as residents' waste, street cleaning waste and office building waste in the whole urban area is collected and transported through door-to-door services to the Changshougou of Baoji for the landfill every 1-2 days.

The domestic waste in Linwei urban area is mainly managed by residential communities, property management and government agencies in a management mode of combining door-to-door collection of scattered waste along streets and direct transportation from the source by waste generating organizations. The

waste is transported to the nearby WTSs and mobile stations in the urban area, collected and transported to the transfer stations by the waste houses and subdistrict offices, and then transported to terminal treatment facilities by the cleaning and transportation team under the district ESC. There are 4 WTSs and 7 mobile stations in the main urban area for other waste transfers in the main urban area. The waste in the urban area of Linwei District is transferred from WTSs to Majiagou Domestic Waste Treatment Plant for sanitary treatment by compression transfer trunks.

Chengcheng County collects and removes domestic waste such as residents' waste, shop waste, street waste, street cleaning waste, office building waste, school waste and hospital waste in the urban area through door-to-door services twice a day; collects and removes kitchen waste from hotels and restaurants once a day. The waste collection in the Mining Bureau covers 5 jurisdictions (Authority Community, Jianye Community, Yangguang Community, Xihe Community and Beixin Community) and 2 office buildings (industrial corporation office buildings and authority office buildings). There is a temporary WTS in the main urban area of Chengcheng County. It is located in Chengguan Town and is directly transported to Yaotou Landfill by 4 large compression trucks of the cleaning and transportation team. Domestic waste is transferred twice a day; and kitchen waste is transferred once a day.

- **The collection and transfer methods of domestic waste in the market towns are as follows:**

Domestic waste from sub-districts, merchants and residents in market towns → waste collection points → domestic waste landfills/non-sanitary dumps.

Table 3-3 Collection and Transfer Methods of Domestic Waste in Market Towns of Batch 1 Subprojects

Subproject	Baoji City	Chencang District	Linwei District	Chengcheng County
Collection facility	Waste bins are provided by the residents themselves and 2-3 120L waste bins are equipped in the open spaces of sub-districts in market towns.	The market town is equipped with waste bins of different sizes.	One 30-50L waste bin is provided for every 1-3 households, or 2-3 120L waste cans or waste bins are provided for the open spaces of main sub-districts and village committees in market towns.	Waste bins are provided by the residents themselves and 2-3 120L waste bins are equipped in the ventilated and open spaces of sub-districts in market towns.
Collection method	Cleaners collect waste along the sub-districts	Cleaners collect waste along the sub-districts	Cleaners collect waste along the sub-districts	Cleaners collect waste along the sub-districts
Collection frequency	Once a day	Once a day	Once a day	Once in the morning and once in the afternoon
Transfer facility	Compression trucks	Hook arm waste trucks, vans, etc.	Mainly including tricycles, dump trucks, etc.	Compression trucks

Subproject	Baoji City	Chencang District	Linwei District	Chengcheng County
Transfer frequency	Transfer once a day	Transfer once a day	Transfer once every 1-3 days	Transfer once a day
Treatment facilities	Disposal at Changshougou Landfill (for some towns, waste is stacked into the non-sanitary dumps).	Except that the waste in Xiangong Town is collected and transported to Changshougou, Baoji for landfill, the rest of the waste in market towns is transported to the nearest non-sanitary dumps.	Transfer to the saline-alkali land or open spaces near the town for dumping, without harmless treatment.	Some waste is transferred to the formal landfill for landfill, and most of the waste is transferred by transfer trucks to the informal waste dumps for stacking and burying.

- **The collection and transfer methods of domestic waste in rural areas are as follows:**

Villagers' domestic waste → waste cans and waste bins → collection and transfer by tricycles → non-sanitary waste dumps.

Among them, domestic waste is transported to the nearest non-sanitary dump every 1-2 days in each village of Baoji City; domestic waste is collected and transferred once every 1-7 days in each village of Chencang District; domestic waste is transferred once every 1-3 days in each village of Linwei District; domestic waste is collected once every 1-2 days in each village of Chengcheng County.

3.3.3 Problems in Domestic Waste Collection, Transfer and Disposal

Through the collection of stock data and the summary and analysis of the actual site survey, the main problems in the collection, transfer and disposal of urban and rural domestic waste in each subproject are as follows:

- There is an institutional problem of "urban-rural division" in the management of domestic waste in each subproject area, and the waste collection and transfer systems in the main urban areas and rural areas are in stark contrast. The economic level of the main urban area is better than that of the rural area, with large capital investment and relatively perfect system construction.
- Urban WTSs have been built and operated for a long time, with a small area, and most of them are non-compressed ones, with small transfer capacity, odor overflow and other problems. Due to technical, financial and other reasons, the supporting facilities are not complete, and there is a risk of environmental pollution.
- The existing urban domestic waste collection and transfer facilities are relatively backward. At present, the existing waste collection points in the main urban area are old and have no water and power supplies, with poor waste storage capacity, and emit rotten and unpleasant smells in spring and summer, which affects the life of surrounding residents. At the same time, there are no public toilets and sanitation workers' lounges

near the waste collection points, and the sanitation equipment is insufficient, so it is necessary to reconstruct and upgrade the waste collection points.

- Urban sanitation vehicles (such as cleaning vehicles, sprinkling vehicles, etc.) and equipment vehicles are old or inadequate, which affects the daily waste collection and transfer in urban areas;
- The rural population is scattered, making it difficult to achieve full coverage of the waste management system. The collection rate and transfer rate of rural domestic waste are above 95%, but the harmless treatment rate is very low. Due to the lack of WTSs and other facilities, the collection and transfer system of most rural waste has not been included in the urban area yet, and the urban and township waste collection and transfer systems are not integrated.
- Most of the sanitation infrastructure and equipment in townships are provided by villagers themselves. The equipment is backward, and the waste is not covered when transferring, so most of the waste can only be stacked and buried nearby.
- There is no domestic waste sanitary landfill in townships and villages. Not only do the informal waste dumps occupy a large amount of rural land, but also the harmful components enter the environment with landfill leachate, so harmless treatment cannot be carried out.

3.4 Current Situation of Agricultural Film Use and Disposal in Districts and Counties of Batch 1 Subprojects

The mulch film has been used in agricultural production for more than 40 years, and in September 2021, the National Development and Reform Commission issued the *Notice on the Issuance of the "14th Five-Year Plan" Plastic Pollution Control Action Plan*, which mentions that by 2025, in terms of recycling and disposal, the recycling rate of agricultural film in prefecture-level cities and above will reach 85%, and the residue of mulch film in China will achieve zero growth.

According to the survey, the current situations of agricultural film use, recycling and management and the existing problems in Chencang District, Linwei District and Chengcheng County are analyzed, as shown in Table 3-4.

Table 3-4 Current Situation of Agricultural Film Use and Disposal in Districts and Counties of Batch 1 Subprojects

Subproject		Chencang District	Linwei District	Chengcheng County
Agricultural film use status	Total annual usage (t)	664.38	6048	1500
	Greenhouse film usage (t)	531.5	5643	500
	Mulch film usage (t)	132.88	369	200
	Reflective film usage (t)	0	36	800
Agricultural film recycling status	Greenhouse film recycling rate	100%	100%	100%
	Mulch film recycling rate	＜10%	＜10%	＜10%
	Recycling method	The proportion of the mulch film being picked up and uniformly placed in the field by most farmers is about 50%, and the proportion of the mulch film being formally treated by recycling enterprises or WTE plants after picking up from the field is less than 10%, and most of the mulch films are incinerated in the field.	Linwei District Used Material Recovery Company under Linwei District Supply and Marketing Cooperative and Renewable Resources Service Center under Commerce Bureau of Linwei District participate in the recycling of used agricultural films, and recycling stations and sorting centers are set up to recycle the used agricultural films. Private waste recycling stations also recycle local used agricultural films. After being recycled at each recycling station, they are sold to used agricultural film recycling enterprises for processing and reuse. The agricultural film recycled in Linwei District is processed into plastic particles and finished drip tapes by relevant recycling enterprises.	Recycling enterprises and disposal enterprises are responsible for recycling and processing. At present, there are 10 private waste recycling stations in the county. The recycling of existing agricultural film (greenhouse film) basically relies on the above recycling stations and private recycling stations entrusted by recycling and disposal enterprises to recycle the used greenhouse film.
Agricultural film management status		The District Bureau of Agriculture and Rural Affairs is mainly responsible for the supervision and management of the use of agricultural film and the recycling of used agricultural film;	The District Bureau of Agriculture and Rural Affairs is mainly responsible for the supervision and management of the use of agricultural film and the recycling of used agricultural film;	The County Bureau of Agriculture and Rural Affairs is mainly responsible for the supervision and management of the use of agricultural film and the recycling of used agricultural film;

Subproject	Chencang District	Linwei District	Chengcheng County
	The District Market Supervision Administration is responsible for the supervision of agricultural film sales.	The District Market Supervision Administration is responsible for the supervision of agricultural film sales.	The County Market Supervision Administration is responsible for the supervision of agricultural film sales.
Main problems of agricultural film recovery	Due to the farmers' poor awareness of reusing mulch films, the difficulty of recycling residue films and the high recycling cost, mulch film pollution and stacking and incinerating reflective films in the field have become common phenomena; and the residue of farmland film is becoming more and more serious.		

Source: District/County agricultural and rural statistical data and site survey

3.5 Questionnaire Survey of Residents

With the support of the county / district PMOs, the SIA Consultants also conducted a questionnaire survey on local residents (where urban residents include officials, teachers, property management staff, cleaners, residents, enterprise workers, sanitation workers, etc.; rural residents include officials, cleaners, transfer workers, farmers, etc.) to learn attitudes to and suggestions on waste separation, waste facility site selection, etc. The questionnaires are attached in Annex 1.

Due to time constraints and the impact of COVID-19, the random sample survey was conducted by a combination of on-site survey and electronic questionnaire. Respondents are selected by random survey sampling. The survey covers 1,008 urban respondents and 1,768 rural residents The survey covers respondents in 97 villages / communities in 42 townships / sub-districts, including 4 communities in 4 sub-districts and 38 villages in 14 towns in Linwei District; 2 communities in 1 sub-district and 22 villages in 9 towns in Chengcheng County; 4 communities in 3 sub-districts and 26 villages in 10 towns in Chencang District, and 1 village in 1 town in Baoji City (as shown in Table 3-5).

Table 3-5 Regional Distribution and Quantity of Questionnaire Survey

Area	Urban area			Rural area		
	Sub-district (Nr.)	Community (Nr.)	Questionnaire (Sheet)	Town (Nr.)	Village (Nr.)	Questionnaire (Sheet)
Linwei District	4	4	478	14	38	759
Chengcheng County	1	2	104	9	22	480
Chencang District	3	4	426	10	26	529
Baoji City City level[10]	/	/	/	1	1	18
Total	8	10	1008	34	87	1786

3.5.1 Questionnaire Survey of Urban Residents

The survey of urban residents covers 10 communities in three counties (districts) of Linwei District, Chengcheng County and Chencang District. The respondents include officials, teachers, property management staff, cleaners, residents, enterprise workers, sanitation workers, etc. Among them, women account for 68%, and the people aged 46-60 account for the most part.

[10] As Baoji is only involved in terminal facilities at its level, the surveys were conducted primarily among the surrounding communities involved in the closure of the Changshougou landfill.

For waste collection and separation, 97.72% of the residents support the implementation of the Project; 94.64% of the residents support waste sorting pavilions set in the community, and more than half of the residents can accept the waste sorting pavilions set at most 20-30 meters away.

For the disposal of recyclables, 69.35% of residents will sell cardboard, plastic bottles and other recyclables to recycling stations, with an average monthly income of RMB 1-5.

For waste collection and transfer, 67.26% of residents prefer the waste transfer trucks to collect and transfer waste outside the community; 74.8% of residents believe that the weekly waste collection and transportation frequency are insufficient and the protective measures are not in place during transfer.

For the complaint channels for waste disposal, 41.47% of residents believe that the most effective channel is the community committee, and 23.51% of residents tend to complain to the competent government departments, such as the urban management bureau and the environmental protection bureau.

For the impact of the Project on the community, 71.43% of residents believe that the potential risks of the operation of facilities such as waste collection pavilions, central waste collection sites and transfer stations are mainly noise and peculiar smell, etc.

3.5.2 Questionnaire Survey of Rural Residents

The survey of rural residents covers 86 villages / communities in 33 townships of Linwei District, Chengcheng County Chencang District and Baoji City. The respondents include officials, cleaners, transfer workers, farmers, etc. Among them, women account for 37%, and the people aged 18-45 account for the most part. 97.72% of the residents support the implementation of the Project.

For waste collection and separation, more than 90% of residents support waste separation by recyclable and other waste, and about 70% of residents hope that the shortest distance between new waste collection points and residential houses is 50 meters;

For the disposal of recyclables, most rural residents will sell cardboard, plastic bottles and other recyclables to recycling stations, with an average monthly income of RMB 1-5.

For waste transfer, most residents believe that the shortage of the local waste transfer facilities (systems) currently is that the weekly waste collection and transportation frequency are insufficient and the protective measures are not in place during transfer.

For waste disposal, more than 60% of rural residents believe that the current local waste disposal problem in urgent need of improvement is the transfer and disposal of domestic waste, followed by the separation and recycling of domestic garbage. More than half of the residents believe that the implementation of the Project may significantly improve the local waste disposal level.

For the harm of agricultural film and its disposal, most rural residents believe that the used agricultural film is not disposed of or is discarded in the field, which has a high or extremely high harm degree to the local environment and soil; Most residents in Chencang District choose to stack waste in the fields/ditches for incineration or dump it into waste bins, and only 32.9% of the residents in this area choose to collect and recycle it; 64.9% of the residents in Linwei District and 61.4% of the residents in Chengcheng County choose to collect and sell it. The main reason for not picking up all the mulch films or reflective films from the field and putting them into the fixed collection points in the village or recycling them for sale is the difficulty in picking up; More than half of the residents are willing to recycle used mulch films and reflective films in the form of monetary subsidies.

For the impact of the Project on villages and towns, most farmers in Chencang District believe that it will have an impact on local market town fairs and surrounding schools, etc.; while most farmers in Linwei District and Chengcheng County believe that it will not have an impact.

For the complaint channels for waste disposal, most farmers believe that the most effective channels are the departments above the county/district level, followed by the village committee/community office.

3.6 Landfill Closure

The activities of Batch 1 Subprojects include the closure of 4 domestic waste landfills in Linwei District, Chengcheng County and Baoji City (at the city level). The basic information[11] of the 4 domestic waste landfills is as follows:

- **Majiagou Landfill in Linwei District**

Weinan Majiagou Landfill Project is managed by the Linwei District Environmental Sanitation Center (hereinafter referred to as Linwei District ESC), which is located in Majiagou, Xiangyang Sub-district Office, east of Youhe River and south of Weihe River. It was commenced in 2004, officially put into operation in 2007, and expanded in May 2015. The landfill process was improved in August 2017. The service area of this Project covers Linwei District, High-tech Zone and

[11] Refer to the Social Audit Report of Batch 1 subprojects for details.

Huazhou District of Weinan City, which will be closed after the completion of Weinan Waste Incineration Plant.

The landfill gas treatment and leachate treatment of the landfill are carried out by a third-party company entrusted by the Linwei District ESC. The biogas power plant of the landfill is located in the west, and the supporting Weinan Leachate Treatment Plant is located about 1.1km in the north, which are operated by Henan New Power Industrial Co., Ltd. and Beijing Yunchuang Tiandi Environmental Protection Technology Service Co., Ltd. respectively.

Figure 3-1 Majiagou Landfill in Linwei District

- **Chengcheng Landfill**

Chengcheng Landfill is located in Nanguan Village, Chengguan Town, Chengcheng County, covering an area of 38 mu. It was completed and put into operation in 2008, and shut down in December 2020 due to saturated storage capacity. After shutdown, the landfill site was disinfected and covered and compacted with loess, and the site is disinfected every day now. It is currently being shut down. The leachate is transported to the leachate automatic treatment vehicle by pipeline for harmless treatment. The landfill gas is combusted at the flare through the gas-guiding gabions.

Figure 3-2 Current Situation of Chengcheng Landfill

- **Yaotou Landfill in Chengcheng County**

The Chengcheng Subproject includes the closure of Yaotou Landfill. Yaotou Landfill is located 1.5km southeast of Yaotou Town, covering an area of 58.8 mu. According to the relevant data of the Project, the Yaotou Landfill is constructed by the Yaotou Town Government, which completed the project acceptance in August 2019, and met the relevant quality requirements. Since the storage capacity of Chengcheng Landfill is nearly saturated, the Chengcheng County Government has decided to use the Yaotou Landfill to dispose of the domestic waste in the main urban area. In September 2020, the Yaotou Town Government handed over the Yaotou Landfill to the Chengcheng County ESC for operation and management after negotiation.

The design storage capacity of the Yaotou Landfill is 200,000 m^3, which is used to dispose of all domestic waste in the main urban area of Chengcheng County. The leachate and the rainwater and sewage from the operation unit are discharged into the regulating tank, and then transferred by vehicles to the professional leachate automatic treatment vehicle in the Chengcheng Landfill for treatment; the rainwater from the non-operation unit flows into the drainage ditch beside the landfill operation surface and is directly discharged to the nearby rainwater ditch. The landfill gas is directly discharged through the vertical gas well of the gas-guiding gabion. No outsiders are allowed to enter the landfill site, and monitoring is provided to observe the operation and safety of personnel in the site in real time.

Yaotou Landfill is managed by Chengcheng County ESC. At present, there are 7 operation and maintenance personnel, all of whom are employed by the Chengcheng County ESC.

Figure 3-3 Yaotou Landfill Site Area

- **Changshougou Landfill in Baoji City**

Changshougou Landfill in Baoji City is operated by Baoji Solid Waste Treatment Center (hereinafter referred to as Baoji Solid Waste Center), located in Baoling Village (formerly Tongxin Village), Jinhe Town, Jintai District, covering an area of about 600 mu. It was constructed in 2001 and officially put into operation in 2004. The landfill and biogas process is used for sanitary treatment of domestic waste, mainly serving about 1 million residents in the urban areas of Jintai District, Weibin District, Hi-tech Zone and Chencang District. After the Changshougou Landfill is filled, it shall be closed for treatment.

The leachate from the landfill is led to the leachate treatment station at the downstream of the landfill area through the collection device for the up-to-standard treatment, and the treated leachate is discharged into the municipal sewage pipe network, and then discharged into Shilipu Sewage Treatment Plant in Baoji City. The leachate treatment station is operated by Baoji Solid Waste Center.

The landfill gas is discharged by active guide, and a vertical gas well is set in the site to collect landfill gas, which is led to the downstream biogas power plant through the gas collection pipeline for safe disposal. The biogas power plant is operated by a third-party company entrusted by Baoji Solid Waste Center.

Figure 3-4 Changshougou Landfill in Baoji City

3.7 Main Findings of Social Audit

The social audit team has made a detailed social audit on Batch 1 subprojects of The China Plastic Waste Reduction Project (Shaanxi) (P176989). According to the current situation of the subprojects and the characteristics of the industry, the social audit mainly focuses on four social issues, including (a) labor and working conditions, (b) community health and safety, (c) project land, and (d) public participation and grievance redress.

According to the requirements of China's relevant laws and regulations and the World Bank's risk rating standards, main findings of the social audit are as follows:

- There are **substantial risks** for the land use of the landfill closure subprojects:
    - Non-compliance in the land use. The land of Majiagou and Yaotou landfills were leased from the villages/villagers rather than permanent land acquisition, which is noncompliance with China's Land Management Law. Moreover, the landfills have not obtained the land certificate and is not conforming with official land use zoning and planning.
    - Risk of community health and safety. Local residents constructed houses within the 500-meter safety exclusion zone after the landfill was put into operation.
    - Risk of occupational health and safety. The factors of occupational health hazards have NOT been tested in the landfills, and occupational health exposures to workers have NOT identified and managed well according to occupational health tests results
- In addition, there are still **moderate risks** for other facilities in Batch 1 subprojects in terms of labor and working conditions and community health and safety.
    - There is still a gap between the management of some direct workers involved in the existing facilities and waste systems in terms of labor contract management, working hours, labor remuneration and occupational health and safety and China's relevant laws and regulations and the World Bank's ESF requirements;
    - Community workers (such as village/community cleaners) need to be strengthened in contract and safety risk management and grievance redress.
    - Some transfer stations are surrounded by sensitive communities and schools. For community management, no written communication and grievance redress mechanism with surrounding communities has been established.

After communicating fully with the PIUs and achieving the agreements, the SIA unit puts forward relevant suggestions on improving LMP, strengthening the community health and safety and communication mechanism, and properly handling the follow-up arrangements of landfill land, especially involving the interests of villagers, so as to meet the requirements of China's regulations and the

World Bank's ESF. Refer to the Social Audit Report of Batch 1 subprojects for details.

4 Social Management Policy Framework

4.1 Summary

The implementation of Shaanxi subprojects is required to comply with the requirements of the World Bank's Environmental and Social Framework (ESF), as well as the requirements of China's applicable laws and regulations in the field of social risk management. This chapter summarizes the requirements of the World Bank's Environmental and Social Standards (ESSs) applicable to the Project, sorts out China's current social management laws and regulations, technical specifications, applicable standards, etc. that are most relevant to the Project, makes a comparative analysis of the World Bank's ESSs, and proposes remedial measures for the existing differences.

In accordance with the nature, scale and construction contents of the Project, the social team conducted a preliminary review on the correlation between the social impacts and risks of the Project and the World Bank's Environmental and Social Standards (ESSs), and found that:

- In accordance with the socio-economic baseline survey, the areas for the Batch 1 Subprojects do not involve the ethnic minority communities (villages), thus ESS7 is not applicable; the Project is not a financial intermediary, thus ESS9 is not applicable; moreover, ESS3 and ESS6 are mainly applicable to environmental risk management.
- The construction and operation of the Batch 1 Subprojects involve land acquisition or occupation, the occupational health and safety for workers, community traffic safety, and NIMBY risks, which require extensive support and engagement from surrounding communities and residents, and establish a smooth information communication/ grievance redress mechanism (GRM). Therefore, the standards related to World Bank include:
    - Assessment and Management of Environmental and Social Risks and Impacts (ESS1);
    - Community Health and Safety (ESS4);
    - Land Acquisition, Restrictions on Land Use and Involuntary Resettlement (ESS5);
    - Stakeholder Engagement and Information Disclosure (ESS10); and

- Labor and Working Conditions (ESS2) (because the subproject involves direct workers, contracted workers, and community workers).

In addition, the sites of the Batch 1 Subprojects have been clarified, and there is no cultural heritage, but the cultural heritage may be found during civil construction. The Project has developed a cultural heritage discovery procedure in accordance with ESS8, which is detailed in the Project Environmental and Social Management Framework (ESMF).

Table 4-1 Correlation Analysis of Social Standards for the Batch 1 Subprojects

ESS	Village/community collection facilities	Transfer facilities (including vehicles)	Sorting center	Landfill closure
ESS1	✓	✓	✓	✓
ESS2	✓	✓	✓	✓
ESS4	✓	✓	✓	✓
ESS5	X[12]	✓	✓	✓
ESS7	Not relevant			
ESS8[13]	✓	✓	✓	✓
ESS9	Not relevant			
ESS10	✓	✓	✓	✓
X-not relevant, ✓ - relevant				

4.2 Policy Framework

Compared with the World Bank's Environmental and Social Standards (ESSs), China has established a more systematic system for project social risk identification and management, which is supervised and managed by different government functions. These systems include social stability risk assessment of major projects, social management system of land acquisition and demolition, management system of ethnic minorities and management system of laborers. According to social risk management system of the project, the project construction must conform to the fundamental interests of the majority of the people, and social stability risk assessment shall be carried out for major decisions, major fixed asset investment projects, etc.

[12] Land for such facilities will be acquired through free consultation and the ownership of the land will remain unchanged. According to Paragraph 6 of ESS5, ESS5 does not apply to such land.

[13] According to the social investigation and identification, the project sites have been clearly determined in the preparation stage and they do not involve cultural heritage. However, Shaanxi has a long cultural history, and the impact from cultural heritage may still come with the project during construction.

4.2.1 Social Stability Risk Assessment

The Chinese Government has stipulated relevant social risk management regulations for major investment projects. According to the *Interim Measures for Social Stability Risk Assessment of Major Fixed Assets Investment Projects issued by the National Development and Reform Commission,* the project units of major investment projects shall investigate and analyze social stability risks when organizing the preliminary work of major projects. Subsequently, the local people's government or the assessment subject designated by the relevant department of the project will organize the assessment and demonstration of the social stability risk analysis made by the project units, take various ways to listen to the opinions of all parties, analyze, judge and determine the risk level (high, moderate and low), assess the legality, rationality, feasibility and controllability of the project construction, the possible social stability risks, the opinions of all parties and their adoption, and propose risk prevention and resolution measures and emergency response plans; see Table 4-2 for details.

China's social stability risk assessment is partially consistent with the requirements of social impact assessment specified in ESS1. China's social stability risk assessment pays more attention to the social stability risks brought about by project construction and decision-making, but pays less attention to social inclusiveness and sustainability. In order to strengthen the social management of the Project, achieve the social objectives of the Project, and promote social equity, social inclusion and social sustainable development through the construction of the Project, the Shaanxi PMO will identify and screen the social risks of the Project, and pay special attention to the following aspects, including the restriction of land use mode, transformation of land use mode, labor and working conditions, community health and safety, the risk of insufficient stakeholder engagement, as well as influence of ethnic minorities, etc. The social impact assessment of the Project will be conducted before the assessment of relevant subprojects in accordance with the requirements specified in ESS1.

Table 4-2 Legal Framework for Social Risk Management

S/N	Domestic laws and regulations	Effective Year
1	*Interim Regulations on Procedures for Major Administrative Decisions (No. 713)*	2019
2	Notice on Printing and Issuing the *Interim Measures for Social Stability Risk Assessment of Major Fixed Assets Investment Projects of National Development and Reform Commission*	2012

4.2.2 Labor Management

The Chinese laws and regulations have comprehensive provisions on child labor, discrimination, forced labor, working hours, minimum salary, labor safety

and health, etc. For example, employers are prohibited from recruiting minors under 16 years; female and underage workers (16-18 years) are subject to special protection; laborers should not be discriminated against based on ethnic group, race, gender or religion; women enjoy the same employment rights as men; forced labor is prohibited; employers must establish a sound labor safety and health system, and reduce occupational hazards. Shaanxi Province, and the project cities / counties / districts have formulated relevant institutions and measures accordingly.

The Chinese government has also established a system of laws, regulations and industry standards to protect laborers' OHS, including state laws and regulations, local regulations and bylaws, and health and safety standards of different industries. A multi-layer legal system for occupational health protection has been established.

There are special laws that protect women's labor rights, including the prohibition of sexual harassment. In particular, the project cities and counties (e.g., Weinan City, Chengcheng County) have developed special action plans to prevent and control occupational diseases. Specific measures include giving comprehensive publicity on the Law on the Prevention and Control of Occupational Diseases, strengthening supervision and inspection, strengthening the "three simultaneities"[14] management of occupational protection facilities, strengthening the M&E of occupational hazards, regulating employment management, and increasing the coverage of work injury insurance.

The Shaanxi Provincial Labor and Social Security Department, and Finance Department have issued the Administrative Measures for the Development of Public Welfare Jobs of Shaanxi Province (effective from March 1, 2019), and the Notice on the Management of the Development of Public Welfare Jobs (effective from April 14, 2020) to regulate the management of public welfare jobs. The policies state that preferential support should be given to vulnerable laborers, and labor contracts for rural public welfare jobs should be signed annually, and also specify salaries, social insurance, rest, etc.

Table 4-3 Laws and Regulations of China and Shaanxi Province on Labor and Working Conditions

[14] Occupational protection facilities for construction projects must be designed, constructed, and put into operation together with the main part.

Policy level	**Regulations**	**Effective Year**
China	Labor Law of the People's Republic of China	Revised in 2018
	Management Measures for Occupational Health Monitoring and Supervision of the Employer	2012
	Labor Contract Law of the People's Republic of China	Revised in 2012
	Regulations of Labor Insurance and Supervision	Revised in 2018
	Emergency Response Law of the People's Republic of China	2007
	Emergency Management Measures for Work Safety Accidents	2016
	Law of the People's Republic of China on the Protection of Rights and Interests of Women	Revised in 2018
	Special Rules on Labor Protection of Female Employees	2017
	Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste	Revised in 2020
	Law on the Prevention and Control of Occupational Diseases	Revised in 2018
	Social Insurance Law of the People's Republic of China	Revised in 2018
	Law of the People's Republic of China on the Protection of Minors	Revised in 2020
	Law of the People's Republic of China on the Protection of Persons with Disabilities	Revised in 2018
	Labor Dispute Mediation and Arbitration Law of the People's Republic of China	2007
	Trade Union Law of the People's Republic of China	Revised in 2009
Shaanxi Province	Regulations on Minimum Salaries of Shaanxi Province (Order No.109 of the Shaanxi Provincial Government, May 20, 2006)	Effective from July 1, 2006
	Regulations on the Work Safety Responsibility of Production and Business Units of Shaanxi Province (Order No.156 of the Shaanxi Provincial Government in 2011)	2011
	Notice on the Integrated Regulation and Law Enforcement of Work Safety and Occupational Health (SAJ [2017] No.156)	Effective from 2012
	Administrative Measures for the Safety Management of Work in Confined Spaces of Shaanxi Province (SAW [2021] No.25)	2017
	Special Rules on Labor Protection of Female Employees of Shaanxi Province (Order No.209 of the Shaanxi Provincial Government on January 12, 2018)	Effective from March 1, 2018
	Regulations on the Prevention and Control of Environment Pollution Caused by Solid Wastes of Shaanxi Province	Amended in 2019
	Administrative Measures for the Development of Public Welfare Jobs of Shaanxi Province issued by Department of Human Resources and Social Security, Finance Department of Shaanxi Province	Effective from March 1, 2019
	Notice of the Shaanxi Provincial Labor and Social Security Department, and Finance Department on the Management of the Development of Public Welfare Jobs issued by Department of Human Resources and Social Security, Finance Department of Shaanxi Province	Effective from April 14, 2020
	Notice on Strengthening the Safety Management of Urban Waste Treatment Facilities issued by Department of Housing and Urban-Rural Development of Shaanxi Province	2022
City/county level	Rules for the Implementation of "Three Simultaneities" Occupational Health Management of Construction Projects of Weinan City of Weinan Administration of Work Safety (WAJF [2012] No.39)	2012

Policy level	Regulations	Effective Year
	Opinions on Strengthening Work Safety (WSBZ [2014] No.36)	2014
	Notice on Implementing the Work Safety Responsibility System for Enterprises (WAWF [2017] No.14)	2017
	Notice on the Integrated Regulation and Law Enforcement of Work Safety and Occupational Health (WAJF [2017] No.93)	2017
	Notice on Implementing the Guidelines of the Plenary Session of the Safety Committee of the State Council Deeply (WAWF [2020] No.24)	2020
	Opinions of the Weinan Municipal Government on Promoting the Healthy Weinan Action of Weinan People's Government (WZF [2021] No.25)	2021
	Implementation Plan for the Healthy Chengcheng Action of Chengcheng County People's Government (2021)	2021

4.2.3 Community Health and Safety

Relevant requirements for community health and safety cover work safety, infectious disease prevention and control, road traffic safety, etc. China has established sound institutional requirements on work safety, traffic safety, infectious disease prevention and control, and accident response to protect people's personal and property safety.

Table 4-4 State Laws and Regulations on Community Health and Safety

Level	Policy	Effective date
China	Work Safety Law of the People's Republic of China	Revised in 2021
	Emergency Response Law of the People's Republic of China	2007
	Regulation on Emergency Responses to Work Safety Accidents	2019
	Measures for the Administration of Road Transportation Safety of Hazardous Goods	2020
	Technical guidelines for eco-environmental health risk assessment—General principles	2020
	Technical Code for Municipal Solid Waste Landfills (CJJ17—2004)	2004
	Standard for Pollution Control on Municipal Solid Waste Landfills (GB16889-2008)	2008
	Code for Planning of Urban Environmental Sanitation Facilities (GB50337-2003)	2003

4.2.4 Land Acquisition and Involuntary Resettlement

For land acquisition, housing demolition, resettlement and compensation, China has developed a complete legal framework and policy system, including the *Land Administration Law of the People's Republic of China* (the third revision on August 26, 2019) and the Decree No.590 of the State Council - *Regulation on the Expropriation of Buildings on State-owned Land and Compensation* (January 21, 2011). Within the framework of national laws and policies, local governments at all levels have promulgated and implemented applicable laws and policies conforming to local laws and policies to manage and guide local land acquisition, housing demolition, resettlement and compensation.

According to the Land Administration Law[15], collective land to be used for rural pubic facilities and public welfare programs shall be approved according to law, and farmland involved shall be converted into construction land. Therefore, collective construction land to be used for rural pubic facilities and public welfare programs does not have to be converted into state-owned land.

Table 4-5 Legal Framework for Land Acquisition and Demolition/Involuntary Resettlement

Level	Policy	Effective date
China	Land Administration Law of the People's Republic of China	Amended on August 28, 2004
	Notice of the Ministry of Land and Resources on Further Land Acquisition Management (GTZYB [2010])	June 26, 2010
	Guiding Opinions on Perfection of Land Acquisition Compensation and Resettlement System (GTZF [2004] No. 238)	November 3, 2004
	Decision of the State Council on Deepening the Reform and Rigidly Enforcing Land Administration (GF [2004] No. 28)	October 21, 2004
	Notice of the State Council on Intensifying the Land Control (GF [2006] No. 31)	August 31, 2006
	Notice of Guidance on Employment Training and Social Security for Land-expropriated Farmer sent by the General Office of the State Council to the Ministry of Labor and Social Security (GF [2006] No. 29)	April 10, 2006
	Notice of the Ministry of Labor and Social Security, and the Ministry of Land and Resources on Doing A Practical Job in Social Security for Land-expropriated Farmers (LSBF [2007] No.14)	April 28, 2007
	Circular of the Ministry of Finance, the Ministry of Land and Resources and the People's Bank of China on the Relevant Issues Concerning Adjusting Payments for the Paid Use of New Construction Land (CZ [2006] No. 48)	November 7, 2006
Shaanxi Province	Measures of Implementing the Land Administration Law of the People's Republic of China in Shaanxi Province	January 1, 2000
	Measures for Unified Land Acquisition for Construction Projects in Shaanxi Province	January 8, 2002
	Notice on *Printing and Issuing Shaanxi Provincial Unified Land Acquisition Project Management Procedures (Trial)* (SGTZBF [2015] No. 5)	March 27, 2015
	Notice of the People's Government of Shaanxi Province on Promulgating the Comprehensive Land Price of the Acquisition of Agricultural Lands in the Province	December 31, 2020
	Implementation Plan of the Five-Year Action (2021~2025) for the Improvement of Rural Human Settlements in Shaanxi Province	May 12, 2022
	Contents of Compensation for Acquisition of Farmers' Collective Land	August 11, 2015
	Notice of Shaanxi Provincial Department of Labor and Social Security and Department of Land and Resources on Forwarding the Notice of the Ministry of Labor and Social Security and the Ministry of Land and Resources on Effectively Implementing Social Security for Land-expropriated Farmers	September 11, 2007

[15]Articles 59, 61 and 44 of the 2019 Amendment and Articles 59, 61, 43 and 44 of the 2004 Amendment.

Level	Policy	Effective date
	Notice on Issues Related to the Management of Agricultural Land for Facilities by Shaanxi Provincial Department of Natural Resources and Shaanxi Provincial Department of Agriculture and Rural Affairs (SZRZG [2020] No.4)	July 2, 2020
	Measures for the Assignment and Transfer of State-owned Land Use Right in Shaanxi Province	September 1, 2016
	Notice on Further Implementing Policies Related to Land-Expropriated Farmers' Participation in Basic Endowment Insurance in Shaanxi Province	May 23, 2016
City, district and county	Notice of Weinan Municipal People's Government Office on Forwarding the Notice of Implementation Opinions on Land Expropriation and Requisition in Weinan District of Linwei District People's Government of Weinan Municipal Land and Resources Bureau (WZBF [2008] No. 202)	December 29, 2008
	Notice of the Linwei District People's Government of Weinan City on Promulgating the Comprehensive Land Price of the Acquisition of Agricultural Lands in the District (WLZF [2021] No. 2)	January 19, 2021
	Notice of Chengcheng County People's Government on Promulgating the Comprehensive Land Price of the Acquisition of Agricultural Lands and Unused Areas in Chengcheng County (CZF [2021] No. 2)	January 8, 2021
	Notice of the People's Government of Chencang District of Baoji City on Promulgating the Comprehensive Land Price of the Acquisition of Agricultural Lands and Unused Areas in the District (BCZF [2021] No. 2)	2021

4.2.5 Information Disclosure and Public Participation

With regard to the information disclosure, public engagement and complaint and grievance redress mechanism (GRM), the laws and regulations of China, Shaanxi Province and the project districts and counties have made comprehensive and strict requirements on the approval and implementation process of major construction projects, the compensation plan for land expropriation and requisition, the allocation of government resources and other information disclosure, and required smooth channels for public engagement.

China and Shaanxi Province have established a systematic petition mechanism. Citizens, legal persons or other organizations can report the situation to the people's governments at all levels and the working departments of people's governments at or above the county level by letter, e-mail, fax, telephone, visit, etc., and put forward suggestions, opinions or complaints, which shall be handled by the relevant administrative organs according to law. See Table 4-6 for details.

Table 4-6 Legal Framework for Information Disclosure and Public Engagement

Level	Title	Effective Year
China	Land Administration Law of the People's Republic of China	2020

Level	Title	Effective Year
	Measures for Public Engagement in Environmental Impact Assessment	2019
	Regulations for the Implementation of the Land Administration Law of the People's Republic of China	2021
	Guidelines on Standards for Publicity of Community-level Government Affairs on Acquisition of Farmers' Collective Land	2019
	Opinions on Comprehensively Promoting the Publicity of Government Affairs	2016
	Opinions of the General Office of the State Council on Promoting the Publicity of Government Information in the Field of Public Resource Allocation	2016
Shaanxi Province	Measures of Implementing the *Land Administration Law of the People's Republic of China* in Shaanxi Province	2000
	Measures for Unified Land Acquisition for Construction Projects in Shaanxi Province	2002

4.2.6 Analysis of Differences with ESS of World Bank and Remedial Measures

As mentioned above, China has established a systematic social security management system, with the consistent objectives with the World Bank's social security policies, i.e., mitigating the social risks of the project and achieving sustainable development, but there are still some differences. See Table 4-7 for relevant difference analysis.

Table 4-7 Applicability of World Bank's Social Standards and Differences from China's Policies and Remedial Measures

No.	ESS standard	Applicability	Comment	Policy differences	Remedial measures
1	ESS1: Assessment and Management of Environmental and Social Risks and Impacts	Yes	A social impact assessment (SIA) was prepared for the Batch 1 Subprojects. Corresponding due diligence on existing facilities and associated facilities [16] shall be conducted as part of the social review. As a part of the legal documents, ESCP is prepared, which promises to ensure that the project conform to the measures and action requirements specified in the social management plan during the implementation of each subproject. The Borrower shall continue to carry out stakeholder engagement and information disclosure activities throughout the implementation of all subprojects.	In China, social stability risk assessment is only required for major investment projects. The scope of assessment is mainly for the project itself, and does not involve the due diligence on existing facilities and associated facilities.	For these subprojects, social audit, social risk and social impact assessment (SIA) have been carried out, and SEP and ESCP have been designated.
2	ESS2: Labor and Working Conditions	Yes	The labor involved in the Batch 1 Subprojects includes direct workers, contracted workers and community workers. The requirements on working conditions, labor protection, grievance redress mechanism (GRM), occupational health and safety in this Standard are all applicable to the direct workers and contracted workers of the Project; potential risks of child labor, forced labor and major safety issues need to be identified for employees of key suppliers.	The Chinese Government has made comprehensive regulations on labor and working conditions, which are basically consistent with the scope and elements of Environmental and Social Standards 2 (ESS2); however, ESS2 has not classified the workers. Practically, the risks of child labor, forced labor and GBV of the Project are extremely low, but the occupational health and safety is	For the direct workers, contracted workers and community workers involved in the Project, their labor risks and health hazards shall be identified, and a summary labor management procedure (LMP) shall be prepared.

[16] Para. 11 of ESSs prescribes that the term "associated facilities" means facilities or activities that are not funded as part of the project and are: (a) directly and significantly related to the project; (b) carried out or planned to be carried out, contemporaneously with the project; (c) necessary for the project to be viable and would not have been constructed, expanded or conducted if the project did not exit.

No.	ESS standard	Applicability	Comment	Policy differences	Remedial measures
			A labor management procedure (LMP) is in place for all workers.	required to be strengthened and improved. The ESS2 and EHSGs of World Bank have stricter labor management procedures and normative requirements in terms of policy requirements and practice.	
3	ESS4: Community Health and Safety	Yes	The social impact assessment assesses the social impacts and risks in the health and safety of surrounding communities, and puts forward corresponding management measures in the social management plan. The project has formulated the Stakeholder Engagement Plan (SEP), and will continue to carry out consultation and engagement with relevant communities throughout the implementation of the Batch 1 Subprojects.	Establish a continuous engagement mechanism to ensure that the community participates in the design, preparation and implementation of the project.	Identify the impact of the project on the surrounding communities and safety in line with the social impact assessment, optimize the project design, and formulate corresponding social risk management measures; during the whole project period, the project will conduct stakeholder engagement and establish a grievance redress mechanism (GRM).
4	ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Yes	According to the identification, the new project activities of the Batch 1 Subprojects of the Project involve land acquisition. The project has carried out a survey of resettlement impact, socio-economic and resettlement plan, and formulated a resettlement action plan (RAP) The social audit on the existing facilities has been carried out for the project, the remaining land problems has been identified, and corresponding remedial measures has been formulated. For the negotiated land for the front-end facilities, the corresponding procedures have been strengthened, including complaints and grievances, monitoring and evaluation.	China's policy does not require the preparation of a separate resettlement action plan for municipal project investment and due diligence on existing facilities.	In accordance with the identification of resettlement impacts, the project has prepared a resettlement action plan and conducted due diligence on existing facilities; and developed a monitoring plan for the implementation of project resettlement.

No.	ESS standard	Applicability	Comment	Policy differences	Remedial measures
5	ESS8: Cultural Heritage	Yes	The Project involves civil engineering activities, and cultural heritage may be found accidentally during excavation. The management procedure for accidentally discovered cultural relics has been formulated for the Project.	The *Law of the People's Republic of China on the Protection of Cultural Relics* has stipulated relevant procedural requirements for cultural relics with accidental risks.	The project's environmental and social management framework establishes a procedure for the accidentally discovered cultural relics.
6	ESS10: Stakeholder Engagement and Information Disclosure	Yes	The project involves a wide range of stakeholders, so a Stakeholder Engagement Plan (SEP) has been prepared. With the development of the project, the SEP shall be updated once new stakeholders are identified. The Borrower will carry out stakeholder engagement activities in accordance with the plan in the SEP throughout the project life cycle, especially for vulnerable groups of the project.	Applicable Chinese policies and practices focus more on the engagement in the initial stage of project construction, and the public engagement level in policy planning is low, and there is no clear requirement for stakeholders to engage in the whole life cycle of the project or decision-making. According to ESS10, the stakeholder engagement shall run through the whole project cycle, and the Stakeholder Engagement Plan (SEP) shall be prepared in the project preparation stage and monitoring shall be carried out in the implementation stage.	The Batch 1 Subprojects will be fully negotiated in preparation. On this basis, the Stakeholder Engagement Plan (SEP) has been formulated for the Batch 1 Subprojects, ensuring that stakeholders continue to engage in the project during the project life cycle and monitor the implementation process.

4.3 Requirements and Applicability of the World Bank's Environmental and Social Framework

The World Bank's Environmental and Social Framework clarifies the Bank's commitment to sustainable development through a Bank policy and a set of Environmental and Social Standards (ESSs). This Environmental and Social Standards (ESSs) specify the requirements that the borrowing country shall meet when identifying and evaluating the environmental and social risks and impacts of projects supported by the World Bank through investment project financing.

- **ESS1 sets out** the Borrower's responsibilities for assessing, managing, and monitoring environmental and social risks and impacts associated with each stage of a project supported by the Bank through Investment Project Financing, in order to achieve environmental and social outcomes consistent with the Environmental and Social Standards (ESSs). The Borrower will: (a) Conduct an environmental and social assessment of the proposed project, including stakeholder engagement; (b) Undertake stakeholder engagement and disclose appropriate information in accordance with ESS10; (c) Develop an Environmental and Social Commitment Plan (ESCP), and implement all measures and actions set out in the legal agreement including the ESCP; and (d) Conduct monitoring and reporting on the environmental and social performance of the project against the ESSs.
- **As stated in ESS2,** the Borrower shall develop and implement written labor management procedures applicable to the project for project workers, including direct employees and contracted workers; project workers will be provided with information and documentation that is clear and understandable regarding their terms and conditions of employment. Project workers will be paid on a regular basis as required by national law and labor management procedures. Deductions from payment of wages will only be made as allowed by national law or the labor management procedures, and project workers will be informed of the conditions under which such deductions will be made. Project workers will be provided with adequate periods of rest per week, annual holiday, and sick, maternity and family leave, as required by national law and labor management procedures. No child labor, forced labor or discrimination is allowed. The Borrower will provide appropriate measures of protection and assistance to address the vulnerabilities of project workers, provide a grievance mechanism., and design and implement the occupational health and safety (OHS) measures.

- **ESS4 states** that the Borrower will evaluate the risks and impacts of the project on the health and safety of the affected communities during the project life cycle, including those who, because of their particular circumstances, may be vulnerable. The Borrower will identify risks and impacts and propose mitigation measures in accordance with the mitigation hierarchy.
- **ESS5 requires** that involuntary resettlement should be avoided. Where involuntary resettlement is unavoidable, it will be minimized and appropriate measures to mitigate adverse impacts on displaced persons (and on host communities receiving displaced persons) will be carefully planned and implemented.
- **ESS10 requires** that: Borrowers will engage with stakeholders throughout the project life cycle, and the nature, scope, and frequency of stakeholder engagement will be proportionate to the nature and scale of the project and its potential risks and impacts. The Borrower will engage in meaningful consultations with all stakeholders, and will provide stakeholders with timely, relevant, understandable, and accessible information, and consult with them in a culturally appropriate manner, which is free of manipulation, interference, coercion, discrimination, and intimidation. The Borrower will maintain, and disclose as part of the environmental and social assessment, a documented record of stakeholder engagement, including a description of the stakeholders consulted, a summary of the feedback received, and a brief explanation of how the feedback was taken into account, or the reasons why it was not.

Overall, ESS2, ESS4, ESS5 set objectives and requirements to avoid and minimize social risks and impacts to the project staff, affected communities, and involuntary resettlement. Once they are set, the borrower shall manage them through a social management system in conformity with ESS1.

5 Social Risk and Impact Screening

5.1 Screening Method

The SIA unit of the Project made detailed identification and screening of potential social risk factors of the Project through data collection, FGDs, questionnaire survey, stakeholder17 interview, and key informant interview.

According to the proposed content of the Project, the potential social risks of the Project include: remaining environmental and social problems in the existing facilities (such as non-conformity with the provisions of the safety distance specified in the EIA and the Land Administration Law), land acquisition risks, NIMBY risks of pollution facilities, risks in work relationship and occupational health and safety (OHS) of laborers, risks in community health and safety and road safety, insufficient stakeholder engagement, and risks of exclusion for vulnerable groups.

According to preliminarily identified and screened risk factors mentioned above, the nature and scale of project activities, and the existing management level, the degree of social risks was preliminarily judged.

5.2 Social Impact Screening Results

The social risk analysis of facility construction of the Project was made according to the activities of each subproject and each phase of the Project (preparation period, implementation period, and operation period) as well as the Environmental and Social Framework (ESF) and Environmental and Social Standards (ESSs) of the World Bank (see Table 4-1 for details). According to screening, Batch 1 subprojects in Shaanxi are of "high social risks".

5.2.1 Irrelevant Social Risks and Impacts

- **Ethnic minority:**

According to the socio-economic survey, the total population of the ethnic minorities is about 3700, mainly Hui ethnic group, followed by Mongolian and Tibetan ethnic groups in districts and counties involved in Batch 1 subprojects (Linwei District, Chengcheng County, and Chencang District). Ethnic minorities are scattered in the project area. Because project activities will not be located in villages or communities inhabited by ethnic minorities, they will not experience adverse project induced impacts, and therefore, ESS7 is not relevant.

- **Forced labor and employment child labor:**

[17] Refer to the stakeholder engagement plan of Batch 1 subprojects for details.

China implements comprehensive laws and regulations and strict supervision on the prohibition of child labor, discrimination, and forced labor, which are basically consistent with the scope and elements of ESS2 Shaanxi Province has released relevant policies to prohibit any unit, organization or individual from introducing minors under 16 to work. The people's governments at or above the county level shall strengthen their leadership over the prohibition of child labor, establish and improve the coordination mechanism and responsibility assessment system for the prohibition of child labor, and urge the implementation of prohibition measures.

The workers engaged in activities of Batch 1 subprojects are mainly direct workers, contracted workers, and community workers. The types of work of the Project involve the management personnel and construction workers in the construction period and the management personnel, transfer drivers, and cleaners in the operation period. Considering the nature of the job position, the construction workers of the Project shall have relevant experience, skills, and qualification certificates. All of these jobs have an age limit (For example, over-18-year-old Chinese citizens can apply for a driving license). Most cleaners are about 40-50 years old. According to the audit, so far, PIUs do not employ any child labor or minor worker aged 16-18.

According to the *Labor Law* and the *Provisions of the State Council on Work Hours for Workers and Staff Members*, the working hours of laborers shall not exceed 44 h per week and 8 h per day on average. Under certain circumstances, the extended working hours shall not exceed 3 h per day or 36 h in total per month (according to Article 41 of the *Labor Law*); minor workers aged 16-18 shall not work overtime. According to the audit, PIUs do not show forced labor up to now.

According to Article 12 of the Labor Law, laborers shall not be discriminated against in work because of their nationality, gender, or religious belief. Article 27 of the *Employment Promotion Law* specifies that it is not allowed to refuse to employ women or raise the employment standard for women because of their gender or restrict the marriage and childbirth of female employees in the labor contract. The *Employment Promotion Law* protects the employment rights of "the disabled", "carriers of infectious diseases", and "rural laborers". It also clearly specifies that recruitment brochures or advertisements issued by employers shall not contain discriminatory content. According to the audit, PIUs do not show discrimination in recruitment up to now.

According to the social audit of Batch 1 subprojects, PIUs in the construction and operation periods are mainly relevant government departments and subordinate organizations which adopt complete labor management and

supervision system without the employment of child labor, forced labor, or discrimination in recruitment. Therefore, it is expected that the risk of child labor, forced labor, and discrimination in recruitment will not materialize under Batch 1 subprojects; however, according to the audit and current management level of relevant organizations, special attention shall be paid to the risks in working terms and conditions and OHS of laborers under Batch 1 subprojects.

5.2.2 Relevant Social Risks and Impacts

According to activities of Batch 1 subprojects and screening based on ESSs of the World Bank, the social risks of the Project mainly include: (1) The direct workers, contracted workers, and community workers (such as village/community cleaners) are involved in project construction and operation, but there are still gaps between their working conditions (such as the wage level, working hours, contract terms, GRM, and overtime subsidy) and these required by the *Labor Law*. Laborers in some posts may also be exposed to OHS risks; (2) community health and safety risks, road and traffic safety risks in the process of project implementation and material/waste transportation, risks of possible explosion due to improper treatment of landfill gas at landfill closure and community health and safety due to improper treatment of leachate, and impacts of proposed landfill closure on community health (especially residents within the sanitation protection zone (SPZ)); (3) land acquisition and resettlement (LAR) impact duo to new WTS and sorting center; non-compliance risk of existing domestic waste landfill; (4) unsustainable project and community dissatisfaction due to the lack of effective stakeholder engagement (5) risks of exclusion in the process of project preparation, construction, and operation; (6) NIMBY risks [18]in the process of site selection and construction of waste collection point and WTS and community conflicts for the reuse of closed landfills with remaining problems.

(1) Risks in Labor and Working Conditions (ESS2)

Direct workers, contracted workers (the contractors' workers), and community workers (such as village cleaners) are involved in the construction and operation of Batch 1 subprojects.

There may be labor management risks during project construction and operation, such as labor rights and interests protection, labor health and safety, driving safety, and equipment operation; health of laborers engaged in civil works (including noise, air, and dust; COVID-19 and other risks). Considering the existing

[18] People may oppose unpopular things, for example, building waste collection stations, transfer stations or landfills near their communities, but they would be happy to see them being built elsewhere, in other words, not in my backyard.

management level of the districts and counties where the Project is located and the nature of the Project, there are "**substantial**" risks in labor and working conditions and OHS (especially OHS).

(2) Community Health and Safety (ESS4)

Facilities enter and leave the construction site for transporting materials and large-scale construction equipment during construction; facility operation, such as the waste collection and transportation vehicle, may pose risks in traffic transportation safety to surrounding communities.

According to the social audit, there are residential areas in the west, northwest, and southwest of Chengcheng Landfill. Xincheng Garden Community has a straight-line distance of 150 m in the west (about 300 households), and there is a residential area in Nanguan Village in the south with a straight-line distance of 150 m (about 100 households). They are located within 500 m of the SPZ of the landfill, fail to comply with EIA requirements, and have an impact on community and resident health. The waste collected from Changshougou has relatively high water content, and the slope of the waste pile has the risk of sliding, which may affect community safety.

During operation, improper treatment of landfill gas after the closure of four domestic waste landfills of Batch 1 subprojects may cause explosion, and the leachate may leak to pollute the groundwater and soil, thus posing risks to community health and safety.

To sum up, there are "**substantial**" risks in community health and safety of facilities of Batch 1 subprojects.

(3) Project Land Risk (ESS5)

- **Front-end Collection Facility**

The front-end collection facilities invested in Linwei District, Chengcheng County, and Chencang District mainly include waste collection points, waste sorting pavilions (involved in Linwei District and Chencang District), and central waste collection sites (only involved in Chencang District) constructed; relevant waste bins, collection trucks, and other equipment purchased.

The waste collection points are all located in rural areas of Linwei District and Chencang District, generally collective construction land with an estimated average floor area of 20-30 m^2; the waste sorting pavilions are located in existing urban sites of Linwei District and Chencang District, with an estimated average floor area of 2m^2.

In addition, there are 32 central waste collection sites in Chencang District, including two urban points and 30 rural points, with an average estimated floor area of 500 m^2.

- **Transfer and Sorting Facilities**

The reconstruction and construction of 22 transfer stations will be involved in Batch 1 subprojects. According to the feasibility study report, the land scale of a single subproject ranges from 500 m^2 to 5,000 m^2; a new sorting center will be built in Linwei District, with a floor area of about 6500 m^2; a waste transfer truck delivery and maintenance center will be built in Chencang District, with a floor area of about 11,000 m^2. All new facilities do not involve house demolition and physical resettlement.

- **Closure of Domestic Waste Landfill**

Activities of Batch 1 subprojects include the closure of four domestic waste landfills. Landfill closure will be implemented in the existing site area, so it does not involve new land occupation. However, according to the social investigation, the Majiagou Landfill in Linwei District and Yaotou Landfill in Chengcheng County are located above leased collective land, which does not comply with Chinese requirements for the construction land of such facilities.

As mentioned above, China, Shaanxi Province, and districts and counties where the Project is located have established a sound policy and regulation system for land acquisition and the implementation process of land acquisition and resettlement; the PIUs for land acquisition also assign professional personnel with rich experience to implement land acquisition and resettlement. Overall, there are "**substantial**" land risks of Batch 1 subprojects.

(4) Risk of Exclusion (impact on vulnerable groups[19]) (ESS1)

Relevant vulnerable groups in the project area may be more affected due to their own factors and excluded from the Project. The main vulnerable groups of the Project include workers without formal written contracts, low-income groups (village cleaners), and waste collectors at non-sanitary landfills.

In the project design and arrangement of front-end collection facilities, vulnerable groups may be excluded from the engagement process, which keeps their opinions and suggestions from being considered in the project design. The stakeholder engagement plan has been formulated for the Project to guide meaningful public consultation to ensure the interests of vulnerable groups.

[19] In the Project, vulnerable groups include low-income population, the elderly, the disabled and informal staff (e.g., village cleaners).

Considering the increasing scale of sanitation workers involved in the Project, the low management level of existing related facilities and insufficient funds and awareness also increase the impact on them. Therefore, the Project has a "**moderate**" impact on vulnerable groups. Development opportunities and fair benefits for sanitation workers and other vulnerable groups will be fully considered in the design and implementation process by improving existing management mechanisms and procedures.

(5) Information Disclosure and Engagement (ESS10)

Domestic waste collection, transportation, and disposal are related to thousands of households. Information disclosure and engagement in project preparation, implementation and operation are important links to achieve project objectives. Besides relevant departments, the main stakeholders also include rural and urban residents, property management staff, waste transportation drivers, cleaners, and affected people by land acquisition. Untimely and insufficient information disclosure or consultation will affect the realization of the project objectives. Especially NIMBY in site selection of environmental pollution facilities, full consultation shall be made with surrounding communities to obtain public support on site selection, land acquisition, and facility construction of the Project.

Extensive information disclosure and public engagement were made, and the stakeholder engagement plan was formulated in the preparation of Batch 1 subprojects and will be implemented throughout the project life cycle. Therefore, there are "**moderate**" risks in insufficient stakeholder engagement.

(6) NIMBY Risk of Pollution Facility (ESS1)

Construction of waste collection points in villages and communities and site selection of facilities such as WTSs and recyclables sorting centers in Batch 1 subprojects may pose NIMBY risk to surrounding communities.

According to the investigation, all districts and counties will fully respect the opinions of affected villages and villagers and make extensive consultation when selecting the project site. In the case of site selection in project design, project facilities shall be constructed away from environmentally sensitive areas (such as communities, hospitals, and schools) and environmental protection zone shall be set. Drivers of waste collection and transportation vehicles shall have driving licenses and receive safety training. Opinions of surrounding residents will be fully consulted for the schedule of waste collection and transportation.

Considering the scale of and site selection for the project construction, there are "substantial" NIMBY risks in Batch 1 subprojects.

6 Stakeholder Engagement

Shaanxi PMO, with the support of the SIA Consultants, prepared a standalone SEP for the Batch 1 subprojects. The SEP documented the processes and outcomes of the comprehensive information disclosure and public consultation activities and surveys and set out detailed plans by activities to promote stakeholder engagement during the implementation. The SIA did not repeat much of the details in the SEP and its annexes. The results of the questionnaire surveys were summarized in the baseline sections (from Section 3.3 to 3.7). This section made references to the highlights from the completed stakeholder engagement activities to inform the impact assessment and mitigation as well as the primary arrangements for further stakeholder engagement.

For more details of stakeholder engagement, please refer to the standalone SEP for Batch 1 Subprojects.

6.1 Completed Stakeholder Engagements

As of project pre-assessment, completed stakeholder engagements include: (a) joint determination of facility site selection by PMO and relevant government departments; (b) intra-government coordination meetings, in which key issues related to project design and planning (such as coordination of project land) were addressed; (c) a series of information disclosure and public consultation activities carried out by the SIA unit, EIA unit, and feasibility study unit during the preparation of Batch 1 subprojects.

In the preparation stage of the Project, the SIA unit made a series of public consultations on the content and possible environmental and social impacts and risks of the Project through FGDs, key informant interviews, field surveys, and questionnaire surveys. They also timely communicated with the EIA unit and feasibility study unit on relevant findings, thus providing support for the optimization of the project design. Public engagement is mainly targeted to laborers engaged in project activities, village/community cadres and residents, surrounding communities and residents, schools, affected people by land acquisition, persons in charge of existing facilities, employers of supporting facilities and third-party management companies, persons in charge of PMOs and PIUs at all levels, key government functional departments, township governments, EIA unit, and feasibility study unit.

Among completed activities, the communication and coordination of the competent functional departments of the government, the information disclosure and public engagement in the EIA process of the Project and the preliminary

preparation stage of land acquisition and house demolition were carried out according to Chinese procedures.

According to ESF requirements, the SIA unit of the Project, under the coordination of PMOs at all levels, extended stakeholder engagements from the breadth and depth, covering more stakeholders in all links of the whole waste management chain from front-end waste collection to back-end supporting facilities and more clearly identifying the affected parties (especially vulnerable groups) and key government functional departments. In addition, they adopted more diversified means of information disclosure and engagement according to the characteristics, requirements, and influence of different stakeholders, to understand the attitudes, requirements, and suggestions of stakeholders for the Project more comprehensively and better improve the project design and management measures for different impacts and risks. Moreover, they systematically formulated appropriate action plans to guide the follow-up implementation of information disclosure, public consultation, community communication, and grievance response in different types of activities of Batch 1 subprojects.

6.2 Identification of Stakeholders

The main affected people/groups involved in each subproject and the organizations and departments with significant influence on the Project (especially for key approvals) shall be mainly identified to better guide the preparation, design, implementation, and operation of Batch 1 subprojects.

There are three main categories of affected parties in the Project:

a) Project laborers, including:

- Laborers for front-end waste collection and transportation and cleaning and maintenance of front-end collection facilities, mainly including direct workers hired by relevant PIUs and townships, contracted workers of township service outsourcing companies, and village and community workers;
- Workers for the operation and maintenance of WTSs, transfer truck maintenance centers, and sorting centers, mainly including direct workers hired by relevant PIUs;
- Workers for landfill closure and post-closure maintenance, mainly including direct workers hired by relevant PIUs and contracted workers of some service outsourcing companies; and
- Contractors' contracted workers for facility construction and equipment installation in the construction period;

b) Communities and residents, including sensitive communities and residents around the facilities and along the transportation route of transfer trucks;

c) Affected village collectives and villagers by land acquisition for some WTSs.

Vulnerable groups under the Project may include the following three categories: a) cleaners in village public welfare positions with no subsidies and insufficient safety risk prevention and control measures; b) waste collectors at informal waste dumps at the township level; and c) workers without labor contracts in some existing facilities.

Other stakeholders mainly include government departments at all levels, township governments, village/neighborhood committees, social organizations, local media, design and consultation units, and contractors in charge of project implementation and approvals. Key government departments for approvals and supervision of Batch 1 subprojects were identified, mainly including the planning and natural resources bureau for land approval and the health commission for the management and monitoring of occupational diseases of laborers.

6.3 Key Findings from Completed Stakeholder Engagements

The SIA unit fully communicated with stakeholders to ensure their engagement in preparing Batch 1 subprojects. In terms of project management, it is recommended to include the time requirements for the engagement of stakeholders affected by the Project and stakeholders with significant influence in the project implementation plan.

- **Stakeholder engagement shall be made as early as possible and throughout the project cycle, and high attention shall be paid to NIMBY of waste facilities in the early stage of the Project.** The opinions and suggestions of residents living in surrounding communities shall be fully taken for selection of waste facilities (such as waste collection points, waste sorting pavilions, and central waste collection sites). The SIA unit shall design effective mechanisms and procedures for the reference of PMO and the Construction Contractor during activity implementation. A sustainable information disclosure and public engagement mechanism shall be established during the construction and operation of waste disposal facilities (especially WTSs surrounded by concentrated communities and closure of the landfill with great impact). For sensitive areas such as residential areas and schools around waste treatment facilities, the management of noise, odor and other interference

during the operation of waste treatment facilities as well as road traffic safety shall be paid attention to and strengthened to minimize the impact on surrounding residents.

- **Relevant procedures for facility land shall be handled as soon as possible, and the subsequent arrangement plan shall be formulated.** For the situation where some existing facilities have incomplete or non-compliant land procedures, the provincial PMO, county PMO, and PIU shall communicate with the district/county governments and the planning and natural resources bureau as soon as possible, improve the relevant requirements and procedures for handling land procedures, and timely perform relevant procedures to obtain land use permits, to ensure that facility land complies with relevant regulations and planning requirements. For landfills, appropriate measures shall be taken to avoid conflicts with farmers and village collectives, strengthen community health and safety management, and ensure compliance with relevant domestic regulations according to the characteristics of land use and the land use plan after closure.
- **Sustainable operation of the facilities and the integrated urban-rural waste system shall be considered comprehensively in the project design.** The Chengcheng County ESC will jointly establish a town environmental sanitation office with each township. The environmental sanitation office will be headed by the business personnel of the Chengcheng County ESC mainly for guiding and managing the environmental sanitation work and facility operation and maintenance at the township level, and other members will be appointed by the town government. The front-end collection system of Linwei District remains unchanged. Because of the increased number of sanitation facilities and equipment allocated to towns and villages, the Linwei District ESC considers applying to the district finance department for a special management subsidy for rural sanitation, which will be directly allocated to towns and villages and distributed by township governments according to the situation of towns and villages. The government of Chencang District provides townships with a special subsidy of RMB 10,000 for sanitation and environmental governance every year. After the implementation of the Project, public welfare posts will be added according to relevant policies on environmental governance for rural revitalization, and special subsidies will be applied for according to the increased number of these posts.

- **Model selection of project equipment shall comply with the local specific natural conditions.** The investigation reveals that the rural areas in Xishan area of Chencang District are located in mountainous areas with complex roads; roads are steep between villages; when used for waste collection and transportation, the electromobile is insufficient in power and prone to traffic accidents. Therefore, it is suggested to consider more powerful vehicles for the configuration of collection trucks for rural areas in Xishan area of Chencang District. Considering the insufficient operation funds at the village level, it is suggested that the government or PIU should subsidize the insurance of village-level collection and transportation vehicles during project operation.
- **Labor engaged in relevant posts to transfer and disposal facilities have OHS risks, but the management level of different facilities varies.** China has issued many standards for the construction and operation of landfills and waste incineration plants, including standardized management of labor, safety and health. In terms of implementation, the construction standards for various facilities are well implemented. Waste incineration plants are usually in third-party operation mode. The general management system of operators is relatively standardized. However, the implementation of government regulations on labor protection and occupational health management of front-line operators during landfill operation (especially at the county and township levels) shall be further strengthened. Generally, the detection and evaluation of occupational hazards and occupational health examination are not implemented for workers of landfills and transfer facilities. The district and county PMOs and PIUs shall communicate with local health commissions as soon as possible to understand the relevant requirements and procedures and implement them in the project design, construction and implementation. For Chengcheng Landfill with residential areas within the SPZ, the above offices and units shall communicate with relevant government departments as soon as possible to understand the measures for the safety risk management of community residents within the SPZ in China, make a special assessment on health and safety risks according to relevant requirements of ESF of the World Bank, and timely disclose the assessment results.
- **Some direct workers have neither signed labor contracts nor been included in the social security system.** According to the investigation, among the existing facilities, some workers (including sorters, drivers, and mechanical equipment operators) of Yaotou Landfill and Chengcheng

Landfill operated by the Chengcheng County ESC and the sorting center operated by Linwei District Used Material Recovery Company have neither signed formal labor contracts nor been included in the social security system.

- **Some cleaners in public welfare posts at village and town levels are paid with low wage standards and varying additional subsidies. In addition, prevention measures are insufficient for safety risks.** There are many community workers in front-end villages and towns of Batch 1 subprojects, mostly cleaners in public welfare posts who are responsible for cleaning and partially transferring waste in villages and towns of Linwei District, Chengcheng County, and Chencang District. Now they work for 2-4 h per day. These posts are of an assistance nature. They are paid RMB 400-600 per month. They are given additional subsidies ranging from RMB 300 to RMB 900 in some towns with better economic strength, but there is no additional subsidy in some towns with poor economic strength. Cleaners are not covered by accident insurance in a few towns; small waste transfer trucks provided in some towns without procedures and insurance have road traffic safety risks.
- **The working conditions of front-end community workers shall be paid attention to and their safety awareness and capability shall be improved for establishing an effective integrated urban-rural waste system.** For example, improve the implementation of the security system for rural sanitation workers, including signing labor contracts, providing safety and other training, and purchasing accident insurance for them; improve GRM construction, and extend the functions of the county (district) sanitation department to guide and supervise the management of front-end community workers.
- **There are few waste collectors at informal waste dumps at the township level.** The four landfills involved in Batch 1 subprojects are all under closed management, and residents living in surrounding communities and other personnel are unable to get access to relevant landfills. Therefore, there are no waste collectors during operation. However, in rural areas within the project area, domestic waste is generally dumped at informal waste dumps without access restrictions. Most of the recyclable waste in rural areas is collected and sold by villagers themselves. Therefore, the proportion of recyclable waste at informal waste dumps at the village level is very small, and there are few waste collectors there. There is a small amount of recyclable waste at the informal waste dump at the township level, so a small number of

surrounding villagers will collect it. According to the interview, there are up to one to two waste collectors at each informal waste dump at the township level. There are about 36 informal waste dumps within the township range of Linwei District, Chengcheng County, and Chencang District. It is preliminarily estimated that there are about 50 waste collectors at informal waste dumps at the township level in Batch 1 subproject area. The main income of each waste collector per month is about RMB 120-240, accounting for less than 5% of his household income. For this group, on the basis of respecting their willingness and working ability, they can be first included in the future urban-rural waste collection and transportation system during project design and provided with proper posts (such as village cleaners and agricultural film collection and transfer workers) through consultation with the community.

- **Waste mulch films that cannot be reused in rural areas can be incorporated into the integrated urban-rural system of sanitation collection and transportation and transferred to terminal facilities for disposal (such as landfill and incineration in waste incineration plants) to avoid leakage into the environment.** According to the investigation, the mulch film used in rural areas of districts and counties where the Project is located is mostly about 0.4 mm thick. The broken film mixed with soil results in extremely low recycling and reuse value. Now the low recycling price of mulch film makes farmers reluctant to recycle it. The mulch film collected in the form of appropriate subsidies shall be put into the sanitation collection and transportation system as domestic waste and transferred to the waste incineration plant for disposal. If the government can give policy subsidies for mulch film recycling to make its recycling price reach RMB 3.4-3.8 per kilogram, this will improve the enthusiasm of farmers to collect mulch film. PMOs and PIUs can coordinate relevant villages (groups) to develop and implement participatory arrangements for agricultural film collection and transfer.

6.4 Completed Information Disclosure during Preparation

In the process of preparing the environmental and social documents of Batch 1 subprojects, the SIA unit and EIA unit fully communicated with the provincial PMO, district/county PMO, and relevant government functional departments on identified risks and impacts, treatment plans, and measures to ensure that the suggestions and findings are better combined with the actual situation of the Project.

On September 23, 2022, Shaanxi Foreign Loan Project Management Office (hereinafter referred to as "Shaanxi PMO") publicized the first drafts of specific environmental and social documents of Batch 1 subprojects (including EIA, social audit report, SIA, SEP, LMP, and resettlement plan) and the first drafts of framework documents of the overall project (including ESMF, ESCP, SEF, and LMP framework) through its official website (see Figure 6-1).

Figure 6-1 Publicity of First Drafts of Relevant Environmental and Social Documents of Batch 1 Subprojects

According to WB's comments and the feedbacks from the public, Shanxi PMO further modified draft E&S documents that were cleared by WB in November 2022. After then, Shaanxi PMO re-disclosed the final E&S documents on the official website of http://sndrc.shaanxi.gov.cn/fgyw/tzgg/FBjQbe.htm on 23 November 2022. Please refer to Figure 6-2.

中国政府网 | 国家发改委 | 省人大常委会 | 省政府 | 省政协　　繁簡 | 邮箱 | 网站地图　无障碍浏览 | 智能问答　本站支持IPv6

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陕西省发展和改革委员会
Shaanxi Provincial Development and Reform Commission

热门搜索：成品油　光伏　项目

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利用世界银行贷款城乡塑料垃圾减量项目（二期）社会与环境评估文件（终稿）公示

来源：外贷办　点击量：6　发表时间：2022-11-23 11:38

按照世行贷款项目前期准备程序和国内有关要求，2022年9月23日—10月14日，我们对世界银行贷款城乡塑料垃圾减量项目（二期）社会与环境评估文件（初稿）进行了第一次公示，公示期内未收到异议。目前，根据前期工作情况，项目社会与环境评估文件（终稿）已修改完成，现按要求进行第二次公示。

一、项目名称及概要

项目名称：利用世界银行贷款城乡塑料垃圾减量项目（二期）

项目概要：本项目涉及陕西省黄河流域和长江流域的11个区县（含宝鸡市本级活动）。项目投资活动类型被分为三类：1）建设类项目，2）技术援助类项目（包括能力建设和课题研究等），及3）基于绩效的激励支付机制（PBIFM）的农膜治理项目及。建设类项目主要包括生活垃圾收集（如村级垃圾收集屋）、转运设施（如中转站）、垃圾资源化终端（如大件垃圾拆解中心等）、现有垃圾填埋场封场等。

本项目将探索农村垃圾回收利用处理和塑料垃圾减量化的有效路径和模式，推动将城镇垃圾专项处理设施和处理能力向乡村延伸覆盖，构建统筹城乡环卫设施一体化的“全链条”生活垃圾治理体系，全面提升城乡环卫垃圾一体化的路径和模式，增强环境保护和垃圾治理的系统性、整体性、协同性，探索城乡生态环境保护和高质量发展的“西部模式”，贡献城乡垃圾减量的“西部智慧”具有不可替代的地域优势和政策优势。

二、建设单位联系方式

建设单位：陕西省利用国外贷款项目办公室

地　址：西安市新城区省政府大院6号楼4层

联 系 人：崔静涛　电话：029-63918847

邮　箱：waidaiban@163.com

三、社会评估咨询机构联系方式

评价单位：陕西科社商务信息咨询有限公司

地　址：西安市碑林区南二环西段大洋时代国际

联 系 人：杨凯　电话：15389408263

四、环境评估咨询机构联系方式

评价单位：中圣环境科技发展有限公司

地址：西安市雁塔区丈八一路旺都D座

联系人：李雁　电话：15667080072

五、公示时间

2022年11月23日—12月7日。

六、征求公众意见的主要事项

为听取社会各界对项目社会影响评价、环境影响评价、利益相关方参与及移民安置方面有关工作的意见和建议，在2022年9月已经公示了10项环境与社会评估文件的初稿，此后又根据世行意见对这10项环境与社会评估文件初稿进行了更新，现将更新后的环境与社会评估文件（终稿）的相关信息进行公示，再次向公众征求意见和建议。

七、公众提出意见的主要方式

自公示发布之日起14日内公众可采取发送邮件、信函、传真、致电等方式，向建设单位、编制机构发表对项目及移民安置工作的意见和看法，评价单位将真实记录公众的意见和建议。

附件：1 SA-社会尽职调查报告（终稿）-202211-公示.pdf
2 SIA-社会影响评价报告（终稿）-202211-公示.pdf
3 LMP-劳动者管理程序（终稿）-202211-公示.pdf
4 RAP-移民安置计划（终稿）-202211-公示.pdf
5 SEP-利益相关者参与计划（终稿）-202211-公示.pdf
6 ESMF-环境与社会管理框架（终稿）-202211-公示.pdf
7 LMPF-劳动者管理程序框架（终稿）-202211-公示.pdf
8 SEF-利益相关者参与框架（终稿）-202211-公示.pdf
9 ESCP-环境与社会承诺计划（评估阶段）-202211-公示.pdf
10 EIA-环境影响评价报告（第一批子项目）终稿202211-公示.pdf

陕西省利用国外贷款项目办公室
2022年11月23日

Figure 6-2 Final E&S Documents Disclosure

6.5 SEP for Future Implementation

Based on the identification and analysis of stakeholders in each subproject, the responsibilities and resource arrangements for stakeholder engagement are specified for the Office of Steering Committee, Shaanxi PMO, Baoji PMO, Linwei District PMO, Chengcheng County PMO, Chencang District PMO, and PIUs, and detailed information disclosure and consultation plans are prepared in different stages for different categories of implementation.

These plans focus on findings in the social audit, including the inconsistency between the labor employment terms and working conditions of sanitation workers and Chinese laws and regulations, OHS management of key facilities such as transfer stations and landfills, subsequent land use of some landfills involving land leasing, and the health and safety of residents within the SPZ of Chengcheng Landfill. Laborers, relevant communities, and relevant government departments (including planning and natural resource bureaus, health commissions, and township governments) are fully communicated with in the preparation stage of the Project, to put forward reasonable solutions as soon as possible and disclose relevant assessment documents, LMP, and GRM for labors and communities.

During project construction and operation, information disclosure and public engagement will be continuously made for two major target groups, namely labors and community residents, mainly including:

- For laborers, disclose the contents related to LMP of the Project in the early stage of project construction and operation, and optimize GRM through meaningful consultation.
- For community residents, the site selection of front-end collection facilities shall be fully negotiated and discussed with community residents; reasonable suggestions from community residents shall be taken for site selection and operation of facilities such as transfer stations and sorting centers to reduce noise, odor interference and road traffic safety impacts on adjacent communities; for the community residents around the landfill, especially within the SPZ of Chengcheng Landfill, meaningful consultation shall be made with them during the special assessment of health and safety risks to fully understand their views and requirements and incorporate their reasonable requirements into relevant management schemes.
- Particularly, specific information disclosure and consultation plans have been developed for vulnerable groups considering their vulnerability characteristics and special requirements.

The detailed plan, including the content, target group, time, place of, and responsible organization for engagement, can refer to the stakeholder engagement plan of Batch 1 subprojects.

7 Social Impact Analysis

7.1 Overview of Social Risk Classification

According to the conclusions of social risk screening and audit, this section mainly analyzes the possible social risks and impacts of activities of Batch 1 subprojects, including negative impacts/risks and positive benefits, and proposes risk mitigation measures and benefit enhancement measures in combination with public engagement. This part analyzes the identified major social risks and impacts mainly in the following steps:

First, analyze possible impacts and risks of proposed investment activities in combination with social background information and public engagement results;

Secondly, analyze the risk management measures that have been taken by district and county PMOs and PIUs in actual management and design of the Project in combination with the results of public engagements in social audit and SIA, and evaluate the social performance and possible gaps;

Then, according to ESSs, the SIA unit proposes mitigation measures in the "mitigation hierarchy".

Finally, the community under SIA, Shaanxi PMO, district and county PMOs, and PIU negotiate and confirm the mitigation measures proposed in this report, and specify the responsibilities of relevant internal and external departments and the timing of measure implementation.

See Table 7-1 for the summary of possible social risks from activities of Batch 1 subprojects and risk levels.

Table 7-1 Summary of Social Risks and Impacts of Batch 1 Subprojects

Project stage	Facility/Project activity		Laborer risk	Community health and safety	Remaining problem of land approval	Project land and resettlement	NIMBY risk	Risk of exclusion	Insufficient engagement
Preparation and design*	Village/community collection facilities		M	NA	NA	NA	M	M	M
	Transfer facilities (WTSs)		M	L	NA	M	M	M	M
	Sorting Center (Linwei District)		M	L	NA	L	M	M	M
	Transfer truck parking lots (Chencang District)		NA	NA	NA	L	L	M	M
	Landfill closure	Majiagou Landfill in Linwei District	NA	NA	S	NA	M	M	M
		Chengcheng Landfill	NA	NA	L	NA	M	M	M
		Yaotou Landfill in Chengcheng County	NA	NA	S	NA	M	M	M
		Changshougou Landfill in Baoji City	NA	NA	L	NA	M	M	M
Construction	Village/community collection facilities		M	M	NA	L	L	M	M

Project stage	Facility/Project activity		Laborer risk	Community health and safety	Remaining problem of land approval	Project land and resettlement	NIMBY risk	Risk of exclusion	Insufficient engagement
	Transfer facilities (WTSs)		S	M	L	M	M	M	M
	Sorting Center (Linwei District)		M	M	NA	L	M	M	M
	Transfer truck parking lots (Chencang District)		M	M	NA	L	L	M	M
	Landfill closure	Majiagou Landfill in Linwei District	S	M	S	NA	M	M	M
		Chengcheng Landfill	S	S	L	NA	M	M	M
		Yaotou Landfill in Chengcheng County	S	M	S	NA	M	M	M
		Changshougou Landfill in Baoji City	S	S	L	NA	M	M	M
Operation	Village/community collection facilities		M	M	NA	L	L	M	M
	Transfer facilities (WTSs)		S	M	L	L	M	M	M
	Sorting Center (Linwei District)		M	M	NA	L	L	M	M
	Transfer truck parking lots (Chencang District)		M	M	NA	L	L	M	M
	Landfill closure**	Majiagou Landfill in Linwei District	S	M	S	NA	L	M	M
		Chengcheng Landfill	S	S	L	NA	L	M	M
		Yaotou Landfill in Chengcheng County	S	M	S	NA	L	M	M
		Changshougou Landfill in Baoji City	S	S	L	NA	L	M	M

The risk level (the same below) is shown as follows:

H- High risk	S- Substantial risk	M- Moderate risk	L- Low risk	NA- Not applicable

* See the social audit for the risk level of the current stage, existing facilities, and completion of land use.

**Mainly include risks associated with post-closure operation and management and land reuse.

7.2 Risks in Labor and Working Conditions

7.2.1 Overview of Laborer

The workers engaged in the construction and operation of Batch 1 subprojects are mainly direct workers, contracted workers, and community workers. According to the screening at this stage, workers of major suppliers have not engaged in Batch 1 subprojects and will be tracked and confirmed in the subsequent process of project implementation and monitoring. Including:

- **Direct workers** are relevant staff directly hired by PMOs and PIUs at all levels of Batch 1 subprojects to engage in projects or activities, mainly for waste cleaning and transfer in front-end urban public areas in Linwei District, Chengcheng County, and Chencang District and operation and maintenance of WTSs, sorting centers, and closed landfills.

- **Contracted workers** are persons hired by third parties (such as contractors and subcontractors) to engage in the work related to the core functions of the Project. Under Batch 1 subprojects, the contracted workers are mainly the workers of the project facility construction contractors and the relevant workers hired by the third-party outsourcing service companies (such as township waste collection and transportation and leachate and landfill gas treatment in the landfill) during operation.
- **Community workers** are persons hired by relevant communities to participate in project-related activities and provide labor. Under the Project, they are mainly village cleaners and transfer workers, as well as persons responsible for cleaning and management of waste collection points and central waste collection sites in front-end villages and towns. These posts are generally listed as village-level public welfare posts, for which the personnel are hired by villages.

7.2.2 Analysis on Potential Risks in and Impacts on Laborers

According to the social audit of existing facilities of Batch 1 subprojects, new facilities of the Project, and relevant contents to the reconstruction and expansion of existing facilities, the labor risks of Batch 1 subprojects mainly focus on working terms and conditions and OHS. Major potential risks in and impacts on laborers are analyzed as follows according to different facilities.

- **Collection facility**
  - **Construction period**

Workers during the construction of the front-end collection facilities mainly include the contractor workers (contracted workers) responsible for small civil works in Linwei District and Chencang District and the management personnel (direct workers) responsible for routine management[20]. Direct workers are involved in low-level risks, mainly possible accident risks in inspecting the construction site which can be avoided by strengthening the safety awareness training and construction site management. They are generally covered by accident insurance. The main risks in contractor workers responsible for small civil works are mainly the risks of construction safety accidents due to poor safety awareness and payment of wages in full amount and on time.

  - **Operation period**

The main laborers involved in the operation period of the front-end collection facilities/systems include cleaners and transfer workers for front-end waste

[20] The front-end facilities in Chengcheng County only involve the provision of vehicles for the front-end collection system and do not involve the contractor's contract workers.

collection and transportation and cleaning and maintenance of front-end facilities as well as the operation and maintenance personnel of these facilities. These workers include direct workers of the environmental sanitation departments for urban waste collection and transportation; direct workers and contracted workers at the township level for waste collection and transportation within townships, and community workers for rural waste collection and transportation. After the completion of the Project, the management form of community workers in the charge of villages (groups) and communities will be maintained, but standardized requirements will be put forward for the work content and management of community workers according to integrated urban- rural environmental sanitation.

According to the social audit, the main risks **faced by sanitation workers (including direct workers and contracted workers) in urban areas and townships** are similar, including:

- There is a gap between the working conditions and treatment of workers and regulations: For example, workers have not signed labor contracts, they work for a long time, and there is a gap between the wage standards and overtime subsidies and the standards specified in regulations.
- OHS risk: It includes accident injury caused by vehicle scratches, high-temperature operation, and infectious diseases caused by inadequate protection and exposure to pathogens (including Covid-19) for sanitation workers; transfer drivers face the risk of traffic accidents.

New workers for new collection facilities in the future operation period will also face the above risks. Among new collection facilities, collection points will be provided with ventilation, dedusting, deodorization, and other protection facilities, which will help reduce the concentration of harmful substances there. For road traffic safety risk, electric collection trucks with better performance and transfer trucks with compression function are provided in Chengcheng County and Chencang District, which helps reduce driving safety risk.

Community workers mainly include village cleaners and transfer workers. Generally, they work for a short time every day and mainly face the following risks: They have not signed labor contracts, not covered by personal accident insurance, but faced the risk of infectious diseases caused by inadequate protection and exposure to pathogens (such as Covid-19). For transfer workers, they may also face the risk of traffic safety accidents due to the vehicle and poor road conditions in some areas, especially in some mountainous areas in rural areas of Chencang District, Baoji City.

- **Transfer facility**

The transfer facilities in Linwei District, Chengcheng County, and Chencang District are mainly new and reconstructed WTSs with compression function. The main labor risks of workers involved in the construction period and operation period are analyzed as follows:

- **Construction period**

The workers engaged in the construction of the transfer facilities mainly include the management personnel (direct workers) of the Linwei District ESC, Chengcheng County ESC, and Urban Administrative and Law Enforcement Bureau of Chengcang District as well as contractor workers (contracted workers) engaged in civil construction and equipment installation. In the construction stage, the management personnel of PIUs mainly face the accident injury risk on the construction site at a low level, which can be avoided by strengthening safety awareness training and construction site management.

The construction of WTSs mainly involves civil construction and equipment installation. According to the design scale, large-scale civil construction and equipment installation are not involved. The major risks in contractor workers (contracted workers) engaged in the construction of WTSs include construction safety risk, mechanical operation accident risk, and payment of wages not on time.

- **Operation period**

The workers engaged in the operation of WTSs are direct workers of PIUs. According to the social audit, risks faced by workers in different posts are as follows:

- Equipment operator of WTSs: OHS risks caused by noise and odor, infectious diseases (including Covid-19), excessive working hours, and insufficient wages and overtime subsidies;
- Driver and attendant of WTSs: traffic safety accident risk;
- Cleaner of WTSs: long working hours, insufficient wages and overtime subsidies, and infectious diseases (including Covid-19);

The workers to be engaged in the future operation of reconstructed and new WTSs will face similar risks and impacts as workers engaged in the operation of existing WTSs do. Reconstructed and new transfer stations are of compression transfer process and horizontal compression technology to provide better sealing and effectively reduce odor leakage and provided with dedusting and deodorization equipment to ensure clean air and reduce the concentration of harmful substances in the waste station.

Contractor workers engaged in the **construction of transfer truck maintenance centers** as supporting facilities in Chencang District face the following risks: construction safety accidents and payment of wages not on time; major management personnel and vehicle maintenance personnel hired by PIU

engaged in the **operation** of these centers mainly face the safety accident risk caused by improper operation during maintenance at a low level, which can be avoided by standardizing the operation management process and strengthening safety awareness training.

- **Sorting facility**

Among Batch 1 subprojects, a sorting center was reconstructed in Linwei District. The potential risks in and impacts on the workers involved are as follows:

- **Construction period**

The workers involved mainly include the management personnel ("direct workers") of the Linwei District ESC and the contractor workers ("contracted workers") engaged in civil construction and equipment installation. In the construction stage, the management personnel mainly face the accident injury risk on the construction site at a low level, which can be avoided by strengthening safety awareness training and construction site management.

The reconstruction of sorting facilities involves civil construction and equipment installation. Major risks in contractor workers include: construction safety, work safety in operating mechanical equipment, and payment of wages not on time.

- **Operation period**

The workers involved mainly include the operation and maintenance workers of the sorting center, which will be hired by the Linwei District Used Material Recovery Company as direct workers. According to the social audit, the major risks in these workers are as follows:

- Management post: The personnel in management posts receive the salary and welfare benefits in overall conformity with the Labor Law and ESS2 of the Word Bank and face low OHS risks, but they have not signed formal written labor contracts.
- Equipment operator and sorter: They have neither signed formal labor contracts nor enjoyed social security benefits or fixed rest days. In addition, they face the noise/dust impact in the workplace and risks of accidental scratches in sorting waste materials, work safety in operating mechanical equipment, fire, and infectious diseases caused by inadequate protection (including Covid-19).
- Driver: The risks in working conditions include no social security benefits and fixed rest days, and other risks are mainly road safety accidents.

The workers engaged in the future operation of reconstructed sorting facilities will also face the above risks. Reconstructed sorting facilities will help improve the working environment of workers and be provided with a set of plastic, metal, waste paper, and other sorting equipment. Compared with the current

labor-intensive sorting mode, the reconstructed sorting center is of a higher degree of mechanization, which will help reduce the risk of accidental scratches of sorters in sorting waste materials.

- **Landfill closure**

Batch 1 subprojects also include the closure of four landfills in Linwei District, Chengcheng County, and Baoji City (municipal level). The potential risks in and impacts on the landfills during closure and in subsequent maintenance period mainly include:

- **Closure Period (construction period)**

The workers involved mainly include the management personnel (direct workers) of the Linwei District ESC, Chengcheng County ESC, and Baoji Solid Waste Treatment Center as well as contractor workers (contracted workers) engaged in closure construction. In the closure stage, the management personnel face relatively low risks, mainly including possible accident risks on the construction site, which can be avoided by strengthening the construction site safety management and safety awareness training.

Contractor workers engaged in the closure subproject mainly face the following risks:

- OHS risks caused by unstable piles in landfills, combustion and explosion of landfill gas, gas poisoning, pathogenic bacteria and infectious diseases (including Covid-19), and high-temperature operation during construction;
- Possible risks in terms of working conditions, including no accident insurance and payment of wages not on time.

- **Subsequent Maintenance Period (operation period)**

The workers involved after landfill closure mainly include those engaged in landfill operation and maintenance, and leachate and landfill gas treatment. Operation and maintenance are mainly undertaken by direct workers; leachate and landfill gas treatment are generally outsourced to third-party companies, which involves contracted workers. Major risks are:

- Whether the labor contract management, working hours, and remuneration of direct workers comply with national laws and regulations;
- OHS risks of contracted workers, mainly including the poisoning impact caused by exposure to chemicals, safety accidents caused by combustion and explosion of landfill gas, and pathogenic bacteria and infectious diseases (including Covid-19).

According to the feasibility study, the landfill closure subproject includes surface water runoff control, drainage, anti-seepage, leachate and landfill gas

collection and treatment, pile stabilization, vegetation selection, and coverage. After the landfill closure, the on-site environment will be improved to a certain extent and the adverse factors to human health and safety will be reduced.

7.2.3 Existing Labor Management Measures

According to the audit, PIUs of Batch 1 subprojects are the relevant government departments of districts and counties or their subordinate organizations, which generally carry out personnel management, work safety, and production in accordance with relevant national laws and regulations. District and county PIUs (sanitation departments) of Batch 1 subprojects have similar management systems for personnel, work safety, and production, including:

- *Management Measures for Recruitment and Use of Workers*
- Work Safety System
- *Management System for Mechanical Equipment in Landfill*
- Work Safety Management System for Cleaning and Transportation
- *Reward and Incentive Mechanism for Drivers of Operation Vehicles*
- *Assessment Measures for Fine Management of Environmental Sanitation*
- *Environmental Sanitation Quality Standards and Operation Specifications*
- Emergency Plan for Environmental Emergencies

According to the audit, the existing main management measures for laborers in districts and counties are listed in Table 7-3. There is still a gap between the management of direct workers, contracted workers, and community workers by the responsible subjects of the existing facilities under Batch 1 subprojects in terms of labor contracts, remuneration, rest and vacation arrangements and overtime subsidies, and OHS and the requirements of China's *Labor Law* and *Labor Contract Law* and ESS2 of the World Bank.

Table 7-2 Existing Labor Management Measures in Districts and Counties

Facilities	Category of Worker		Working Conditions and Terms	Occupational health and safety	Grievance Redress Mechanism	PIU
Linwei District						
Collection and transfer facility	Urban sanitation worker	Direct worker	All workers have signed the labor contracts. Female workers under 55 and male workers under 60 have been covered by the social security system. Female workers above 55 and male workers above 60 have been covered by employer liability insurance[21]. PPE shall be distributed regularly, and heatstroke prevention articles and subsidies shall be distributed in summer.	Management systems are formulated for transfer drivers, such as the driver management system and transfer truck management system. Road safety training shall be conducted for drivers at least once a month, vehicles shall be overhauled and maintained regularly, and transfer trucks shall be covered by statutory automobile liability insurance and commercial insurance. Transfer trucks with GPS shall work along the fixed route and at a specified time and limited speed.	Certain complaint and grievance procedures have been formulated internally for level-by-level grievances; complaints and grievances to the compliant handling bureau and human resources and social security bureau are also acceptable.	Linwei District ESC
	Township sanitation worker	Direct worker	Direct workers such as cleaners and transfer workers are paid wages on a monthly basis and provided with relevant safety training and PPE on a regular basis in towns.	Regulations on driving safety for transfer workers include driving along the specified route at a specified time and low speed, regular vehicle maintenance, and irregular training for drivers on driving safety awareness.	Certain complaint and grievance procedures are formulated.	Township governments
		Contracted workers				Township government
	Village sanitation worker	Community worker	The village committees can timely pay the wages/salaries of community workers such as cleaners and transfer workers.	But there is no road safety management system or relevant safety training.	Complaints and grievances can be made to village committees and township governments.	Village committee

[21] As specified by national policies, female workers aged 55 or older and male workers aged 60 or older shall not be insured as employees, and the employer shall stop insuring their employees from the month when they reach their retirement age.

Facilities	Category of Worker	Working Conditions and Terms	Occupational health and safety	Grievance Redress Mechanism	PIU
Sorting facility	Direct worker	Administrative personnel enjoy the rights and interests of non-fixed term contracts and other legal rights and interests and are paid wages on a monthly basis.	Pre-job work safety training, disinfection, epidemic prevention and fire safety systems, and PPE are available, but formal work safety and emergency management systems and relevant management measures for occupational diseases are unavailable.	Certain complaint and grievance procedures have been formulated internally for level-by-level grievances; complaints and grievances to the compliant handling bureau and human resources and social security bureau are also acceptable.	Linwei District Used Material Recovery Company
Landfill closure (Majiagou Landfill)	Direct worker	All workers have signed written labor contracts and are paid wages on a monthly basis; workers in conformity with the payment conditions for social security of urban employees are covered by the social security system.	Safety systems and emergency measures are established to manage OHS risks during site operation, including operation specifications of employees, PPE wearing, and operation specifications of mechanical equipment. Environmental risk prevention measures, early warning mechanisms, and institutional arrangements have been developed. Environmental emergency and fire emergency exercises shall be organized once a year, and the staff of the emergency organization of the landfill must participate.	Certain complaint and grievance procedures have been formulated internally for level-by-level grievances; complaints and grievances to the compliant handling bureau and human resources and social security bureau are also acceptable.	Linwei District ESC
	Contracted workers	All workers have signed the labor contracts; have been paid wages	Safety measures such as training and PPE distribution have been taken to manage OHS risks of employees;		Henan New Power

Facilities	Category of Worker		Working Conditions and Terms	Occupational health and safety	Grievance Redress Mechanism	PIU
			and overtime subsidies on a monthly basis; have rest days.	however, the formal emergency management system and relevant management measures for occupational diseases are unavailable.		Industrial Co., Ltd. and Beijing Yunchuang Tiandi Environmental Protection Technology Service Co., Ltd.
Chengcheng County						
Collection and transfer facility	Urban sanitation worker	Direct worker	Some workers have signed the labor contracts. Female workers under 55 and male workers under 60 have been covered by the social security system. Female workers above 55 and male workers above 60 have been covered by accident insurance. PPE shall be distributed regularly, and heatstroke prevention articles and subsidies shall be distributed in summer.	A unified system has been established for the management of transfer trucks, requiring trucks with GPS to drive in an enclosed manner throughout the specified route. The sanitation center provides the driver and attendant with pre-job training as well as safety education and training once a week.	Certain complaint and grievance procedures have been formulated internally for level-by-level grievances; complaints and grievances to the compliant handling bureau and human resources and social security bureau are also acceptable.	Chengcheng County ESC
		Community worker	All workers have signed the labor contracts, been paid wages higher than the current minimum wage standard in Shaanxi Province, and been covered by insurance. The 8-hour working system is	But there is no road safety management system or relevant safety training.	Certain complaint and grievance procedures have been formulated internally for level-by-level grievances; complaints and	Chengcheng County Mining Bureau

Facilities	Category of Worker		Working Conditions and Terms	Occupational health and safety	Grievance Redress Mechanism	PIU
			implemented. Workers take rest by turns and are provided with PPE on a regular basis.		grievances to the compliant handling bureau and human resources and social security bureau are also acceptable.	
	Township sanitation worker	Direct worker	Only some township and direct workers have signed simple labor contracts. Workers are paid wages on a monthly basis and provided with relevant safety training and PPE on a regular basis.	Drivers shall drive along the specified route at a specified time and low speed. Regular vehicle maintenance and irregular training for drivers on driving safety awareness shall be conducted.	Certain complaint and grievance procedures are formulated.	Township governments
	Village sanitation worker	Community worker	The village committees can timely pay the wages/salaries of community workers.	But there is no road safety management system or relevant safety training.	Complaints and grievances can be made to village committees and township governments.	Village committee
Landfill closure (Yaotou Landfill and Chengcheng Landfill)	Direct worker		Female workers under 55 and male workers under 60 with labor contracts have been covered by the social security system. Workers without labor contracts have been covered by accident insurance. Workers are paid wages on a monthly basis.	Safety systems and emergency measures are been established to manage OHS risks, such as stipulating that workers must wear PPE during work, disinfecting the landfills every day, organizing fire inspection frequently, and clearly prohibiting drivers from driving after drinking, talking on the phone and smoking during driving. Reward and punishment systems have also been formulated to restrict drivers.	Certain complaint and grievance procedures have been formulated internally for level-by-level grievances; complaints and grievances to the compliant handling bureau and human resources and social security bureau are also acceptable.	Chengcheng County ESC
Chencang District						

Facilities	Category of Worker		Working Conditions and Terms	Occupational health and safety	Grievance Redress Mechanism	PIU
Collection and transfer facility	Urban sanitation worker	Direct worker	Workers in conformity with the payment conditions for social security of urban employees are covered by the social security system and have signed labor contracts. Workers are paid wages on a monthly basis. PPE shall be distributed regularly, and heatstroke prevention articles and subsidies shall be distributed in summer.	A unified system has been established for the management of transfer trucks, requiring trucks with GPS to drive in an enclosed manner throughout the specified route. The sanitation center provides the driver and attendant with pre-job training as well as safety education and training once a week.	A relatively formal GRM has been formulated for employees.	Chencang District Waste Management Service Center
					Certain complaint and grievance procedures have been formulated internally for level-by-level grievances; complaints and grievances to the compliant handling bureau and human resources and social security bureau are also acceptable.	Chencang District Environmental Sanitation Station
	Township sanitation worker	Direct worker	Only direct workers have signed simple labor contracts. Workers are paid wages on a monthly basis and provided with relevant safety training and PPE on a regular basis.	Drivers shall drive along the specified route at a specified time and low speed. Regular vehicle maintenance and irregular training for drivers on driving safety awareness shall be conducted.	Certain complaint and grievance procedures are formulated.	Township governments
	Village sanitation worker	Community worker	The village committees can timely pay the wages/salaries of community workers.	But there is no road safety management system or relevant safety training.	Complaints and grievances can be made to village committees and township governments.	Village committee
Baoji City						

Facilities	Category of Worker	Working Conditions and Terms	Occupational health and safety	Grievance Redress Mechanism	PIU
Landfill closure (Changshougou Landfill)	Direct worker	All workers have signed the labor contracts. Female workers under 55 and male workers under 60 have been covered by the social security system, including employment injury insurance, endowment insurance, and medical insurance. Female workers above 55 and male workers above 60 have been covered by employer liability insurance. New workers are provided with pre-job training. Workers are paid wages on a monthly basis higher than the current minimum wage standard in Shaanxi Province.	Safety systems and emergency measures are established to manage OHS risks. These systems have standardized requirements for operation specifications of employees, PPE wearing, operation specifications of mechanical equipment, equipment maintenance, environmental monitoring frequency, and regular site disinfection.	Certain complaint and grievance procedures have been formulated internally for level-by-level grievances; complaints and grievances to the compliant handling bureau and human resources and social security bureau are also acceptable.	Baoji Solid Waste Treatment Center
	Contracted workers	Workers have signed labor contracts, been paid wages on a monthly basis far higher than the current minimum wage standard in Shaanxi Province and overtime subsidies. Workers take rest by turns.	A relatively complete power plant management system is formulated for management, including the power plant safety management system, maintenance system for equipment safety, patrol inspection system, regular test and switchover system, operation data recording specification system, and duty system.	Certain complaint and grievance procedures have been formulated internally for level-by-level grievances; complaints and grievances to the compliant handling bureau and human resources and social security bureau are also acceptable.	Xi'an Yifeiming dake Regeneration Resource Utilization Co., Ltd.

7.2.4 Risk Level Assessment on Labor

There are relatively low risks in laborers and working conditions during construction as civil construction of front-end facilities only accounts for a very small scale, but there are "substantial" risks in community worker management during operation as the labor employment terms and safety risk management may be insufficient; there are "moderate" risks in labor and working conditions during construction of transfer stations, Waste transfer truck parking & maintenance centers, and sorting centers as their civil construction only accounts for a small scale, but there are "moderate" and "substantial" risks in employment terms, working conditions, and OHS of sanitation workers during operation; there are "substantial" OHS risks as both leachate and landfill gas treatment are involved for landfills, landfill closure, and post-closure operation and maintenance.

China and Shaanxi Government have established comprehensive regulations to prevent SEA/SH risks. The local governments have been making efforts to enhance law enforcement and improve the business enabling circumstance.

The PIUs are committed to providing a healthy, effective work environment where sexual harassment is not accepted because it is against the law and social ethics, and will not be tolerated.

Additionally, there are existing SEA/SH prevention services available from service providers. SEA/SH prevention service providers are critical not only for supporting the project in addressing any case of SEA/SH that may arise, but also in assisting the project to proactively prevent incidences of SEA/SH. They are including:

- Health service providers: community hospitals, maternal and child health care hospitals.
- Justice service providers: community police stations; public security bureaus and courts of district level.
- Social service providers: district legal aid center, district women's federation, community women officers.

According to the social audit, it was reported that there were no SEA/SH that occurred before in project area. Therefore, the SEA/SH risks to workers are low.

In general, there are "**substantial**" risks in labor and working conditions of the Project. The risk level faced by each subproject in terms of labor and working conditions is shown in Table 7-3.

Table 7-3 Risk Level of Labor and Working Conditions

Subproject		Construction period		Operation period	
		Risk	Level	Risk	Level
Collection facility	Waste collection point	Construction noise and dust; safety accidents caused by	M	No written labor contract; infectious disease; and traffic	M

Subproject		Construction period		Operation period	
		Risk	Level	Risk	Level
	Waste sorting pavilion Central waste collection site	poor safety awareness of workers; payment of wages not on time;		safety of transfer drivers	
Transfer facility	WTS	Construction safety; mechanical operation accidents; payment of wages not on time	S	OHS risks caused by noise, odor, and sewage; work safety and accidental injury in operating mechanical equipment; extremely long working hours; traffic safety accident	S
	Waste transfer truck parking & maintenance center	Construction safety; payment of wages not on time	M	Safety accidents and accidental injuries caused by improper operation of mechanical equipment in repairing vehicles	M
Sorting facility	Sorting center	Construction safety; mechanical operation accidents; payment of wages not on time	M	OHS risks caused by noise, odor, and sewage; work safety and accidental injury in operating mechanical equipment; extremely long working hours; traffic safety accident	S
Disposal facility	Landfill closure	OHS risks caused by unstable piles in landfills, combustion and explosion of landfill gas, gas poisoning, pathogenic bacteria and infectious diseases, and high-temperature operation	S	Poisoning impact caused by exposure to chemicals; safety accidents caused by combustion and explosion of landfill gas; and pathogenic bacteria and infectious diseases	S

7.2.5 Design Optimization and Mitigation Measures against Laborer Risks

According to the risk factors identified in SIA, after consulting with Shaanxi PMO and PIUs, the SIA unit has formulated relevant design optimization and mitigation measures for the working conditions of laborers from the aspects of improving labor contracts, remuneration, and working hours, strengthening OHS management, and improving GRM, as shown in Table 7-4. PIUs will arrange special

departments and special personnel for LMP implementation and require contractors and subcontractors to manage laborers according to the requirements. PMOs at all levels will supervise the labor management performance.

Table 7-4 Design Optimization and Mitigation Measures to Mitigation Labor Risks

Facilities		Design optimization	Responsible subject	Mitigation measures	Responsible subject
Collection facility	Waste collection point	o Provide front-end waste collection and transportation vehicles in conformity with the local terrain characteristics.	Environmental sanitation departments of Linwei District and Chencang District Township government Designer	o Improve LMP to ensure that the labor employment terms and conditions, OHS, and GRM of workers are effectively guaranteed; o For **community workers**, ensure voluntary provision of labor; provide accident insurance and sufficient PPE; provide some job opportunities for future facility maintenance and agricultural film treatment at a higher remuneration; provide training, including training on Covid-19 prevention and control, operation of field separation machinery of agricultural film, and operation of new waste collection trucks (in Chengcheng County and Chencang District); extend the management responsibilities of relevant sanitation departments to regularly guide and monitor the community worker management performance. o For **contractor** management, implement the labor management requirements for contractors in the bidding procurement documents and incorporate them into the contract terms; specify remedial measures for non-compliance in the contract, and establish the procedures for third-party performance management and monitoring; for contracted workers for township waste collection and transportation, also ensure that third-party companies purchase accident insurance for them; o Monitor and evaluate labor management performance and make continuous improvement of LMP.	PMOs at all levels Linwei and Chencang PMOs and sanitation departments Township government Village committee Contractor

Facilities		Design optimization	Responsible subject	Mitigation measures	Responsible subject
	Waste sorting pavilion	o		o	
	Central waste collection site	o		o	
Transfer facility	WTS	o In the project design, entrust a professional organization to make OHS evaluation on proposed facilities. o According to the pre-evaluation results, make OHS design, optimize model selection of deodorization and sewage collection facilities, and try to select low-noise equipment. o Fully consider the optimization of vehicle traffic paths in and around the site boundary, and erect appropriate traffic safety facilities and guide signs; provide transfer trucks with speed control devices.	Environmental sanitation departments of Linwei District, Chengcheng County, and Chencang District Contractor Designer	o Improve LMP to ensure that the labor employment terms and conditions, OHS, and GRM of workers are effectively guaranteed; o Entrust a qualified institution to test the occupational hazard factors in the workplace, carry out occupational health examinations for workers according to the test results, and distribute targeted PPE; o Take mitigation measures for OHS factors, such as formulating the standard operation procedures (SOPs), employee training plans (including operating procedures, road traffic safety of drivers, and COVID-19 prevention and control), and OHS emergency plans according to the characteristics of the workplace, and conducting regular drills; o For **contractor** management, implement the labor management requirements for contractors in the bidding procurement documents and incorporate them into the contract terms; specify remedial measures for non-compliance in the contract, and establish the procedures for third-party performance management and monitoring.	PMOs at all levels Linwei, Chengcheng, and Chencang PMOs and sanitation departments Contractor

Facilities		Design optimization	Responsible subject	Mitigation measures	Responsible subject
				o Monitor and evaluate labor management performance and make continuous improvement of LMP.	
	Waste transfer truck parking & maintenance center	o Fully consider the optimization of vehicle traffic paths in and around the site boundary, and erect appropriate traffic safety facilities and guide signs. o Apply the design to mitigate occupational hazard factors, optimize model selection, and try to select low-noise equipment.	Chencang District Waste Management Service Center Contractor Designer	o Improve LMP to ensure that the labor employment terms and conditions, OHS, and GRM of workers are effectively guaranteed; o Take mitigation measures for OHS factors, such as formulating the standard operation procedures (SOPs) and employee training plans (including operating procedures, road traffic safety of drivers, and COVID-19 prevention and control) according to the characteristics of the workplace. o For **contractor** management, implement the labor management requirements for contractors in the bidding procurement documents and incorporate them into the contract terms; specify remedial measures for non-compliance in the contract, and establish the procedures for third-party performance management and monitoring. o Monitor and evaluate labor management performance and make continuous improvement of labor management.	PMOs at all levels Chencang PMO and Chencang District Waste Management Service Center Contractor
Sorting facility	Sorting center	o Fully consider the optimization of vehicle traffic paths in and around the site boundary, and erect appropriate traffic safety facilities and guide signs; provide transfer trucks with GPS and speed control systems.	Linwei District Used Material Recovery Company Contractor Designer	o Improve LMP to ensure that the labor employment terms and conditions, OHS, and GRM of workers are effectively guaranteed; o Entrust a qualified institution to test the occupational hazard factors in the workplace, carry out occupational health examinations for workers according to the test results, and distribute targeted PPE; o Take mitigation measures for OHS factors, such as formulating the standard operation procedures	Linwei PMO and Linwei District Used Material Recovery Company Contractor

Facilities		Design optimization	Responsible subject	Mitigation measures	Responsible subject
		o Apply the design to mitigate occupational hazard factors, optimize model selection, and try to select low-noise equipment.		(SOPs), employee training plans (including operating procedures, road traffic safety of drivers, and COVID-19 prevention and control), and OHS emergency plans according to the characteristics of the workplace, and conducting regular drills; o For **contractor** management, implement the labor management requirements for contractors in the bidding procurement documents and incorporate them into the contract terms; specify remedial measures for non-compliance in the contract, and establish the procedures for third-party performance management and monitoring. o Monitor and evaluate labor management performance and make continuous improvement of labor management.	
Disposal facility	Landfill closure	o Entrust a professional organization to assess the current situation of the existing landfill, and consider relevant mitigation measures in the design according to the assessment conclusion (such as mitigation measures for slope sliding risk of Chengcheng Landfill and Changshougou Landfill in Baoji City). o Optimize traffic safety facilities and guide signs at the intersections of access	Environmental sanitation departments of Linwei District, Chengcheng County, and Baoji City Designer	o Improve LMP to ensure that the labor employment terms and conditions, OHS, and GRM of workers are effectively guaranteed; o Entrust a qualified institution to test the occupational hazard factors in the workplace, carry out occupational health examinations for workers according to the test results, and distribute targeted PPE; o Take mitigation measures for OHS factors, such as formulating SOPs, employee training plans (including pre-job safety training and COVID-19 prevention and control), and emergency plans and measures in case of landslide, fire, explosion, and other accidents in the closure process before closure according to the characteristics of the workplace, and conducting regular drills;	PMOs at all levels Linwei, Chengcheng, and Baoji PMOs and sanitation departments Contractor

Facilities		Design optimization	Responsible subject	Mitigation measures	Responsible subject
		roads to landfills (such as the Landfill in Baoji City).		o For **contractor** management, implement the labor management requirements for contractors in the bidding procurement documents and incorporate them into the contract terms; specify remedial measures for non-compliance in the contract, and establish the procedures for third-party performance management and monitoring. o Monitor and evaluate labor management performance and make continuous improvement of labor management.	

7.3 Community Health and Safety

Communities with community health and safety risks and impact in Batch 1 subprojects include communities around the project site and communities through which waste transportation vehicles pass. The community health and safety risks of the Project are closely related to the technical and management levels of the project design and Project-related facilities.

Given that the construction scale of Batch 1 subprojects is small, it is estimated that 430 construction workers will be involved, around 110 workers for each participating county/district. Operational workers for solid waste management would be employed locally. Thus, the labor influx risk would be low. In addition, the PIUs will require that construction workers shall live in onsite camps to avoid interventions to communities nearby. The SEA/SH risk to community is deemed low.

7.3.1 Community Health and Safety Impact Analysis

- **Front-end Collection Facility**

The front-end collection facilities are distributed in three districts and counties where the Project is located, namely Linwei District, Chengcheng County, and Chencang District, where urban waste sorting pavilions and rural waste collection points will be built. Both the construction scale and floor area of front-end collection facilities are small. The floor area of each waste collection point and waste sorting pavilion does not exceed 20-30 m^2, and the floor area of each central waste collection site in Chencang District is about 300-500 m^2 (including management rooms such as staff lounges and toilets). The community health and safety impacts and risks are analyzed as follows:

① Construction period

The community health and safety impacts during project construction are mainly dust and noise pollution generated during the construction and equipment installation of facilities such as waste sorting pavilions, waste collection points, and central waste collection sites. Construction of waste collection points, central waste collection sites, and waste sorting pavilions has a minor impact on surrounding communities as small-scale civil construction and equipment installation are carried out for waste collection points and central waste collection sites and equipment installation is only carried out for waste sorting pavilions.

② Operation period

Waste collection points and central waste collection sites are closed small buildings or sites, which can effectively isolate the impact on surrounding

communities. Possible risks and impacts during operation of front-end facilities include:

- Odor and noise in these facilities and waste spillage from collection and transportation vehicles may cause disturbance to communities.
- Collection and transportation vehicles may pose certain road traffic safety risks and impacts to communities along the route.

These front-end facilities will be equipped with environmental protection facilities such as ventilation, dust removal, deodorization and sound insulation, and the site will be disinfected, treated with insecticides and raticides regularly. The above measures will play a certain role in reducing the impact of odor and noise on the surrounding communities during the operation of the facilities. In addition, the configuration and sealing of electric collection trucks in Chengcheng County and bucket mounted collection trucks in Chencang District are better, which can effectively reduce garbage leakage.

- **Transfer facility**

The construction of transfer facilities mainly includes the construction and upgrading of 22 transfer stations, including 3 transfer stations and 5 new transfer stations in Linwei District; 9 new transfer stations in Chengcheng County; and 5 new transfer stations in Chencang District. In addition, a new Waste transfer truck parking & maintenance center will be built in Chencang District.

According to the Planning Standard for Urban Environmental Sanitation Facilities (GBT50337-2018), the distance between the municipal solid waste transfer station with a designed transfer capacity of ≤50t/d, 50t/d~150t/d and 150t/d≤450t/d and adjacent buildings outside the station shall be 8m, 10m and 15m respectively. There is only one transfer station with a designed transfer capacity of 150t/d ≤ 450t/d for the Batch 1 Subprojects, which is located on Chelei Street in Linwei District; there are 9 transfer stations with a designed transfer capacity of 50t/d ~ 150t/d, including other transfer stations in the urban area except the transfer station on Chelei Street and 5 village transfer stations in Linwei District; and there are 12 transfer stations with a designed transfer capacity of ≤50t/d, all of which are located in Chengcheng County and Chencang District. The distance between adjacent buildings of these transfer stations meets this standard.

According to the investigation, there are sensitive community residential areas, schools and hospitals within 100 meters around some transfer stations, mainly including 4 transfer stations in Linwei District and 1 transfer station in Chengcheng County. The situation of the communities affected by these 5 transfer stations is as follows:

o **Linwei District:**

Chelei Street Transfer Station: There are residential areas 40m to the south and 40m to the north, and there is a school 400m away, so there are certain road traffic safety risks.

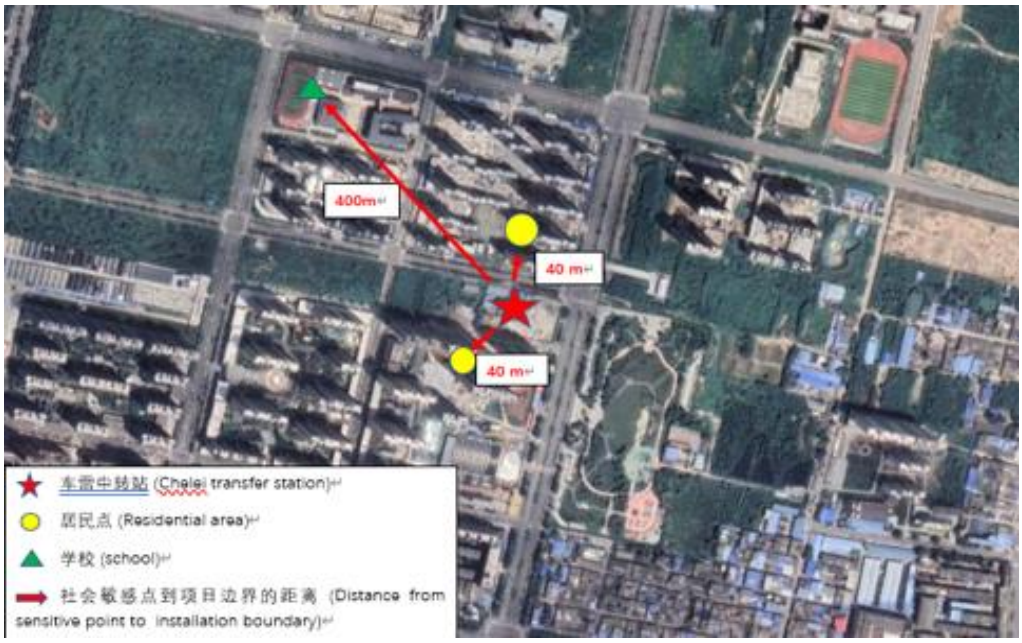


Figure 7-1 Distribution of Sensitive Points around Chelei Street Transfer Station

Shengli Street Transfer Station: There is a residential area 15m to the south and Weinan Experimental Junior High School 15m to the west.

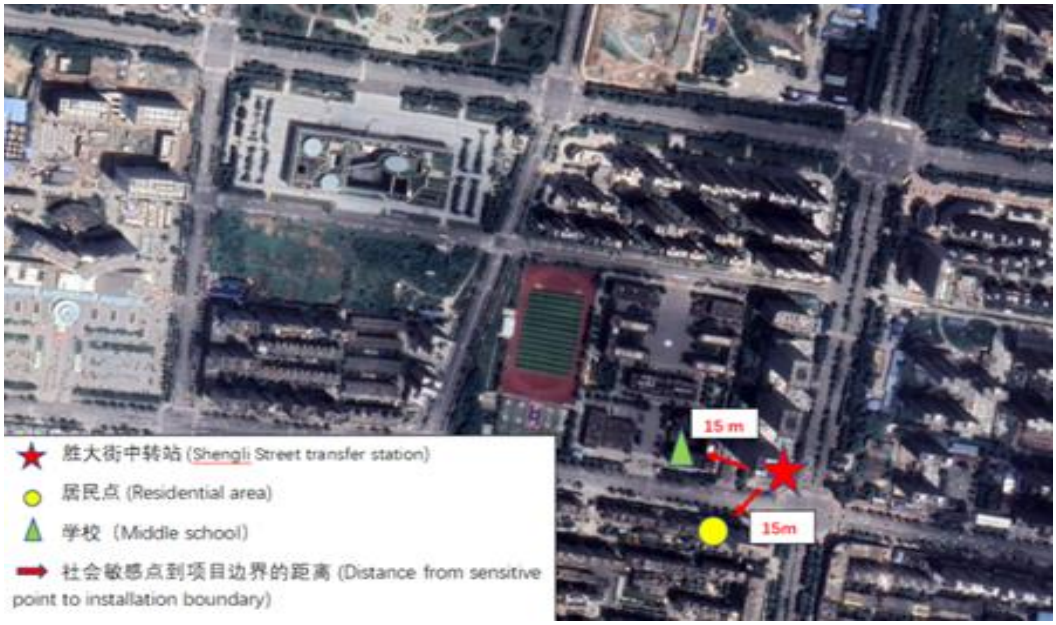


Figure 7-2 Distribution of Sensitive Points around Shengli Street Transfer Station

Weilan Road Transfer Station: There is a residential area 40m to the east.

Figure 7-3 Distribution of Sensitive Points around Weilan Road Transfer Station

Gushi Town Transfer Station: There is a shop 40m to the south, Gushi Town No.2 Junior High School 90m away, and a community health center 116m to the east.

Figure 7-4 Distribution of Sensitive Points around Gushi Town Transfer Station

- **Chengcheng County:**

Zhaozhuang Town Transfer Station: The Huifu Kindergarten of Zhaozhuang Town is 60m to the west, it is adjacent to six residential areas to the north and south, and there is a shop 40m to the east.

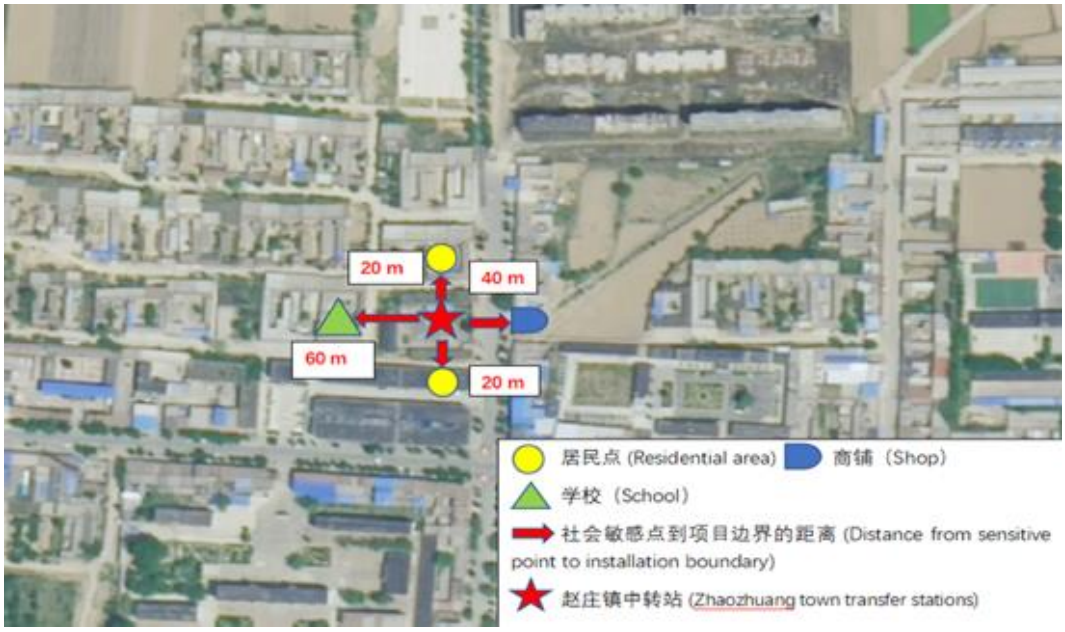


Figure 7-5 Distribution of Sensitive Points around Zhaozhuang Town Transfer Station

There are no residential areas, schools, hospitals, etc. within 100 meters around the rest transfer stations, but there are still certain road traffic safety risks. See Annex 2 for details.

Based on the above analysis, the construction period and operation period of the transfer stations may bring the following risks and impacts on community health and safety:

① Construction period

The construction scale of transfer station and parking maintenance center is small, and the number of workers employed is limited. The impact on community health and safety during the construction period is mainly dust and noise pollution generated during construction and equipment installation.

② Operation period

- Some transfer stations may have certain odor and noise interference to surrounding communities (including schools) during operation.
- The transport vehicles at the transfer station may bring the risk and influence of road traffic safety to surrounding communities and sensitive communities on the way.

In this regard, the site facilities in a new or reconstructed transfer station will be equipped with deodorization system, dust suppression system, automatic sewage discharge system, flushing equipment and other facilities to reduce odor, dust and other pollution; in addition, the compression station will effectively

reduce odor and secondary pollution by closed means. Therefore, the impact of these new or reconstructed facilities on odor, dust and water pollution of surrounding communities will be greatly mitigated.

In addition, the project districts and counties have corresponding plans for waste transfer schedule and transfer frequency, as shown in Table 7-5. From the perspective of peak period of transfer, avoiding the morning and evening peak periods of urban traffic and the peak periods of attending and leaving school in primary and secondary schools can effectively alleviate the traffic interference to communities and schools. However, the work begins at 5 to 7 a.m. in Linwei District and Chengcheng County, which may interfere with the rest of residents in surrounding communities.

Table 7-5 Waste Transfer Arrangement in Project Districts and Counties

County/District			Linwei	Chengcheng	Chencang
Urban WTSs	From the community or collection point to each transfer station	Transfer peak period	5:00-7:00 a.m. and 3:00-4:00 p.m. every day	5:00-7:00 a.m. and 3:00-4:00 p.m. every day	10:00-11:00 a.m. and 4:00-5:00 p.m. every day
		Transfer frequency	All kinds of collection and transportation vehicles, including three-wheeled collection trucks, 3t waste transfer trucks and other small collection trucks	In each transfer station, 14 2t vehicles are arranged to transfer three to four times each day	Including 5t vehicles, electric collection trucks and other waste transfer trucks
	From each transfer station to terminal	Transfer peak period	9:00-11:00 a.m. and 3:00-5:00 p.m. every day	9:00-11:00 a.m. and 3:00-5:00 p.m. every day	9:00-11:00 a.m. and 3:00-5:00 p.m. every day
		Transfer frequency	3-4 12t trucks transfer 3 times each day	2 14t trucks transfer 3 times each day	3-4 12t trucks transfer 3 times each day
Rural WTSs	From village to each transfer station	Transfer peak period	5:00-7:00 a.m.	5:00-7:00 a.m.	9:30-11:30 a.m.
		Transfer frequency	6-12 3t trucks transfer once or twice each day	3-6 2t trucks transfer once or twice each day	3 trucks transfer once each day
	From each transfer station to terminal	Transfer peak period	9:00-11:00 a.m. and 15:00-16:00 p.m. every day	9:00-11:00 a.m. and 15:00-16:00 p.m. every day	15:00-17:00 p.m. every day
		Transfer frequency	1-3 12t waste transfer trucks transfer twice or three times each day	1-3 10t waste transfer trucks transfer twice or three times each day	2 waste transfer trucks transfer twice or three times each day

- **Sorting center**

According to due diligence, the sorting center is located in the middle section of Huashan Street in the main urban area of Linwei District, adjacent to Yuxin Logistics Company in the east, adjacent to Buildings 4 and 5 of Xinli Community (about 65 households) in the west, adjacent to Buildings 2 and 3 of Xinli Community (about 65 households) in the south, and adjacent to a logistics company in the east. For Xinli Community adjacent to the sorting center, the construction period and operation period of the Project may have a certain impact on the residents of the community.

Figure 7-6 Location Plan of Sorting Center in Linwei District

According to social investigation and analysis, the impact of the sorting center on the health and safety of surrounding communities is mainly as follows:

① Construction period

- Impact of construction on surrounding residents by noise and dust, etc.;
- Traffic safety impact of transport vehicles on residents of surrounding communities during construction;

According to the feasibility study, 17 workers of the construction contractor are required for the construction of the sorting center, with a limited number, and the construction period is short, so the contractor workers have little impact on the surrounding communities.

② Operation period

The upgraded sorting center may have dust, noise, fire and road traffic safety impacts on the surrounding communities during the operation period. Since the

waste plastics, waste paper and other waste products stacked are flammable, they are prone to fire if stored and managed improperly.

- **Landfill closure**

The landfill closure subproject involves 4 landfills, namely, Majiagou Landfill in Linwei District, Chengcheng Landfill, Yaotou Landfill in Chengcheng County and Changshougou Landfill in Baoji City.

2) Communities and sensitive points around the project site

4 See Table 7-6 for the situation of community residents around the landfill and the main impact of the current 4 landfills on their respective surrounding residents.

According to the Technical Code for Treatment of Domestic Waste Sanitary Landfill (GB50869-2013), the safe distance of the landfill is 500m. According to social audit, there are no residential areas within the SPZ of Majiagou Landfill in Linwei District and Yaotou Landfill in Chengcheng County. The community sensitive points that require special attention include:

- The newly built houses after the construction of Chengcheng Landfill. The straight-line distance from the nearest residential area to the project site boundary is about 150m.
- The Changshougou Landfill in Baoji City has a sloped curve at the entrance of the access road. There is a blind spot in the line of sight for vehicles entering and leaving the site and there are no safety warning signs, posing certain traffic safety hazards to several residents around. There is a risk of unstable sliding of the slope at the landfill site, which may pose certain potential safety hazards to the residents in Groups 11 and 12 of Baoling Village, downstream enterprises and road traffic.

Table 7-6 Situation of Communities around the Four Municipal Solid Waste Landfills

Subproject	Surrounding sensitive points	Impact on surrounding environment
Majiagou Landfill in Linwei District	There are no residential areas within the SPZ. There is a residential area of villagers in Shangmeng Group of Mengjia Village at a straight-line distance of about 520m on the northwest side. There is a residential area of villagers in Majia Village at a straight-line distance of about 550m on the west side. There is a residential area of villagers in Chengjia Village at a straight-line	• The odor and noise caused by the landfill operation have little impact on the surrounding residents; • The access route of waste transfer trucks passes through Mengjia Village, which has a certain impact on road safety.

Subproject	Surrounding sensitive points	Impact on surrounding environment
	distance of about 1000m on the north side.	
Yaotou Landfill in Chengcheng County	There are no residential areas within the SPZ. There is a residential area of villagers in Huijiahe Group of Yangjia Village at a straight-line distance of about 800m on the south side (It has a permanent population of 32). There is a residential area of villagers in Yaotou Village and Nancheng Village at a straight-line distance of about 580m on the northwest side (It has a permanent population of 73).	• Possible odor disturbance to villagers farming on surrounding farmland; • The waste transfer trucks may have an impact on the traffic safety of villagers along the line.
Chengcheng Landfill	Xincheng Garden Community has a straight-line distance of 150m in the west (about 300 households), and there is a residential area in Nanguan Village in the south with a straight-line distance of 150m (about 100 households), which are constructed after the landfill is completed and put into operation.	• Possible health and safety impacts on community residents located within the SPZ; • The waste transfer trucks may affect the traffic safety of community residents along the line.
Changshougou Landfill in Baoji City	There is a residential area of villagers in Groups 11 and 12 of Baoling Village at a straight-line distance of 300m above the landfill on the west side (72 households, 247 persons), and there is a residential area of villagers in Dongyuan Village at a straight-line distance of 400m above the landfill on the east side (163 households, 549 persons). However, the distance between the two residential areas and the waste pile of this landfill exceeds 500m.	• Groups 11 and 12 of Baoling Village are in the downwind direction of the dominant wind direction, having the odor and noise effects, especially in summer; • There is a sloped curve at the entrance of the access road. There is a blind spot in the line of sight for vehicles entering and leaving the site and there are no safety warning signs, which has certain traffic safety hazards to the surrounding residents; • The slope of the landfill has the risk of unstable sliding, which may have potential safety hazards to Groups 11 and 12 of Baoling Village, as well as downstream enterprises and road traffic.

3) Analysis of risk and impact on health and safety of surrounding communities

① Closure period (construction period)

In general, the impacts on health and safety of surrounding communities during landfill closure are mainly as follows:

- **Exhaust gas, noise and landfill gas explosion:** For Chengcheng Landfill and Changshougou Landfill in Baoji City, there are residential areas within the SPZ. The nearest residential areas are 150m and 300m away from the boundary of the two landfills respectively. In addition, the residential areas around the Chengcheng Landfill are densely distributed. Therefore, the exhaust gas and noise generated by the construction of the two landfills have a great impact on the surrounding communities.
- **Impact of road traffic safety by construction vehicles:** The impact of construction vehicles on surrounding communities mainly exists in the Chengcheng Landfill and Changshougou Landfill in Baoji City. Among them, for Changshougou Landfill in Baoji City, there is a sloped curve at the entrance of the access road. There is a blind spot in the line of sight line for vehicles entering and leaving the site, there are no safety warning signs, and most of the construction vehicles are heavy vehicles, which has a great impact on the road traffic safety of surrounding residents.
- **Impact of unstable slope sliding on nearby residents:** There is a risk of unstable sliding on the slope of Changshougou Landfill. During the construction period, due to the vibration of construction machinery, the slope may become more loose and slide, which has a serious impact on the safety of villagers in Groups 11 and 12 of Baoling Village, as well as workers of the downstream enterprises (leachate treatment station and biogas power plant, solid waste center office building) and road traffic.
- **Impact of the Contractor's workers on the surrounding communities:** Due to a short distance between Chengcheng Landfill and Changshougou Landfill in Baoji City and the surrounding communities, the construction of camp site for the Contractor's workers (47 and 82 persons respectively according to the feasibility study) around the project site may interfere with the surrounding communities to some extent.

② **Operation and maintenance period**

After the closure of the landfill, no garbage transport vehicles will enter and leave the landfill, so there is no disturbance impact of garbage transport vehicles on the residents of the surrounding communities. However, after the closure of the landfill, there will also be a certain impact of odor and harmful gases on the residents of the surrounding communities. There is a certain health hazard in particular to the residents located within the SPZ of Chengcheng Landfill and Changshougou Landfill in Baoji City. According to the feasibility study, after the landfill is closed, the landfill area will be covered with soil for greening to improve

the environment and reduce the breeding of mosquitoes, and there are also the effects of shading, dust prevention, adsorption of harmful gases and noise reduction for landfill. By taking ecological protection measures such as greening, the impact on the surrounding ecological environment can be further reduced. The ecological environment of the landfill site can be improved to a certain extent, and at the same time the impact on the residents of the surrounding communities can be mitigated.

7.3.2 Existing Management Measures for Community Health and Safety Risks

- **Front-end collection facility**

According to social audit, the district-level and county-level environmental sanitation departments are mainly responsible for the front-end waste collection and transportation in the urban area, and there are corresponding institutional and specification requirements for the management of drivers and vehicles. However, the community workers are mainly responsible for waste collection and transportation in villages, and there are no formal management measures. The vehicles configured are mainly the tricycles, which are not well sealed and cause leakage.

- **Transfer facility**

According to social audit, the district-level and county-level environmental sanitation departments have institutional requirements for drivers and site operation and maintenance personnel in terms of operation specifications, PPE wearing, mechanical equipment operation specifications, equipment maintenance, environmental monitoring frequency, and regular site disinfection. The operation of the existing transfer station is also equipped with a monitoring system, a compression system, a dust removal and deodorization system, etc. The leachate is discharged to the collection tank for unified removal. The disinfection personnel disinfect the site every day to reduce odor, flying dust and other pollution.

Management systems are formulated for transfer drivers, such as the driver management system and transfer truck management system. Road safety training shall be conducted for drivers at least once a month, vehicles shall be overhauled and maintained regularly, and transfer trucks shall be covered by statutory automobile liability insurance and commercial insurance. Transfer trucks with GPS shall work along the fixed route and at a specified time and limited speed.

- **Sorting center**

According to social audit, the existing sorting center reduces the noise impact on the surrounding communities by prohibiting the startup or operation of mechanical equipment during lunch break and after 8:00 p.m.; and the drivers of transport vehicles receive the training on traffic safety awareness every month.

- **Landfill closure**

According to due diligence, each landfill site has formulated relevant systems for the management of facilities and waste transfer trucks:

- **Measures for odor, noise and sewage generated by facilities:** There are special drainage facilities for leachate and landfill gas in the landfill, and there are professional third-party companies to treat leachate and landfill gas; the landfill regularly entrusts a qualified third-party testing company to carry out environmental monitoring on the site; and the greening around the landfill plays a certain role in noise reduction and air purification.
- **Measures for road traffic safety:** Reasonably arrange the running time of waste transfer truck to avoid the rush hours of commuting in the morning and at noon; Optimize the driving route and avoid sensitive points such as villagers' concentrated residential area, school and hospital; configure GPS for the vehicle to monitor the background, prohibit hanging in the vehicle without permission and superelevation and overload, try to reduce throwing the refuse and dripping sewage along the way, and clean the vehicle in time after the end of transportation operation; require the driver to strictly abide by traffic regulations, organize business and safety training at least once a month, check the vehicle conditions before driving, maintain good performance, and have a clear reward and punishment system.

7.3.3 Significance of Community Health and Safety Risk

The small front-end collection facilities have little impact on community health and safety; However, the community health and safety risk is "**substantial**" for the transfer stations adjacent to communities, kindergartens, primary and secondary schools, the Chengcheng Landfill where residents live within the safety protection distance, and the Changshougou Landfill in Baoji City with the risk of unstable landslide and traffic safety at the access road.

In summary, the risk of the first batch of project activities is "**substantial**" in terms of community health and safety. The risk level of the first batch of project activities is shown in Table 7-7.

Table 7-7 Significance of Community Health and Safety Risks

Facilities		Construction stage		Operation stage	
		Major risks	Level	Major risks	Level
Village/community collection facilities		Impact of dust and noise on communities and villages during construction	M	Odor, noise and garbage leakage from collection and transportation vehicles; impact of collection trucks on community traffic safety	M
Transfer facilities (including parking and maintenance center for waste transfer trucks)		Dust and noise pollution generated during construction and equipment installation	M	Risks to community health by sewage, odor and noise of transfer facilities, and risk to community safety by garbage transfer trucks	M
Sorting center		Dust and noise pollution generated during construction and equipment installation	M	Impacts of dust, noise, fire and road traffic safety on community health	M
Landfill closure	Closure of the Majiagou Landfill in Linwei District	Risk of construction waste gas, noise and landfill gas combustion and explosion; road safety of construction vehicles	M	Risks to community health and safety due to improper disposal of landfill gas and leachate	M
	Closure of the Chengcheng Landfill	Risks of construction waste gas, noise and landfill gas combustion and explosion; road safety of construction vehicles; greater impact as the surrounding communities are close to the construction area; there are residents living within the environmental protection distance of the existing municipal solid waste landfill, which does not meet the requirements of safety distance for environmental protection, and causes risks to community health and safety	S	Risks to community health and safety due to improper disposal of landfill gas and leachate	S
	Closure of Yaotou Landfill in Chengcheng County	Risk of construction waste gas, noise and landfill gas combustion and explosion; road	M	Risks to community health and safety due to improper disposal	M

Facilities		Construction stage		Operation stage	
		Major risks	Level	Major risks	Level
		safety of construction vehicles		of landfill gas and leachate	
	Closure of Changshougou Landfill in Baoji City	Risks of construction waste gas, noise and landfill gas explosion; road safety of construction vehicles; risk of slope sliding due to disturbance during construction; greater impact as the surrounding communities are close to the construction area; there are residents living within the environmental protection distance of the existing municipal solid waste landfill, which does not meet the requirements of safety distance for environmental protection, and causes risks to community health and safety	S	Risks to community health and safety due to improper disposal of landfill gas and leachate	S

7.3.4 Design Optimization and Mitigation Measures against Community Health and Safety Risk

According to the risk factors identified in the social impact assessment, the SIA unit has formulated the following relevant design optimization and mitigation measures for community health and safety after consultation with the Shaanxi PMO and PIU. See Table 7-8 for details.

Table 7-8 Design Optimization and Mitigation Measures to Mitigate Community Health and Safety Risks

Facilities	Design optimization	Responsible subject	Mitigation measures	Responsible subject
Village/community collection facilities	o The site selection of front-end collection facilities shall be fully consulted and supported by community residents. o Collection and transportation shall be carried out in time during the operation of front-end collection facilities. The frequency and time of collection and transportation shall be reasonably arranged according to the actual situation of each place and the suggestions of residents. The collection and transportation time shall avoid the traffic rush hours.	Environmental sanitation departments of Linwei District and Chencang District; Township governments; Contractor; Designer	o Strengthen the road traffic safety training and management of front-end collection and transportation personnel, and improve safety awareness to avoid and reduce the occurrence of traffic accidents. o On the basis of the existing community GRM, establish and adopt a documented GRM, and extend the responsibilities of the sanitation department to guide and supervise the waste collection and transportation system of townships and villages.	Environmental sanitation departments of Linwei District and Chencang District
Transfer facilities (including parking and maintenance center for waste transfer trucks)	o In the project preparation stage, information disclosure shall be made on the site selection and construction content of the project, and opinions and suggestions of residents in surrounding communities shall be fully solicited. o Reasonably arrange the project layout, and keep high-	Environmental sanitation departments of Linwei District, Chengcheng County and Chencang District; Township governments; Designer	o During the construction and operation period of the Project, the operations after 8 p.m. shall be avoided as far as possible, especially the startup or operation of mechanical equipment, so as to avoid the noise impact on community residents at night; o For the urban transfer stations close to communities around Linwei District and Chengcheng County, effective measures	Environmental sanitation departments of Linwei District, Chengcheng County and

Facilities	Design optimization	Responsible subject	Mitigation measures	Responsible subject
	noise equipment, main sewage outlets and other facilities away from sensitive points around the project; o Improve the construction organization plan, reasonably arrange the construction process and construction period, and minimize the impact on the communities; o Set up safety warning signs at critical sections of community traffic		shall be taken to reduce noise interference during the operation period from 5 to 7 a.m. o Standardize the management of drivers and vehicles and optimize the transportation routes to minimize impacts on communities; o Carry out safety education for local residents (including women, children, the elderly, etc.). o On the basis of the existing community GRM, establish and adopt a written GRM to actively handle community complaints and feed back the handling results to the claimants in a timely manner.	Chencang District
Sorting center	o In the project preparation stage, information disclosure shall be made on the construction content of the project, and opinions and suggestions of residents of surrounding communities shall be fully solicited. o Design feasible and effective noise reduction and dust control scheme to avoid or mitigate the dust and noise impact on residents of surrounding communities during the operation period of the sorting center	Linwei District ESC; Linwei District Used Material Recovery Company; Township government Designer	o Standardize the storage and management of flammable wastes such as waste plastics and waste paper, formulate fire emergency plan, improve the emergency response capacity and rescue level of communities, and regularly drill in adjacent communities; o Standardize the management of drivers and vehicles and optimize the transportation routes to minimize impacts on communities; o Carry out safety education for local residents (including women, children, the elderly, etc.). o Establish and adopt a written grievance response mechanism (GRM) to actively handle the community complaints and	Linwei District ESC

Facilities		Design optimization	Responsible subject	Mitigation measures	Responsible subject
		o Set up safety warning signs at critical sections of community traffic		suggestions, and timely feed back the handling results to the claimants.	
Landfill closure	Closure of the Majiagou Landfill in Linwei District	o Include corresponding technical schemes and measures to deal with the health and safety risks of surrounding communities in the design; o Specify appropriate engineering and non-engineering measures to minimize impacts on the health of surrounding community residents during closure and future maintenance. o Specify appropriate plans and measures in the landfill closure method statement and the maintenance plan after the closure of Chengcheng Landfill to deal with the health risks of surrounding communities on the basis of full consultation with the Designer, competent departments of ecological environment, safety, etc., and surrounding communities and in combination with the	Linwei District ESC; Township government	o Complete the emergency plan for landfill closure before closure, conduct regular drills, and incorporate the adjacent communities to improve the emergency response capacity and rescue level of communities under abnormal working conditions; o Avoid the community for the construction campsite as far as possible; strengthen the management of contractor and its workers, ensure operation according to the design specifications and implement necessary measures to reduce the impact on the health and safety of community residents; o Monitor the health risks to surrounding communities during landfill closure and post-closure O&M and regularly inform the communities and surrounding residents of the monitoring results. o Establish a formal and documented grievance process prior to closure in conjunction with the existing community grievance handling channels, and establish and deploy resources and personnel to handle grievances throughout closure and post-closure O&M.	Linwei District ESC

Facilities		Design optimization	Responsible subject	Mitigation measures	Responsible subject
		requirements of relevant regulations and technical standards, ESIA, good domestic and international o For the Changshougou Landfill in Baoji City with a risk of slope sliding, and corresponding technical solutions will be adopted to eliminate potential safety hazards; o Traffic safety facilities and signs at the entrance of the access road will be optimized;			
	Closure of the Chengcheng Landfill	o	Chengcheng County ESC; Township governments;		Chengcheng County ESC
	Closure of Yaotou Landfill in Chengcheng County	o	Chengcheng County ESC; Township governments;		Chengcheng County ESC
	Closure of Changshougou Landfill in Baoji City	o	Baoji Solid Waste Treatment Center		Baoji Solid Waste Treatment Center

7.4 Land Use Risk

The Batch 1 Subprojects involves the construction and installation of village waste collection points and community sorting pavilions, the construction of new waste transfer stations, the construction of waste sorting centers and the construction of parking lots for waste removal vehicles. These project activities involve the occupation and acquisition of land.

7.4.1 Analysis of Land Use Risk

- **Village garbage collection points and community garbage sorting pavilions**

In the Batch 1 Subprojects activities, the village waste collection points and community waste sorting pavilions will be built in Linwei District and Chencang District. The waste collection point will be set in a rural area, covering an area of 20~30m^2; and the community waste sorting pavilion will be set in an urban area, covering an area of about 2m^2. Such facilities mainly include the installation of waste bins and waste containers.

Table 7-9 List of Front-end Waste Collection Facilities of the Project

Project districts and counties	Front-end Collection Facility		
	Rural waste collection point (Nr.)	Urban community waste sorting pavilion (Nr.)	Subtotal (Nr.)
Linwei District	510	500	1010
Chencang District	170	500	670
Subtotal	680	1000	1680

Figure 7-7 Existing Waste Sorting Pavilions

- **Central waste collection site**

In the first batch of project activities, 32 central waste collection sites will be newly built/ reconstructed in Chencang District, including 2 in urban areas and 30 in rural areas. According to the project design, each central waste collection site covers an average area of about 300~500 m^2.

Chencangyuan Central Waste Collection Site

Central Waste Collection Site on South Ring Road

Figure 7-8 Central Waste Collection Sites in Urban Areas to be Reconstructed

- **Transfer facility**

In the first batch of projects, 22 municipal solid waste transfer stations will be newly built and reconstructed, occupying a total land area of 31,188 m^2. See Table 7-12 for details of the land for municipal solid waste transfer stations. Including:

- The 10 transfer stations occupy a state-owned land area of 36,293 m^2. All the land is vacant and owned by the government, so it can be directly allocated to the Project for use without affecting the population units and individuals.
- The collective land with an area of 20,199m^2 is expropriated for 12 transfer stations, affecting 4 households and 16 people. Most of the collective land expropriated for the Project is the unused collective construction land. According to the survey, the income of the affected households mainly comes from non-agricultural industries (such as migrant workers), and the impact of land expropriation for the Project on the livelihood of farmers is minor.

<u>According to social audit, some transfer facilities need to go through the formalities of property right change and planning adjustment, which are mainly summarized as follows:</u>

- **Linwei District:** The Weilan Road Transfer Station to be reconstructed is a leased collective construction land, which does not comply with the relevant provisions of the Land Law of the People's Republic of China, and its land needs to be expropriated in the Project. The land use planning of the proposed transfer station of mass entrepreneurship and innovation base needs to be adjusted to the land for public facilities to meet the land

use planning. If part of the plot where the proposed pipeline transfer station is located is in dispute with one household, the design and layout of the transfer station shall avoid the disputed part.

- **Chengcheng County:** The land property rights of Jiaodao Town Transfer Station and Zhaozhuang Town Transfer Station belong to the town government. The PIU- Chengcheng County ESC has reached a preliminary agreement with the township government on site selection and land property right transfer. The environmental sanitation center shall complete the land property right transfer procedures with the township government as soon as possible.

Table 7-10 Land Occupation List of Waste Transfer Stations

County and district	Name	Township/Subdistrict	Village/Community	Project land (m2)			Affected people		Nature of land
				State-owned land	Collective land	Subtotal	Number of households	Number of persons	
Linwei	Chelei Street Transfer Station	Duqiaoban	Chelei Village	6453	0	6453	0	0	Land for state-owned sanitation facilities
	Shengli Street Transfer Station	Duqiaoban	Yingtian Community	840	0	840	0	0	Land for state-owned sanitation facilities
	Weilan Road Transfer Station	Zhannanban	Hanma Village	0	1754	1754	2	7	Land for collective sanitation facilities (leased)
	Transfer station of mass entrepreneurship and innovation base	Sanzhang Town	Hanjia Village	1713	0	1713	0	0	State-owned construction land
	Jiaoxie Town Transfer Station	Jiaoxie Town	Xinzhai Village		1853	1853	2	9	Cultivated land
	Gushi Town Transfer Station	Gushi Town	Banxi Village	1967	0	1967	0	0	State-owned construction land
	Chongning Town Transfer Station	Chongning Town	Xianwang Village	1793	0	1793	0	0	State-owned construction land
	Guandao Town Transfer Station	Guandao Town	Guojia Village	1393	0	1393	0	0	State-owned construction land
	Subtotal			**20693**	**3607**	**24300**	**4**	**16**	**0**
Chengcheng	Zhaozhuang Town Waste Transfer Station	Zhaozhuang Town	Zhaozhuang Village	2000	0	2000	0	0	State-owned construction land

County and district	Name	Township/Subdistrict	Village/Community	Project land (m2)			Affected people		Nature of land
				State-owned land	Collective land	Subtotal	Number of households	Number of persons	
	Wangzhuang Town Waste Transfer Station	Wangzhuang Town	Wangzhuang Village	0	1532	1532	0	0	Collective construction land
	Fengyuan Town Waste Transfer Station	Fengyuan Town	Ji'ancheng Village	0	1600	1600	0	0	Collective construction land
	Jiaodao Town Waste Transfer Station	Jiaodao Town	Zhongshe Village	1600	0	1600	0	0	Land for state-owned sanitation facilities
	Weizhuang Town Waste Transfer Station	Weizhuang Town	Weizhuang Village	0	1600	1600	0	0	Collective construction land
	Chengguan Town Waste Transfer Station	Chengguan Town	Zhenji Village	0	4500	4500	0	0	Collective industrial and mining land
	Zhuangtou Town Waste Transfer Station	Zhuangtou Town	Daizhuang Village	0	1860	1860	0	0	Collective construction land
	Siqian Town Waste Transfer Station	Siqian Town	Beijie Village	0	2000	2000	0	0	Collective construction land
	Yaotou Town Waste Transfer Station	Yaotou Town	Dongcun	0	2000	2000	0	0	Collective industrial and mining land
	Subtotal			**3600**	**15092**	**18692**	**0**	**0**	
Chencang	Dongguan Xiqin Village Compression Station	Dongguan Sub-district Office	Xiqin Village	500	0	500	0		Greening land for state-owned public construction
	Qianwei Compression Station	Qianwei Sub-district Office	Lijiaya Village	500	0	500	0		Land for state-owned public facilities

County and district	Name	Township/Subdistrict	Village/Community	Project land (m2)			Affected people		Nature of land
				State-owned land	Collective land	Subtotal	Number of households	Number of persons	
	Xinjie Village Waste Compression Station	Xinjie Town	Xinjie Village	0	500	500	0	0	Collective construction land
	Xiangquan Town Waste Compression Station	Sunjia Village	Gehekou Village	0	500	500	0	0	Collective construction land
	Tuoshi Town Waste Compression Station	Tuoshi Town	Mengjiayuan Village	0	500	500	0	0	Collective construction land
	Subtotal			**12000**	**1500**	**13500**	**0**	**0**	
Total				**36293**	**20199**	**56492**	**4**	**16**	

Source: project feasibility study report and field investigation

- **Linwei District Sorting Center**

In the first batch of projects, a sorting center is planned to be built for the Linwei District subproject. The proposed land for the construction of the sorting center is 6,533 m2, which is a state-owned construction land and belongs to Linwei District Used Material Recovery Company. Linwei District Used Material Recovery Company obtained the actual use right of the land in the 1980s. In July 2007, Weinan Municipal People's Government issued a land ownership certificate to it.

- **New waste transfer truck parking & maintenance center in Chencang District**

The newly-built parking and maintenance center of transportation and removal vehicles for the Chencang District subproject covers an area of 16.5 mu. 350 parking spaces of various types will be built in the Project. According to the interview and on-site investigation, the maintenance center is located on the dead-end road to the west of Baoji Shooting Center. The land is now a green belt, and the nature of the land is the land for municipal public facilities. It belongs to the Urban Management and Law Enforcement Bureau of Chencang District, and the land can be directly used for the Project.

- **Closure of Domestic Waste Landfill**

Activities of Batch 1 subprojects include the closure of four domestic waste landfills. Landfill closure will be implemented in the existing site area, so it does not involve new land occupation. However, according to the social investigation, there are legacy problems in the land for Majiagou Landfill in Linwei District and Yaotou Landfill in Chengcheng County, and corresponding measures need to be formulated for management. The main contents are as follows:

The land for Majiagou Landfill and Yaotou Landfill in Chengcheng County is the leased collective land. Among them, the lease term of Majiagou Landfill is from 2006 to 2036, with a lease term of 30 years; the lease term of Yaotou Landfill in Chengcheng County is from August 1, 2018 to July 31, 2038, with a lease term of 20 years.

According to the laws and regulations of the People's Republic of China on project land, such as Article 43 of the Land Administration Law of the People's Republic of China (2004), "If any unit or individual needs to use land for construction, it must apply for the use of state-owned land according to law ...". Therefore, the land use of the above facilities does not meet the requirements of the laws and regulations of the People's Republic of China on project land. In addition, in August 2021, the Natural Resources Bureau of Chengcheng County

found that there was non-compliant land use of the Yaotou Landfill in Chengcheng County by inspection and issued rectification opinions.

In addition, the reuse of land after landfill closure needs to be secured. The landfill site shall not be used as the construction land for permanent buildings before being identified by the professional technical department. Therefore, even after the expiration of the land lease contract, if the land is returned to the communities and farmers, the restrictions on land use need to be fully informed. The PIU shall negotiate with the affected communities and farmers and reach an agreement on the subsequent use of land.

7.4.2 Existing Management Measures for Project Land Use Risks

As mentioned above, China has developed a complete legal framework and policy system for land expropriation, resettlement and compensation, including the Land Administration Law of the People's Republic of China (the third revision on August 26, 2019). Within the framework of national laws and policies, local governments at all levels have promulgated and implemented relevant laws and policies and land expropriation processes in line with local laws and policies to manage and guide local land expropriation, resettlement and compensation.

In the project feasibility study, the site selection for the first batch of projects (especially the transfer stations) is subject to full scheme comparison to avoid and reduce the impact of land expropriation and resettlement; see Table 7-11 for details.

Table 7-11 Scheme Optimization of Transfer Stations

County and district	Original scheme and problems found	Optimization scheme
Chengcheng	There is a church 20m to the east of the original site of Wangzhuang Town Transfer Station, and cultivated land needs to be expropriated.	Adjust the site selection and select the relatively empty collective construction land in Wangzhuang Village to avoid the impact on Wangzhuang Church and land expropriation households.
	The original site of Zhuangtou Town Transfer Station is adjacent to the mass housing and a kindergarten, and cultivated land needs to be expropriated.	Adjust the site selection and select the relatively empty collective construction land in Daizhuang Village to avoid the impact on land expropriation households, residents and kindergarten.
	The original site of Zhaozhuang Town Transfer Station is close to the high-voltage transmission line tower, and cultivated land needs to be expropriated.	Adjust the site selection and select a grain station (state-owned construction land) that has been abandoned for many years to avoid the impact on high-voltage transmission line tower and land expropriation households.

County and district	Original scheme and problems found	Optimization scheme
	There are two households near the original site of Weizhuang Town Transfer Station. After the interview, both households thought that it was better not to build the transfer station at this location, which should be more than 50m away from their houses.	Adjust the site selection and select an abandoned plant, which is about 100m away from the houses of the two households interviewed at a straight-line distance to avoid the impact on these two households.
Linwei	The original site of Gushi Town Transfer Station is close to the tourism project under construction, and cultivated land needs to be expropriated.	Adjust the site selection and select the construction land of Nanshi Supply and Marketing Cooperatives in Gushi Town to avoid mutual interference with other projects and the impact on expropriation of cultivated land.
	A household has a dispute over the land plot near the site of Guandao Town Transfer Station.	The transfer station is designed to avoid the disputed area and is constructed on the remaining plot.
Chencang	According to the interview and field investigation, it is found that the village terrain in Xishan area is complex, and the power of the electric collection truck is obviously insufficient.	It is suggested that when village collection trucks are configured for Xishan Area, fuel collection trucks should be considered and relevant procedures for fuel collection trucks should be handled.

Source: project feasibility study report and field investigation

In addition, the land collectively owned by farmers shall be used for the construction of public facilities and public welfare undertakings in townships (towns) and villages upon approval according to law; if agricultural land is involved, it shall be converted into construction land. Therefore, collective construction land to be used for rural pubic facilities and public welfare programs does not have to be converted into state-owned land.

Land pre-examination: In the process of project preparation, land pre-examination is required for the site selection and land use of the first batch of project activities to ensure that the project land complies with relevant laws and regulations and reduce the land use risk of project. Up to now, the natural resources in the project districts and counties have completed the pre-examination of the land to be used in the project; see Annex 3 for details.

7.4.3 Risk Level Assessment on Project Land Use

As mentioned above, the land scale of the front-end collection facilities (waste collection points and sorting pavilions) of the Batch 1 Subprojects is very small, and the site selection and land use will be determined by villagers through negotiation. Collective open space for construction will be used as much as possible to avoid the impact on farmers. The risk of land use for front-end

collection facilities is "low"; the existing state-owned vacant land will be used as the waste transfer truck parking lot in Linwei District Sorting Center and in Chencang District, which can be directly used for project construction, and the land use risk is also "low". Therefore, the land use risk of the Batch 1 Subprojects activities mainly comes from the construction of transfer facilities, but the land occupation scale of the project is not large, most of which is state-owned construction land and collective construction land, and does not involve house demolition and resettlement.

China, Shaanxi Province and project districts and counties have perfect land expropriation policy systems, and the implementation process and supervision measures of land expropriation in project districts and counties are also very complete. In addition, for the Batch 1 Subprojects activities involving land expropriation, separate resettlement action plans have been formulated in accordance with World Bank ESS5 and corresponding laws and regulations of China. In general, the risk of land expropriation and resettlement for the Batch 1 Subprojects is "high".

Table 7-12 Risk Level of Project Land Use

Facilities	Preparation		Construction and operation stage	
	Risk	Level	Risk	Level
Front-end Collection Facility	• Negotiation over land use, which conforms to the land use planning	L	• Not applicable	L
Transfer facility	• Timely payment for land expropriation and compensation for transfer stations • Adjustment of project land planning • Acquisition of land use right	M	Complaints and appeals of the affected person about payment for land expropriation and compensation	L
Sorting center	Not applicable	L	Not applicable	L
Waste transfer truck parking lot	Not applicable	L	Not applicable	L
Majiagou Landfill in Linwei District	The project land is leased and covers a large area (357.9 mu), which does not meet the requirements of relevant laws and regulations of China.	S	After landfill closure, improper disposal of landfill gas and leachate poses risks to the safety and health of communities and residents; improper use of land leads to safety risks. After expiration of the lease term, the ownership and use of the land may cause disputes, resulting in complaints from communities and residents.	S
Yaotou Landfill in Chengcheng County	• The project land is leased and covers a small area (about 47.9 mu), which does not meet the requirements of relevant laws and regulations of China. • In 2021, the Natural Resources Bureau of Chengcheng County found	S	After landfill closure, improper disposal of landfill gas and leachate poses risks to the safety and health of communities and residents; improper use of land leads to safety risks. After expiration of the lease term, the ownership and use of the land may cause disputes, resulting in	S

Facilities	Preparation		Construction and operation stage	
	Risk	Level	Risk	Level
	that there was non-compliant land use of the landfill by inspection and issued rectification opinions.		complaints from communities and residents.	

7.4.4 Design Optimization and Mitigation Measures to Mitigate Project Land Use Risk

- **Front-end Collection Facility**

With the assistance of the township government, the district and county-level project management offices and PIUs release the project construction information and land use needs, understand and collect the intention and needs of the affected villages and farmers to provide land, and then take the affected villages as collective units to carry out land use through negotiation; After reaching an agreement, sign a land use agreement for rural public infrastructure, and provide key information such as land adjustment or land subsidy within the village collective; before the land use of the Project, the affected villages and households shall perform their respective duties in accordance with the agreement.

In practice, township and village committees will take the following measures to minimize the impact of resettlement:

- Convene villagers' meeting for full consultation; determine site selection;
- Avoid occupying basic farmland and cultivated land in site selection;
- Select collective construction land or wasteland to reduce the impact on villagers;
- If the site selection involves the land contracted by farmers, obtain consent from the farmers and give appropriate compensation.

The external monitoring agency will monitor and evaluate the consultation process, consultation results, signing and performance of agreements, and report to the Shaanxi PMO and the World Bank every six months. The land use process of rural public facilities is shown in Figure 7-9. This land use procedure is applicable to the land use of waste collection points/sorting pavilions and central waste collection sites in the Batch 1 Subprojects.

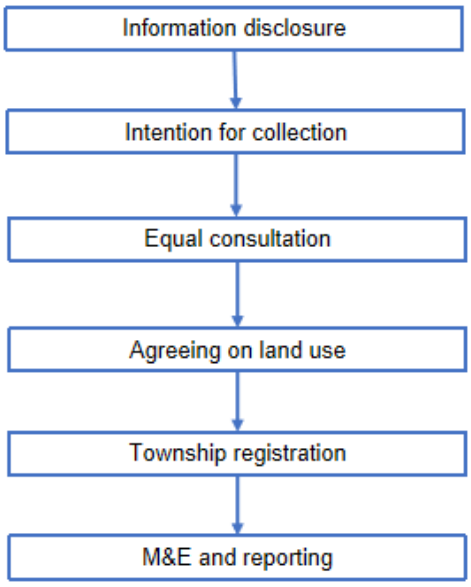


Figure 7-9 Land Use Procedure of Rural Public Facilities

- **Facilities involving land expropriation (e.g. transfer facilities)**

During the preparation of the Batch 1 Subprojects, the district and county-level PMOs and PIUs compared and selected the project sites (see Table 7-11 for details) to avoid and reduce the impact of land expropriation and resettlement as much as possible.

For unavoidable land expropriation and resettlement, the resettlement action plan has been taken for the first batch of project activities in accordance with World Bank Standard ESS5 and corresponding laws and regulations of China.

The district and county-level PMOs and PIUs will implement the activities related to land expropriation and resettlement compensation in accordance with the resettlement action plan.

Shaanxi PMO will engage a third-party external monitoring agency for resettlement to monitor and evaluate the resettlement implementation to ensure the implementation of the resettlement objectives of the first batch of project activities.

- **Landfill Site Compliance and Reuse**

The Shaanxi PMO should assist the county PMO to find a feasible solution to the land use nonconformity in coordination with the county government and natural resources bureau, identify the restraints of such outstanding issue on landfill closure and the prerequisites to land use, and notify the Bank timely. It is sugguested that Chengcheng County Government should include land use planning for the landfill in the updated land spatial plan which is expected to be approved in June 2023 by the Shaanxi Provincial Government. Before starting the

bidding for landfill closure, the county PMO should obtain the necessary approvals for land use (i.e., aligning with land zoning plan in the up-to-date land spatial planning, converting the farmland into construction land, obtaining land use certificate) and seek consent from the district Natural Resources Bureau about the landfill closure plan.

For compensation with villages/villagers subject to the likely potential scenario after the landfill closure, it is suggested:

- **For Majiago Landfill**

  - If the leased land is to be returned to the villages/farmers after landfill closure, the PMO will support preparation of a technical assessment to confirm the feasibility of return (including any risks/mitigation measures needed).
  - If the leased land is to be reused for other purposes after the landfill closure, the PMO and local government will support "good faith negotiations" to seek consent from the villages/villagers and adjust the provisions for compensation [22].
  - If the land continues to be leased after the land closure, the prorated land rental will be paid per schedule outlined in the land leasing agreements.

- **For Yaotou Landfill**

  - If the leased land is to be returned to the villages/farmers after landfill closure, appropriate technical assessment with project support shall be carried out to confirm the feasibility of return.
  - If the landfill continue to lease land after closure, the prorated land rental will be paid in time per the land leasing agreements.

7.5 Inadequate Stakeholder Engagement Risk

7.5.1 Analysis of Stakeholder Engagement in the Project Area

Information disclosure and participation in the preparation, implementation and operation of the first batch of projects are important links to achieve the project objectives.

According to the investigation, relatively full information disclosure and public participation have been made for the existing facilities and Project-related facilities in the process of environmental impact assessment, social stability risk assessment, land acquisition and demolition, but the environmental monitoring

[22] Per the interview, Linwei is considering cooperating with an enterprise to re-use the land after landfill closure. This would require changes to the land lease agreements, which currently reflect agreement to return the land to the village/villagers after the landfill closure. "Good faith negotiations" in such a case would include discussion of measures to compensate/share benefits of such arrangement with communities.

information during the operation of the existing facilities is not actively disclosed to the surrounding communities on a regular basis, and the information on occupational diseases and hazards of workers is also insufficient. There are also fewer activities to solicit opinions from workers and community residents. At present, all kinds of workers and community residents are more likely to communicate and respond to problems with local town governments and community cadres.

7.5.2 Existing Monitoring and Management Measures to Promote Stakeholder Engagement

The laws and regulations of China, Shaanxi Province and the first batch of project districts and counties have made comprehensive and strict requirements on the approval and implementation process of major construction projects, the compensation plan for land expropriation and requisition, the allocation of government resources and other information disclosure, and required smooth channels for public participation. In addition, China and Shaanxi Province have established a systematic petition mechanism. Citizens, legal persons or other organizations can report the situation to the people's governments at all levels and the working departments of people's governments at or above the county level by letter, e-mail, fax, telephone, visit, etc., and put forward suggestions, opinions or complaints, which shall be handled by the relevant administrative organs according to law. However, there are deficiencies in the existing information disclosure and active communication mechanism for project workers and residents of surrounding communities.

7.5.3 Risk Level Assessment on Inadequate Stakeholder Engagement

Due to the sensitivity of the project activities, insufficient participation may still exist in the later implementation and operation process. In general, considering the construction scale of the first batch of projects, the risks of insufficient information disclosure and participation and exclusion are "**moderate**", as shown in Table 7-13.

Table 7-13 Risk Level of Insufficient Stakeholder Engagement

Facilities	Construction stage		Operation stage	
	Risk	Level	Risk	Level
Front-end collection facilities	Insufficient participation of residents in surrounding communities during site selection makes it difficult to build the facilities; the waste cans in the community are placed in unreasonable	M	Community workers may be excluded from the mainstream consultation process.	M

Facilities	Construction stage		Operation stage	
	Risk	Level	Risk	Level
	positions, which brings inconvenience to the elderly and pregnant women;			
Transfer facility	Insufficient participation of residents of surrounding communities in the process of land acquisition and site selection of the Project leads to difficulties in building facilities; The land acquisition policy, compensation standard and resettlement scheme are not communicated and negotiated with the affected communities and people.	M	The PIU has not established a communication mechanism with the community, and cannot timely handle the community's opinions and suggestions on the operation of the transfer station; Failure to publish environmental and social monitoring information will cause community dissatisfaction.	M
Sorting center	Failure to disclose the information of the project construction content and scheme in time may cause the surrounding communities not to support the project.	M	The PIU has not established a communication mechanism with the community, and cannot timely handle the community's opinions and suggestions on the operation of sorting facilities; Failure to publish environmental and social monitoring information will cause social dissatisfaction;	M
Landfill closure	Failure to disclose information on the closure scheme in a timely manner may result in surrounding communities not supporting the project.	M	Non-disclosure of post-closure land reuse schemes and associated environmental and social monitoring information may cause community dissatisfaction.	M

7.5.4 Design Optimization and Mitigation Measures to Mitigate Inadequate Stakeholder Engagement Risks

According to the risk factors identified in the social impact assessment, the SIA unit proposed the following relevant design optimization and mitigation measures after consultation with the Shaanxi PMO, district and county PMOs and the PIU, as shown in Table 7-14.

In addition, a separate Stakeholder Engagement Plan (SEP) was developed for the first project activities to instruct the Shaanxi PMO and district/county

PMOs to conduct meaningful stakeholder consultations throughout the project cycle.

Table 7-14 Design Optimization and Mitigation Measures to Promote Stakeholder Engagement

Facilities	Design optimization	Responsible subject	Mitigation measures	Responsible subject
Front-end collection facilities	o The opinions and suggestions of the surrounding community residents shall be fully consulted for site selection.	Environmental sanitation departments of Linwei District and Chencang District; Township governments; Contractor; Designer	o The implementation will be in accordance with the Stakeholder Engagement Plan (SEP) and the determined Grievance Redress Mechanism (GRM) and sufficient resources will be provided to ensure the effective operation of the relevant mechanism;	Environmental sanitation departments of Linwei District and Chencang District
Transfer facilities (including the waste transfer truck maintenance center in Chencang District)	o The project land acquisition, site selection, site facility layout plan, etc. shall be disclosed to community residents to solicit relevant opinions and suggestions.	Environmental sanitation departments of Linwei District, Chengcheng County and Chencang District; Township governments; Designer	o The implementation will be in accordance with the Stakeholder Engagement Plan (SEP) and the determined Grievance Redress Mechanism (GRM) and sufficient resources will be provided to ensure the effective operation of the relevant mechanism; o A special column will be set up on the government website to regularly publish project information, especially environmental and social performance information; o Environmental and social monitoring information in the operation process will be released to communities in a timely manner.	Environmental sanitation departments of Linwei District, Chengcheng County and Chencang District
Sorting center	o The layout plan of on-site facilities shall be disclosed to community residents to solicit relevant opinions and suggestions.	Environmental sanitation department of Linwei District; Linwei District Used Material Recovery Company;	o The implementation will be in accordance with the Stakeholder Engagement Plan (SEP) and the determined Grievance Redress Mechanism (GRM) and sufficient resources will be provided to ensure the effective operation of the relevant mechanism; o A special column will be set up on the government website to regularly publish project information, especially environmental and social performance information;	Linwei District Used Material Recovery Company

Facilities	Design optimization	Responsible subject	Mitigation measures	Responsible subject
			o Environmental and social monitoring information in the operation process will be released to communities in a timely manner.	
Landfill closure	o The closure scheme and post-closure land reuse scheme shall be disclosed to community residents to solicit relevant opinions and suggestions.	Environmental sanitation departments of Linwei District, Chengcheng County and Baoji City; Township governments;	o The implementation will be in accordance with the Stakeholder Engagement Plan (SEP) and the determined Grievance Redress Mechanism (GRM) and sufficient resources will be provided to ensure the effective operation of the relevant mechanism; o A special column will be set up on the government website to regularly publish project information, especially environmental and social performance information; o Timely disclose environmental and social monitoring information to communities during closure and post-closure O&M	Environmental sanitation departments of Linwei District, Chengcheng County and Baoji City

7.6 Risks of Exclusion

7.6.1 Analysis of Risks of Exclusion

The risks of exclusion of the Project mainly target the vulnerable groups affected by the Project. If the needs of these groups are not fully considered in the design, management and operation of the Project, effective safety risk management is not carried out, or equal development opportunities are not provided, the basic labor rights and interests and safety of these groups may not be effectively guaranteed or their interests may be damaged.

The vulnerable groups of the Project mainly include cleaners from village-level public welfare posts without subsidies and sufficient safety risk control measures involved in front-end facilities in Linwei District, Chengcheng County and Chencang District.; people picking up waste at town-level informal waste dumps; and the workers who have not signed labor contracts in the Sorting Center of Linwei District and the Domestic Waste Landfill in Yaotou Town, Chengcheng County.

According to the social audit, most of the front-end community workers are from public welfare posts in villages, mainly responsible for the cleaning and transfer of waste in villages. Some of them are not provided with personal accident insurance and related safety training, so it may be impossible to for them obtain the same occupational health and safety protection and training as direct workers, and they are more likely to be excluded from the mainstream consultation process.

Some workers in sorting centers, transfer stations and landfills among the existing facilities fail to sign labor contracts, and their labor remuneration is lower than the local minimum wage level. These workers are usually older and less educated, so they are more likely to be excluded from the mainstream consultation process.

A small number of villagers (about 50 people according to preliminary estimates) pick up waste in the township-level informal waste dumps of Linwei District, Chengcheng County and Chencang District. With the improvement of waste systems in the three counties (districts), domestic waste in towns and townships will not be placed in these informal waste dumps in a centralized manner, which may partially affect their income. Those who pick up waste are often less educated and skilled and are unlikely to obtain the development opportunities brought by the project compared with other people.

7.6.2 Existing Management Measures for Risks of Exclusion

According to the due diligence, there are deficiencies in the management of these vulnerable groups at present, including non-compliance of labor contract management, insufficient awareness and means of labor safety risk management, and imperfect communication and complaint handling mechanisms; those who pick up waste may lack the ability and opportunity to obtain income, so the opportunity for them to participate in project negotiation is small.

7.6.3 Risk Level Assessment on Exclusion

In view of the vulnerability characteristics of the above three groups, the lower level of management may deepen the impact on them, so the impact of the Project on vulnerable groups is "**moderate**". Development opportunities for these vulnerable groups will be fully considered in the design and implementation process by improving the existing management mechanisms and procedures. See Table 7-15.

Table 7-15 Risk Level of Exclusion

Facilities	Key Personnel and Their Characteristics	Construction and Operation Phase	
		Risk	Level
Front-end collection facilities	Most of the community workers are public welfare workers in villages, mainly female, older and less educated	The safety of community workers is not guaranteed and there is no effective GRM, so they may be excluded from the mainstream consultation process.	M
Closure of Sorting Center and Chengcheng Landfill	Some workers are old and less educated, and have not signed formal contracts	The basic rights and interests of workers are not guaranteed, they have not signed labor contracts, and their wage income is lower than the local minimum wage, with no rest days, so they may be excluded from the mainstream consultation procedures.	M
Township-level informal waste dumping	Waste collectors (about 50 people), with average educational level, low skill level and low income level	People picking up waste at informal waste dumps may be excluded from the project and lack the opportunity to benefit from the project.	M

7.6.4 Design Optimization and Mitigation Measures

According to the risk factors identified in the social impact assessment, the SIA unit proposed the following relevant design optimization and mitigation measures after consultation with the Shaanxi PMO, district and county PMOs and the PIU, as shown in Table 7-16.

Table 7-16 Design Optimization and Mitigation Measures to Mitigate Risks of Exclusion

Facilities	Design optimization	Responsible subject	Mitigation measures	Responsible subject
Front-end collection facilities	/	/	o Strengthen the management of community workers, sign labor contracts, and provide accident insurance and safety awareness training; o The functions of the sanitation department are extended to provide guidance and supervision for the management of community workers.	Environmental sanitation departments of Linwei District and Chencang District; Township governments and village committees
Sorting center	/	/	o Sign labor contracts and inform about possible occupational diseases and their hazards; o Provide occupational health and safety training.	Linwei District Used Material Recovery Company
Closure of Chengcheng Landfill	/	/	o Sign labor contracts and inform about possible occupational diseases and their hazards; o Provide occupational health and safety training.	Chengcheng County ESC
Township-level informal waste dumping	o The development opportunities of these groups are considered in the design of the urban-rural integration system and agricultural film treatment.	Provincial PMOs and district and county PMOs Environmental sanitation departments/supply and marketing cooperatives of Linwei District, Chengcheng County and Chencang District Township government	o Priorities to participate in the future urban and rural waste collection and transfer system will be given to waste collectors at informal waste dumps on the basis of respecting their willingness and considering their work abilities, for example, suitable posts (such as village-level cleaners, agricultural film collection and transfer workers, etc.) will be provided to them after consultation with communities.	Provincial PMOs and district and county PMOs Environmental sanitation departments/supply and marketing cooperatives of Linwei District, Chengcheng County and Chencang District Township government

7.7 Project NIMBY Risk

7.7.1 Analysis of NIMBY Risk

NIMBY is a cross-cutting issue, which is comprehensively affected by various factors. It is mainly because that residents in surrounding communities have concerns and doubts about the impact of the construction of these waste collection, transfer and treatment facilities on their own health, surrounding environment and regional development; they may object to the construction of these subprojects, complain or even hinder the construction, and trigger community conflicts.

The facilities to be built during the first project activities may cause negative impacts such as noise, odor leakage and dust during construction and operation. For the protection and maintenance of their own health, surrounding environment and regional development, residents in surrounding communities may have complaints or even work hindrances against project construction and cause community conflicts; insufficient information disclosure and no direct channel for complaints may deepen the complaints of community residents, thus failing to support the reconstruction, expansion or new facilities or hindering the operation of the project. Through the analysis of the above risks, it can be found that the land acquisition activities of the proposed facilities in the first project activities, the civil engineering activities of the project, the operation of waste transfer and treatment facilities, and residents' long-term negative conception of waste treatment facilities may cause certain NIMBY risks.

The analysis of NIMBY risks of the proposed facilities for the first batch of project activities is as follows:

- **Front-end Collection Facility**

According to the survey, the villages involved in the first batch of project activities have carried out waste classification and collection; however, most of the waste cans are prepared by villagers as needed, and some villages will have waste cans or waste bins. The villagers have a strong willingness to improve the existing collection facilities. The scale of the collection facilities is not large, and the site selection is decided by the villagers after consultation. According to the sample survey, more than 90% of the respondents expressed support for the construction of collection facilities. Therefore, the NIMBY risk for front-end collection facilities is "low".

- **Transfer facility**

In the first batch of projects, 22 new waste transfer stations will be built and reconstructed, with a daily waste transfer capacity of 16t/d~200t/d, of which only 4 transfer stations have a design capacity of more than 100t/d. The construction of the waste transfer stations will produce negative impacts such as noise and dust, and the entry and exit of construction vehicles may pose safety risks to nearby communities and health; during the operation process, the operation of the transfer stations and the entry and exit of the waste trucks may lead to waste leakage, odor[23] (especially when the temperature is high in summer), sewage and noise from the waste transfer stations, as well as the breeding of mosquitoes and flies. The above disturbance to the community environment and life will cause opposition and protest from the community residents. The NIMBY risk for the construction and operation of the waste transfer station is "**Moderate**".

- **Sorting center**

The waste sorting center in Linwei District of Weinan City is mainly used to sort the recyclable waste in Linwei District, with a design daily capacity of 135t/d. The recyclable waste is from the waste recycling companies of supply and marketing societies, including plastic bottles, waste plastics, waste paper, waste metal, waste fabrics, etc. The process of the sorting center includes unloading, conveying, sorting, compression, packaging, etc.

According to the investigation, the sorting center is located in the middle section of Huashan Street in the main urban area of Linwei District. Except that it is adjacent to Yuxin Logistics Company in the east and Xinli Community Buildings 4 and 5 (about 65 households) in the west, other sensitive communities are all 100 meters away[24].

In addition to the construction impact, the waste gas, wastewater and noise from the sorting center during operation are less; during operation, transportation vehicles may have a certain safety impact on surrounding residents. Generally speaking, the sorting center has a "low" NIMBY risk.

- **New waste transfer truck parking & maintenance center**

The new waste transfer truck parking & maintenance center in Chencang District covers an area of 16.5 mu. It includes a bus station administration building with a floor area of 200m^2 and 350 parking spaces of various types. According to the on-site investigation, the maintenance center is located on the dead-end road to the west of Baoji Shooting Center. The land is now a green belt, and there are

[23] Odor gases mainly include ammonia and hydrogen sulfide.
[24] Refer to the Social Audit Report of Batch 1 subprojects for details.

no communities around it. [25]As the Project could bring little disturbance to the surroundings in the construction and operation stages, the NIMBY risk that may come with the construction of the new waste transfer truck parking & maintenance center is low.

- **Landfill closure**

Batch 1 subprojects include the closure of four existing waste landfills. Notwithstanding the possible impact of noise and dust on the neighborhoods and the health of residents during the construction period, the treatment of existing landfill (including pile cleanup, rainwater diversion and drainage, leachate collection, diversion and drainage, landfill gas collection and treatment and ecological restoration) can significantly improve the environmental conditions of existing landfill and effectively reduce the impact of the odor and sewage from the landfills on the surrounding communities and residents. According to the social impact survey, the surveyed residents expressed their support for this. However, the villagers around the existing landfill may be dissatisfied and the work during the closure of the landfill could be hindered. For this reason, a "moderate" NIMBY risk may accompany with the landfill closure.

7.7.2 Existing Management Measures for NIMBY Risks

China and Shaanxi Province have laid down technical specifications and standards for specifying the site selection and construction of municipal solid waste sanitary facilities, such as *Technical Code for Municipal Solid Waste Landfills* (CJJ17-2004), *Standard for Pollution Control on Municipal Solid Waste Landfills* (GB16889-2008) and *Code for Planning of Urban Environmental Sanitation Facilities* (GB50337-2003). The layout of environmental sanitation facilities shall meet the operation requirements and be coordinated with the surrounding environment, so as to facilitate the classified collection, transportation and recycling of wastes. Additionally, the layout shall provide for sanitary protection zone (SPZ). If the design transfer capacity of the domestic waste transfer station is 50t/d~150t/d, the minimum distance from the adjacent buildings outside the transfer station shall be 10m, which can avoid the impact on the surrounding communities and residents.

The districts and counties in the project area have established a bottom-up communication mechanism to address the opinions and suggestions of surrounding communities and residents. Residents can offer opinions to the community residents committee. If the committee cannot address the issues, residents can complain to the Sub-district Office and the complaint letter and

[25] Refer to the Social Audit Report of Batch 1 subprojects for details.

request handling office of Linwei District. Residents can also make complaints by calling the 12345 Citizen Hotline and 12369 Environmental Protection Hotline.

7.7.3 Risk Level Assessment on NIMBY

It should be noted that the waste transfer station and sorting center are typical NIMBY facilities, and the new works may have a cumulative impact on the environment and society of the surrounding communities and residents. The NIMBY risks will exist throughout the project. It is expected to have good solutions to effectively resolve the NIMBY risks, otherwise it is very likely to cause new NIMBY incidents. In general, the NIMBY risk of the facilities serving the activities of Batch 1 Subprojects is "**moderate**". See Table 7-17 for the NIMBY risk level of each subproject.

Table 7-17 Risk Level of NIMBY

Facilities	Construction stage		Operation stage	
	Risk	Level	Risk	Level
Front-end Collection Facility	Insufficient consultation resulting in some villagers' dissatisfaction with the construction of collection facilities	L	Low odor, low noise, far away from residential areas, little environmental impact	L
Transfer facility (transfer station)	Dissatisfaction of surrounding communities and residents arising from construction noise and dust	M	Failure in effective treatment of sewage, noise or odor, leading to dissatisfaction of surrounding communities and residents	M
Sorting center	Dissatisfaction of surrounding communities and residents arising from construction noise and dust	M	Failure in effective treatment of sewage, noise or odor, leading to dissatisfaction of surrounding communities and residents	M
Waste transfer truck parking & maintenance center	Dissatisfaction of surrounding communities and residents arising from construction noise and dust	L	Dissatisfaction of surrounding communities and residents arising from exhaust gas emission, noise and sewage discharge	L
Landfill closure	The villagers around the existing landfill may be dissatisfied and the work during the closure of the landfill could be hindered.	M	Landfill gas and leachate are effectively treated, and the surrounding environment of the community is improved	L

7.7.4 Design Optimization and Mitigation Measures

After consultation with the PIU of each subproject, the SIA unit has proposed the following design optimization and mitigation measures according to the above identified NIMBY risks of the project. See Table 7-18 for details.

Table 7-18 Design Optimization and Mitigation Measures to Mitigate NIMBY Risks

Facilities	Design optimization	Responsible subject	Social Risk Mitigation	Responsible subject
Front-end Collection Facility	o With residents' participation, determine the layout of waste collection points or sorting pavilions according to their needs. o Adjust the layout of water collection points or sorting pavilions to local conditions, and optimize their distribution distance, thus making it convenient for waste dumping, collection and transportation.	The Designer, and environmental sanitation services of Linwei District, Chengcheng County and Chencang District	o Land use procedure o During the implementation and operation of the project, extensive information disclosure and public participation can allow residents to gradually accept the way of waste collection and transfer and raise good awareness (**see the Stakeholder Engagement Plan for details**). o The PIU can establish a Grievance Redress Mechanism (GRM) for the residents of the surrounding communities under the charge of specially-assigned persons, and announce the complaint number and contact information to the surrounding communities before the implementation of the project.	Environmental sanitation services of Linwei District, Chengcheng County and Chencang District
	o Before implementation, conduct information disclosure, solicit opinions from residents, and give publicity and education.	Construction Contractor, and environmental sanitation services of Linwei District, Chengcheng County and Chencang District	o	

Facilities	Design optimization	Responsible subject	Social Risk Mitigation	Responsible subject
Transfer facility (transfer station)	o Incorporate deodorization and sewage collection facilities in the waste transfer design. o Reasonably arrange the project layout, and keep high-noise equipment, main sewage outlets and other facilities away from sensitive points around the project.	The Designer, and environmental sanitation services of Linwei District, Chengcheng County and Chencang District	o Release to the public the relevant information of the construction project through official websites, site publicity display boards and community residential areas within one month before the commencement of construction. o The PIU can establish a consultation and communication system with the communities to exchange information and respond to the appeals, complaints and requests from the communities during the construction and operation periods. This is embodied as monthly communication during the implementation period and quarterly communication during the operation period. o Timely release of environmental monitoring data and information to the stakeholders during facility operation. o The PIU can establish a Grievance Redress Mechanism (GRM) for the residents of the surrounding communities under the charge of specially-assigned persons, and announce the complaint number and contact information to the surrounding communities before the implementation of the project.	Environmental sanitation services of Linwei District, Chengcheng County and Chencang District

Facilities	Design optimization	Responsible subject	Social Risk Mitigation	Responsible subject
	o Optimize the construction organization scheme, develop reasonable construction procedures and construction schedules to minimize the impact of construction on communities.	Construction Contractor, and environmental sanitation services of Linwei District, Chengcheng County and Chencang District	o	
Sorting center	o Reasonably arrange the project layout, and keep high-noise equipment, main sewage outlets and other facilities away from sensitive points around the project.	Designer, environmental sanitation service of Linwei District	o Release to the public the relevant information of the construction project through official websites, site publicity display boards and community residential areas within one month before the commencement of construction. o The PIU can establish a consultation and communication system with the communities to exchange information and respond to the appeals, complaints and requests from the communities during the construction and operation periods. This is embodied as monthly communication during the implementation period and quarterly communication during the operation period. o Timely release of environmental monitoring data and information to the stakeholders during facility operation. o The PIU can establish a Grievance Redress Mechanism (GRM) for the residents of the	Environmental sanitation service of Linwei District (construction period) and waste material recovery company of Linwei District (operation period)

Facilities	Design optimization	Responsible subject	Social Risk Mitigation	Responsible subject
			surrounding communities under the charge of specially-assigned persons, and announce the complaint number and contact information to the surrounding communities before the implementation of the project.	
	o Optimize the construction organization scheme, develop reasonable construction procedures and construction schedules to minimize the impact of construction on communities.	Construction Contractor, and environmental sanitation service of Linwei District	o	
Waste transfer truck parking & maintenance center	o Optimize the layout plan of the parking lot to ensure that the vehicle entrance and exit are far away from the residential communities for the sake of their safety. o Set up appropriate traffic signs. o Make a proper schedule for vehicle operation so as not to interfere with the traffic and communities.	The Designer, and Waste Management Service Center of Chencang District	o Release to the public the relevant information of the construction project through official websites, site publicity display boards and community residential areas within one month before the commencement of construction. o The PIU can establish a consultation and communication system with the communities to exchange information and respond to the appeals, complaints and requests from the communities during the construction and operation periods. This is embodied as monthly communication during the implementation period and quarterly communication during the operation period. o The PIU can establish a Grievance Redress Mechanism (GRM) for the residents of the surrounding communities under the charge	Chencang District Waste Management Service Center

Facilities	Design optimization	Responsible subject	Social Risk Mitigation	Responsible subject
			of specially-assigned persons, and announce the complaint number and contact information to the surrounding communities before the implementation of the project.	
	o Optimize the construction organization scheme, develop reasonable construction procedures and construction schedules to minimize the impact of construction on communities.	Construction Contractor, and Waste Management Service Center of Chencang District	o	
Landfill closure	o Optimize the construction organization scheme, develop reasonable construction procedures and construction schedules to minimize the impact of construction on communities.	Construction Contractor, and environmental sanitation services of Linwei District, Chengcheng County and Baoji City (Urban Management and Law Enforcement Bureau)	o Release to the public the relevant information of the construction project through official websites, site publicity display boards and community residential areas within one month before the commencement of construction. o Monitor the soil and groundwater around the landfill, and timely release the monitoring results to the surrounding communities and residents. o Give publicity and education on landfill gas and leachate treatment among the residents of surrounding communities. o The PIU can establish a Grievance Redress Mechanism (GRM) for the residents of the surrounding communities under the charge	Environmental sanitation services of Linwei District, Chengcheng County and Baoji City (Urban Management and Law Enforcement Bureau)

Facilities	Design optimization	Responsible subject	Social Risk Mitigation	Responsible subject
			of specially-assigned persons, and announce the complaint number and contact information to the surrounding communities before the implementation of the project.	

7.8 Social Benefits of the Project

Batch 1 subprojects aim to establish an integrated operation mode of urban and rural sanitation among the districts and counties in the project area, build a full-chain domestic waste collection and transfer system that coordinates the integration of urban and rural sanitation facilities, and form a closed-loop management mode featuring collection by villages, transportation by towns and townships and centralized treatment by cities. In the long term, a recyclable regeneration system with full coverage of waste collection and transportation, fully-closed compression and transfer, and harmless incineration power generation will be realized.

The implementation of Batch 1 subprojects can increase the resource value and economic value of the wastes in the project area and improve the urban and rural sanitation integrated system. The social benefits to rural areas are particularly obvious, mainly reflected in improving waste collection and transportation facilities, reducing the pollution that the non-sanitary landfill of rural domestic wastes brings to the regional environment, and creating a beautiful, comfortable and clean living environment for rural residents. It is also conducive to attracting investment and developing tertiary industries such as tourism, thus boosting local economic development.

After the implementation of the waste landfill closure subproject among Batch 1 subprojects, the change of domestic waste disposal from the traditional waste landfill mode to the waste-to-energy mode can significantly improve the effect in waste reduction, effectively reduce the pollution of domestic waste to the atmosphere, waters and soil, and promote the progress of waste harmlessness and recycling, as well as save land resources.

In addition to the above, Batch 1 subprojects can also provide job opportunities for local people during the construction and operation periods, especially promote the household income of vulnerable groups in rural areas.

8 Social Management Plan

8.1 Social Action Plan

Taking into consideration the results of public participation activities in the process of social audit and social impact assessment (SIA), analyze the risk management measures taken by the project owner in the actual management and design process of the project, and evaluate social performance and possible gaps. Then, as required by the applicable environmental and social standards (ESSs), the SIA unit will propose appropriate mitigation measures based on the Mitigation Hierarchy. Finally, the SIA unit, the Shaanxi PMO, and the district/county PMOs of Batch 1 subprojects will, together with the PIU, discuss and confirm with each other about the mitigation measures proposed in this report, and clarify the responsibilities of relevant parties and the timing for implementation of these measures.

The purpose of the social management plan is to improve the overall effect of the project, including:

- Activating and trying to enlarge and prolong positive benefits by taking positive, encouraged and enforced measures.
- Reducing and mitigating negative impacts to control social risks by first optimizing the engineering scheme and then making provision for this purpose in terms of policies, systems, mechanisms, institutions, funds, procedures, personnel and technical measures.

A detailed stakeholder engagement plan is also required for the smooth construction and operation of the project. The stakeholder engagement plan needs to identify stakeholders and propose appropriate ways and methods for participating in the planning, design, preparation, implementation, monitoring and evaluation of the project. A separate stakeholder engagement plan has been developed for activities of Batch 1 subprojects as a guideline for information disclosure, public participation, community communication and grievance handling throughout the project.

The mitigation measures proposed for social impacts and risks will be turned into a social management plan, including implementation time, implementation units and monitoring arrangements. The social management action plan can be realized in stages. The management level can be lower in the first three to five years of the project, but needs to be continuously improved in the later stage, as shown in Table 8-1.

Table 8-1 Social Management Plan

No.	Potential impact	Facilities	Specific actions	Budget (RMB 10,000)	Implementation duration	Responsible unit	Monitoring indicators	Time and frequency of monitoring
1	Working conditions, occupational health and safety of workers	Front-end collection facilities	**Design optimization** o Provide front-end waste collection and transportation vehicles in conformity with the local terrain characteristics. **Social management measures** o Improve LMP to ensure that the labor employment terms and conditions, OHS, and GRM of workers are effectively guaranteed; o For **community workers**, ensure voluntary provision of labor; provide accident insurance and sufficient PPE; provide some job opportunities for future facility maintenance and agricultural film treatment at a higher remuneration; provide training, including training on Covid-19 prevention and control, operation of field separation machinery of agricultural film, and operation of new waste collection trucks (in Chengcheng County and Chencang District); extend the management responsibilities of relevant sanitation departments to regularly guide and monitor the community worker management performance. o For **contractor** management, implement the labor management requirements for contractors in the bidding procurement documents and incorporate them into the contract terms; specify remedial measures against non-compliance in the contract, and establish the procedures for third-party performance management and monitoring; for contracted workers for township waste collection and transportation, also ensure that third-party companies purchase accident insurance for them;	300	Project construction and operation period	Linwei and Chencang PMOs, as well as sanitation departments, township governments, village committees, Designer Contractor	○ Improvement and implementation of labor management procedures ○ Minimum age of workers ○ Working hours ○ Minimum wage level and wage payment ○ Times and number of participants of induction and pre-job training ○ Times and number of participants of occupational health and safety training ○ Distribution and use of personal protective facilities for workers ○ Frequency and record of occupational hazard detection at workplaces ○ Frequency and number of workers receiving occupational health examination ○ Formulation of emergency plans, frequency of drills, number of participants, and on-site records ○ Grievance redress mechanism for workers	Project implementation period (2023~2028), semi-annually

No.	Potential impact	Facilities	Specific actions	Budget (RMB 10,000)	Implementation duration	Responsible unit	Monitoring indicators	Time and frequency of monitoring
			o Monitor and evaluate labor management performance and make continuous improvement of LMP.					
		Transfer facility	**<u>Design optimization</u>** o At the same time of project design, entrust a professional organization to make OHS evaluation on proposed facilities. o According to the pre-evaluation results, make OHS design, optimize model selection of deodorization and sewage collection facilities, and try to select low-noise equipment. o Fully consider the optimization of vehicle traffic paths in and around the site boundary, and erect appropriate traffic safety facilities and guide signs; provide transfer trucks with speed control devices. **<u>Social management measures</u>** o Improve LMP to ensure that the labor employment terms and conditions, OHS, and GRM of workers are effectively guaranteed; o Entrust a qualified institution to test the occupational hazard factors in the workplace, carry out occupational health examinations for workers according to the test results, and distribute targeted PPE; o Take mitigation measures for OHS factors, such as formulating the standard operation procedures (SOPs), employee training plans (including operating procedures, road traffic safety of drivers, and COVID-19 prevention and control), and OHS emergency plans according to the characteristics of the workplace, and conducting regular drills; o For **contractor** management, implement the labor management requirements for contractors in the bidding procurement documents and incorporate them into the	100		Linwei, Chengcheng, and Chencang PMOs and sanitation departments Designer Contractor		

No.	Potential impact	Facilities	Specific actions	Budget (RMB 10,000)	Implementation duration	Responsible unit	Monitoring indicators	Time and frequency of monitoring
			contract terms; specify remedial measures against non-compliance in the contract, and establish the procedures for third-party performance management and monitoring. o Monitor and evaluate labor management performance and make continuous improvement of LMP.					
		Sorting facility	**Design optimization** o Fully consider the optimization of vehicle traffic paths in and around the site boundary, and erect appropriate traffic safety facilities and guide signs; provide transfer trucks with GPS and speed control systems. o Apply the design to mitigate occupational hazard factors, optimize model selection, and try to select low-noise equipment. **Social management measures** o Improve LMP to ensure that the labor employment terms and conditions, OHS, and GRM of workers are effectively guaranteed; o Entrust a qualified institution to test the occupational hazard factors in the workplace, carry out occupational health examinations for workers according to the test results, and distribute targeted PPE; o Take mitigation measures for OHS factors, such as formulating the standard operation procedures (SOPs), employee training plans (including operating procedures, road traffic safety of drivers, and COVID-19 prevention and control), and OHS emergency plans according to the characteristics of the workplace, and conducting regular drills; o For **contractor** management, implement the labor management requirements for contractors in the bidding procurement documents and incorporate them into the	10		Linwei PMO and Linwei District Used Material Recovery Company, Designer Contractor		

No.	Potential impact	Facilities	Specific actions	Budget (RMB 10,000)	Implementation duration	Responsible unit	Monitoring indicators	Time and frequency of monitoring
			contract terms; specify remedial measures against non-compliance in the contract, and establish the procedures for third-party performance management and monitoring. o Monitor and evaluate labor management performance and make continuous improvements to LMP.					
		Disposal facilities (landfill closure)	**<u>Design optimization</u>** o Entrust a professional organization to assess the current situation of the existing landfill, and consider relevant mitigation measures in the design according to the assessment conclusion (such as mitigation measures against slope sliding risk of Chengcheng Landfill and Changshougou Landfill in Baoji City). o Optimize traffic safety facilities and guide signs at the intersections of access roads to landfills (such as the Landfill in Baoji City). **<u>Social management measures</u>** o Improve LMP to ensure that the labor employment terms and conditions, OHS, and GRM of workers are effectively guaranteed; o Entrust a qualified institution to test the occupational hazard factors in the workplace, carry out occupational health examinations for workers according to the test results, and distribute targeted PPE; o Take mitigation measures for OHS factors, such as formulating SOPs, employee training plans (including pre-job safety training and COVID-19 prevention and control), and emergency plans and measures in case of landslide, fire, explosion, and other accidents in the closure process before closure according to the characteristics of the workplace, and conducting regular drills;	30		PMOs at all levels, Linwei, Chengcheng, and Baoji PMOs and sanitation departments, Designer Contractor		

No.	Potential impact	Facilities	Specific actions	Budget (RMB 10,000)	Implementation duration	Responsible unit	Monitoring indicators	Time and frequency of monitoring
			o For **contractor** management, implement the labor management requirements for contractors in the bidding procurement documents and incorporate them into the contract terms; specify remedial measures against non-compliance in the contract, and establish the procedures for third-party performance management and monitoring. o Monitor and evaluate labor management performance and make continuous improvement of LMP.					
2	Community Health and Safety	Front-end collection facilities	**Design optimization** o The site selection of front-end collection facilities shall be fully consulted and supported by community residents. o Collection and transportation shall be carried out in time during the operation of front-end collection facilities. The frequency and time of collection and transportation shall be reasonably arranged according to the actual situation of each place and the suggestions of residents. The collection and transportation time shall avoid the traffic rush hours. **Social management measures** o Strengthen the road traffic safety training and management of front-end collection and transportation personnel, and improve safety awareness to avoid and reduce the occurrence of traffic accidents. o On the basis of the existing community GRM, establish and adopt a documented GRM, and extend the responsibilities of the sanitation department to guide and supervise the waste collection and transportation system of townships and villages.	50	Construction Period and Operation Period	Environmental sanitation departments of Linwei District and Chencang District; Township governments; Contractor; Designer	○ Contractor's expenditure on community health and safety activities ○ Number and loss of community safety accidents ○ Number of safety warning signs ○ Times and number of receivers of public and community health and safety publicity and education ○ Number of grievances and resolution	Project implementation period (2023~2028), semi-annually
		Transfer facility	**Design optimization**	50	Project constructio	Environmental sanitation		

No.	Potential impact	Facilities	Specific actions	Budget (RMB 10,000)	Implementation duration	Responsible unit	Monitoring indicators	Time and frequency of monitoring
			o In the project preparation stage, information disclosure shall be made on the site selection and construction content of the project, and opinions and suggestions of residents in surrounding communities shall be fully solicited. o Reasonably arrange the project layout, and keep high-noise equipment, main sewage outlets and other facilities away from sensitive points around the project; o Improve the construction organization plan, reasonably arrange the construction process and construction period, and minimize the impact on the communities; o Set up safety warning signs at critical sections of community traffic. **Social management measures** o During the construction and operation period of the Project, the operations after 8 p.m. shall be avoided as far as possible, especially the startup or operation of mechanical equipment, so as to avoid the noise impact on community residents at night; o For the urban transfer stations close to communities around Linwei District and Chengcheng County, effective measures shall be taken to reduce noise interference during the operation period from 5 to 7 a.m. o Standardize the management of drivers and vehicles and optimize the transportation routes to minimize impacts on communities; o Carry out safety education for local residents (including women, children, the elderly, etc.). o On the basis of the existing community GRM, establish and adopt a written GRM to actively handle community complaints and		n and operation period	departments of Linwei District, Chengcheng County and Chencang District; Township governments; Designer		

No.	Potential impact	Facilities	Specific actions	Budget (RMB 10,000)	Implementation duration	Responsible unit	Monitoring indicators	Time and frequency of monitoring
			feed back the handling results to the claimants in a timely manner.					
		Sorting facility	**Design optimization** o In the project preparation stage, information disclosure shall be made on the construction content of the project, and opinions and suggestions of residents of surrounding communities shall be fully solicited; o Design feasible and effective noise reduction and dust control scheme to avoid or mitigate the dust and noise impact on residents of surrounding communities during the operation period of the sorting center; Set up safety warning signs at critical sections of community traffic. **Social management measures** o Standardize the storage and management of flammable wastes such as waste plastics and waste paper, formulate fire emergency plan, improve the emergency response capacity and rescue level of communities, and regularly drill in adjacent communities; o Standardize the management of drivers and vehicles and optimize the transportation routes to minimize impacts on communities; o Carry out safety education for local residents (including women, children, the elderly, etc.). o Establish and adopt a written grievance response mechanism (GRM) to actively handle the community complaints and suggestions, and timely feed back the handling results to the claimants.	10	Project construction and operation period	Linwei District ESC; Linwei District Used Material Recovery Company; Township government Designer		
		Disposal facilities	**Design optimization** o Include corresponding technical schemes and measures to deal with the health	10	Project construction and	Linwei District ESC, Chengcheng		

No.	Potential impact	Facilities	Specific actions	Budget (RMB 10,000)	Implementation duration	Responsible unit	Monitoring indicators	Time and frequency of monitoring
		(landfill closure)	and safety risks of surrounding communities in the design; o Specify appropriate engineering and non-engineering measures to minimize impacts on the health of surrounding community residents during closure and future maintenance. o Specify appropriate plans and measures in the landfill closure method statement and the maintenance plan after the closure of Chengcheng Landfill to deal with the health risks of surrounding communities on the basis of full consultation with the Designer, competent departments of ecological environment, safety, etc., and surrounding communities and in combination with the requirements of relevant regulations and technical standards, ESIA, good domestic and international practices; o For the Changshougou Landfill in Baoji City with a risk of slope sliding, and corresponding technical solutions will be adopted to eliminate potential safety hazards; o Traffic safety facilities and signs at the entrance of the access road will be optimized. **Social management measures** o Complete the emergency plan for landfill closure before closure, conduct regular drills, and incorporate the adjacent communities to improve the emergency response capacity and rescue level of communities under abnormal working conditions; o Avoid the community for the construction campsite as far as possible; strengthen the management of contractor and its workers, ensure operation according to the design specifications and implement		operation period Project construction and operation period	County ESC and their township governments; Baoji Solid Waste Treatment Center		

No.	Potential impact	Facilities	Specific actions	Budget (RMB 10,000)	Implementation duration	Responsible unit	Monitoring indicators	Time and frequency of monitoring
			necessary measures to reduce the impact on the health and safety of community residents; o Monitor the health risks to surrounding communities during landfill closure and post-closure O&M and regularly inform the communities and surrounding residents of the monitoring results. o Establish a formal and documented grievance process prior to closure in conjunction with the existing community grievance handling channels, and establish and deploy resources and personnel to handle grievances throughout closure and post-closure O&M.					
		All project activities and facilities	As for actions and measures to manage SEA/SH risks, the PIU will: ○ clearly define the SEA/SH requirements and expectations in the bid documents, and make sure all civil works contracts include industry standard Codes of Conduct with measures to prevent SEA/SH and other clauses about SEA/SH -related cost; ○ inform the communities of SEA/SH risks and service providers prior to the commencement of the civil works, as part of stakeholder consultations; ○ provide trainings for relevant project workers and service providers in order to refer GBV survivors to existing, identified service providers and ensure that they are provided services promptly; ○ ensure the GRM having specific procedures to receive SEA/SH grievances anonymously and addressed in a confidential manner; and	20	Project construction and operation period	Linwei District ESC, Chengcheng County ESC and their township governments; Baoji Solid Waste Treatment Center	○ Number of SEA/SH grievances received and addressed; ○ Number of separate facilities provided during construction, ○ Cost for SEA/SH prevention	Project implementation period (2023~2028), semi-annually

No.	Potential impact	Facilities	Specific actions	Budget (RMB 10,000)	Implementation duration	Responsible unit	Monitoring indicators	Time and frequency of monitoring
			○ provide separate facilities during project construction, such as accommodation and toilet, for women and men					
3	Project land use	Front-end collection facilities	**Social management measures** o With the assistance of the township government, the district and county-level project management offices and PIUs release the project construction information and land use needs, understand and collect the intention and needs of the affected villages and farmers to provide land, and then take the affected villages as collective units to carry out land use through negotiation; After reaching an agreement, sign a land use agreement for rural public infrastructure, and provide key information such as land adjustment or land subsidy within the village collective; before the land use of the Project, the affected villages and households shall perform their respective duties in accordance with the agreement. o In practice, township and village committees will take measures (hold villagers' meetings for full consultation to determine the site selection; avoid occupying basic farmland and cultivated land; if the site selection involves the land contracted by farmers, obtain consent from the farmers and give appropriate compensation, etc.) to minimize the impact of resettlement: o The monitoring agency will monitor and evaluate the consultation process, consultation results, signing and performance of agreements, and report to the Shaanxi PMO and the World Bank every six months.	150	Project construction and operation period	PMOs at all levels; Environmental sanitation departments of Linwei District and Chencang District; township and village committees; Monitoring agency	○ Government approvals for Project land ○ Public consultation of Project land and times and number of people participated in the consultation ○ Land acquisition area of the Project ○ Number of people affected by land acquisition of the Project ○ Compensation policies and standards for land acquisition of the Project ○ Payment of compensations for land acquisition of the Project ○ Handling of pending problems of Project land ○ Livelihood recovery measures for affected people ○ Handling of resettlement complaints and appeals	Project Implementation Period (2023~2028), semi-annually
		Transfer facility	**Social management measures** o The district and county-level PMOs and PIUs compared and selected the project sites	50		PMOs at all levels; Environment		

No.	Potential impact	Facilities	Specific actions	Budget (RMB 10,000)	Implementation duration	Responsible unit	Monitoring indicators	Time and frequency of monitoring
			to avoid and reduce the impact of land acquisition and resettlement as much as possible. o For unavoidable land expropriation and resettlement, the resettlement action plan has been taken for the first batch of project activities in accordance with World Bank Standard ESS5 and corresponding laws and regulations of China. o The district and county-level PMOs and PIUs will implement the activities related to land expropriation and resettlement compensation in accordance with the resettlement action plan. o Shaanxi PMO will engage a third-party external monitoring agency for resettlement to monitor and evaluate the resettlement implementation to ensure the implementation of the resettlement objectives of the first batch of project activities.			al sanitation departments of Linwei District, Chengcheng County and Chencang District; Monitoring agency		
		Disposal facilities (landfill closure)	**<u>Social management measures</u>** o The Shaanxi PMO should assist the county PMO to find a feasible solution to the land use nonconformity in coordination with the county government and natural resources bureau, identify the restraints of such outstanding issue on landfill closure and the prerequisites to land use, and notify the Bank timely. It is sugguested that Chengcheng County Government should include land use planning for the landfill in the updated land spatial plan which is expected to be approved in June 2023 by the Shaanxi Provincial Government. Before starting the bidding for landfill closure, the county PMO should obtain the necessary approvals for land use (i.e., aligning with land zoning plan in the up-to-			PMOs at all levels; Environmental sanitation departments of Linwei District, Chengcheng County and Baoji City; Township governments and village committees		

No.	Potential impact	Facilities	Specific actions	Budget (RMB 10,000)	Implementation duration	Responsible unit	Monitoring indicators	Time and frequency of monitoring
			date land spatial planning, converting the farmland into construction land, obtaining land use certificate) and seek consent from the district Natural Resources Bureau about the landfill closure plan. o For compensation with villages/villagers subject to the likely potential scenario after the landfill closure, it is suggested: • If the leased land is to be returned to the villages/farmers after landfill closure, the PMO will support preparation of a technical assessment to confirm the feasibility of return (including any risks/mitigation measures needed). • If the leased land is to be reused for other purposes after the landfill closure, the PMO and local government will support "good faith negotiations" to seek consent from the villages/villagers and adjust the provisions for compensation . • If the land continues to be leased after the land closure, the prorated land rental will be paid per schedule outlined in the land leasing agreements.					
4	Insufficient Engagement	Front-end collection facilities	**<u>Design optimization</u>** o The opinions and suggestions of the surrounding community residents shall be fully consulted for site selection. **<u>Social management measures</u>** o The implementation will be in accordance with the Stakeholder Engagement Plan (SEP) and the determined Grievance Redress Mechanism (GRM) and sufficient resources will be provided to ensure the effective operation of the relevant mechanism.	10	Project construction and operation period	Environmental sanitation departments of Linwei District and Chencang District; Township governments; Contractor; Designer	○ Stakeholder's engagement in the formulation and implementation of the plan ○ Number of public participation during subproject preparation ○ Number of public participation during subproject construction and/or operation ○ Number of participants in public participation activities, including: direct workers (by type of work,	Project Implementation Period (2023~2028), semi-annually
		Transfer	**<u>Design optimization</u>**	10		Environmental sanitation		

No.	Potential impact	Facilities	Specific actions	Budget (RMB 10,000)	Implementation duration	Responsible unit	Monitoring indicators	Time and frequency of monitoring
		facilities (including the waste transfer truck maintenance center in Chencang District)	o The project land acquisition, site selection, site facility layout plan, etc. shall be disclosed to community residents to solicit relevant opinions and suggestions. **Social management measures** o The implementation will be in accordance with the Stakeholder Engagement Plan (SEP) and the determined Grievance Redress Mechanism (GRM) and sufficient resources will be provided to ensure the effective operation of the relevant mechanism; o A special column will be set up on the government website to regularly publish project information, especially environmental and social performance information; o Environmental and social monitoring information in the operation process will be released to communities in a timely manner.			departments of Linwei District, Chengcheng County and Chencang District; Township governments; Designer	gender, etc.); contracted workers (by type of work, gender, etc.); community workers (by type of work, gender, etc.); residents of surrounding communities (including vulnerable groups such as women and the elderly, etc.) ○ Complaints and handling, including the number of feedback received, the number of complaints received and the number of complaints handled	
		Sorting facility	**Design optimization** o The layout plan of on-site facilities shall be disclosed to community residents to solicit relevant opinions and suggestions. **Social management measures** o The implementation will be in accordance with the Stakeholder Engagement Plan (SEP) and the determined Grievance Redress Mechanism (GRM) and sufficient resources will be provided to ensure the effective operation of the relevant mechanism; o A special column will be set up on the government website to regularly publish project information, especially environmental and social performance information;	10		Environmental sanitation department of Linwei District; Linwei District Used Material Recovery Company;		

No.	Potential impact	Facilities	Specific actions	Budget (RMB 10,000)	Implementation duration	Responsible unit	Monitoring indicators	Time and frequency of monitoring
			o Environmental and social monitoring information in the operation process will be released to communities in a timely manner.					
		Disposal facilities (landfill closure)	**Design optimization** o The closure scheme and post-closure land reuse scheme shall be disclosed to community residents to solicit relevant opinions and suggestions. **Social management measures** o The implementation will be in accordance with the Stakeholder Engagement Plan (SEP) and the determined Grievance Redress Mechanism (GRM) and sufficient resources will be provided to ensure the effective operation of the relevant mechanism; o A special column will be set up on the government website to regularly publish project information, especially environmental and social performance information; o Timely disclose environmental and social monitoring information to communities during closure and post-closure O&M.	10		Environmental sanitation departments of Linwei District, Chengcheng County and Baoji City; Township governments		
5	Risks of exclusion	Front-end collection facilities	**Social management measures** o Strengthen the management of community workers, sign labor contracts, and provide accident insurance and safety awareness training; o The functions of the sanitation department are extended to provide guidance and supervision for the management of community workers.	50	Project construction and operation period	Environmental sanitation departments of Linwei District and Chencang District; Township governments and village committees	○ Times and number of participants of safety education and training ○ Number of participants of vulnerable groups in stakeholder engagement activities ○ Times and number of participants of occupational health and safety education ○ Number of waste collectors participating in the Project	Project implementation period (2023~2028), semi-annually
		Sorting center	**Social management measures**	10		Linwei District Used		

No.	Potential impact	Facilities	Specific actions	Budget (RMB 10,000)	Implementation duration	Responsible unit	Monitoring indicators	Time and frequency of monitoring
			o Sign labor contracts and inform about possible occupational diseases and their hazards; o Provide occupational health and safety training.			Material Recovery Company		
		Disposal facilities (landfill closure)	**Social management measures** o Sign labor contracts and inform about possible occupational diseases and their hazards; o Provide occupational health and safety training.	10		Chengcheng County ESC		
		Township-level informal waste dumping	**Design optimization** o The development opportunities of these groups are considered in the design of the urban-rural integration system and agricultural film treatment. **Social management measures** o Priorities to participate in the future urban and rural waste collection and transfer system will be given to waste collectors at informal waste dumps on the basis of respecting their willingness and considering their work abilities, for example, suitable posts (such as village-level cleaners, agricultural film collection and transfer workers, etc.) will be provided to them after consultation with communities.	15		Provincial PMOs and district and county PMOs; Environmental sanitation departments/ supply and marketing cooperatives of Linwei District, Chengcheng County and Chencang District; Township government		
6	NIMBY Risk	Front-end collection facilities	**Design optimization** □ With residents' participation, determine the layout of waste collection points or sorting pavilions according to their needs. o Adjust the layout of water collection points or sorting pavilions to local conditions, and optimize their distribution distance, thus making it convenient for waste dumping, collection and transportation.	50	Project construction and operation period	Environmental sanitation departments of Linwei District, Chengcheng County and Chencang	○ Expenditure on publicity and education of the Project ○ Number of villages, times and participants covered by project publicity and education ○ Types, times and number of participants of publicity activities carried out by	Project Implementation Period (2023~2028), semi-annually

No.	Potential impact	Facilities	Specific actions	Budget (RMB 10,000)	Implementation duration	Responsible unit	Monitoring indicators	Time and frequency of monitoring
			o Before implementation, conduct information disclosure, solicit opinions from residents, and give publicity and education. **Social management measures** o Land use consultation procedure o During the implementation and operation of the project, extensive information disclosure and public participation can allow residents to gradually accept the way of waste collection and transfer and raise good awareness (see the Stakeholder Engagement Plan for details). o The PIU can establish a Grievance Redress Mechanism (GRM) for the residents of the surrounding communities under the charge of specially-assigned persons, and announce the complaint number and contact information to the surrounding communities before the implementation of the project.			District; Designer; Construction Contractor (Contractor)	district and county PMOs, Designer and Contractors ○ Job opportunities provided to local workforce by the Project ○ Ways and results of project information disclosure ○ Complaints and handling	
		Transfer facility	**Design optimization** o Incorporate deodorization and sewage collection facilities in the waste transfer design. o Reasonably arrange the project layout, and keep high-noise equipment, main sewage outlets and other facilities away from sensitive points around the project. o Optimize the construction organization scheme, develop reasonable construction procedures and construction schedules to minimize the impact of construction on communities. **Social management measures** o Release to the public the relevant information of the construction project through official websites, site publicity display boards and community residential	45		Environmental sanitation departments of Linwei District, Chengcheng County and Chencang District; Designer; Construction Contractor (Contractor)		

No.	Potential impact	Facilities	Specific actions	Budget (RMB 10,000)	Implementation duration	Responsible unit	Monitoring indicators	Time and frequency of monitoring
			areas within one month before the commencement of construction; o The PIU can establish a consultation and communication system with the communities to exchange information and respond to the appeals, complaints and requests from the communities during the construction and operation periods. This is embodied as monthly communication during the implementation period and quarterly communication during the operation period; o Timely release of environmental monitoring data and information to the stakeholders during facility operation; o The PIU can establish a Grievance Redress Mechanism (GRM) for the residents of the surrounding communities under the charge of specially-assigned persons, and announce the complaint number and contact information to the surrounding communities before the implementation of the project.					
		Waste transfer truck parking & maintenance center	**<u>Design optimization</u>** o Optimize the layout plan of the parking lot to ensure that the vehicle entrance and exit are far away from the residential communities for the sake of their safety. o Set up appropriate traffic signs. o Make a proper schedule for vehicle operation so as not to interfere with the traffic and communities; o Optimize the construction organization scheme, develop reasonable construction procedures and construction schedules to minimize the impact of construction on communities. **<u>Social management measures</u>** o Release to the public the relevant information of the construction project	20		Waste Management Service Center of Chencang District; Designer; Construction Contractor (Contractor)		

No.	Potential impact	Facilities	Specific actions	Budget (RMB 10,000)	Implementation duration	Responsible unit	Monitoring indicators	Time and frequency of monitoring
			through official websites, site publicity display boards and community residential areas within one month before the commencement of construction. o The PIU can establish a consultation and communication system with the communities to exchange information and respond to the appeals, complaints and requests from the communities during the construction and operation periods. This is embodied as monthly communication during the implementation period and quarterly communication during the operation period. o The PIU can establish a Grievance Redress Mechanism (GRM) for the residents of the surrounding communities under the charge of specially-assigned persons, and announce the complaint number and contact information to the surrounding communities before the implementation of the project.					
		Sorting facility	**Design optimization** o Reasonably arrange the project layout, and keep high-noise equipment, main sewage outlets and other facilities away from sensitive points around the project. o Optimize the construction organization scheme, develop reasonable construction procedures and construction schedules to minimize the impact of construction on communities. **Social management measures** o Release to the public the relevant information of the construction project through official websites, site publicity display boards and community residential areas within one month before the commencement of construction.	10		Environmental sanitation service of Linwei District (construction period) and waste material recovery company of Linwei District (operation period;) Designer;		

No.	Potential impact	Facilities	Specific actions	Budget (RMB 10,000)	Implementation duration	Responsible unit	Monitoring indicators	Time and frequency of monitoring
			o The PIU can establish a consultation and communication system with the communities to exchange information and respond to the appeals, complaints and requests from the communities during the construction and operation periods. This is embodied as monthly communication during the implementation period and quarterly communication during the operation period. o Timely release of environmental monitoring data and information to the stakeholders during facility operation. o The PIU can establish a Grievance Redress Mechanism (GRM) for the residents of the surrounding communities under the charge of specially-assigned persons, and announce the complaint number and contact information to the surrounding communities before the implementation of the project.			Construction Contractor (Contractor)		
		Disposal facilities (landfill closure)	**Design optimization** o Optimize the construction organization scheme, develop reasonable construction procedures and construction schedules to minimize the impact of construction on communities. **Social management measures** o Release to the public the relevant information of the construction project through official websites, site publicity display boards and community residential areas within one month before the commencement of construction. o Monitor the soil and groundwater around the landfill, and timely release the monitoring results to the surrounding communities and residents.	30		Environmental sanitation services of Linwei District, Chengcheng County and Baoji City (Urban Management and Law Enforcement Bureau); Construction Contractor (Contractor)		

No.	Potential impact	Facilities	Specific actions	Budget (RMB 10,000)	Implementation duration	Responsible unit	Monitoring indicators	Time and frequency of monitoring
			o Give publicity and education on landfill gas and leachate treatment among the residents of surrounding communities; o The PIU can establish a Grievance Redress Mechanism (GRM) for the residents of the surrounding communities under the charge of specially-assigned persons, and announce the complaint number and contact information to the surrounding communities before the implementation of the project.					

8.2 Main Actions and Measures in Environmental and Social Commitment Plan (ESCP)

According to the project's social management plan, the following main actions and measures will be incorporated into the ESCP, as detailed in Table 8-2.

Table 8-2 Main Actions and Measures in Environmental and Social Commitment Plan (ESCP)

Expected action		Resources and Responsibilities	Implementation date
ESS1: Assessment and Management of Environmental and Social Risks and Impacts			
Design stage, environmental and social requirements	Provide design optimization measures including the comments on social impacts as proposals (for example, site selection, layout, occupational health and safety protection facilities of the transfer station) Optimize waste collection and transportation routes to avoid impact on densely populated communities, hospitals and schools.	Shaanxi PMO, District /County PMOs and PIU	In project design
Organization and capacity improvement	Shaanxi PMO, district/county PMOs and PIU can each arrange one social worker in charge of social management (social training, implementation of environmental and social measures, stakeholder engagement, complaint management, etc.).	Shaanxi PMO	From now on, throughout the project
Reporting mechanism	Employ a third-party independent monitoring agency to monitor environmental and social performance.	Shaanxi PMO	Since the project is approved, throughout the project
ESS2: Labor and Working Conditions			
Terms of employment, non-discrimination and equality of opportunity	Improve the labor management procedure (LMP), sign a formal written labor contract, and clarify the rights (e.g., wages and benefits) and obligations of workers.	District/County PMOs and PIU	Throughout the life cycle of the project
Occupational health and safety	Define relevant responsible departments and personnel, and allocate sufficient resources and funds. Establish workplace work procedures to ensure the work safety of workers. Conduct occupational health hazard detection on the sites, especially including the closure of waste transfer station and	District/County PMOs and PIU	Throughout the life cycle of the project

Expected action		Resources and Responsibilities	Implementation date
	landfill, and notify workers of the detection results. Perform regular occupational health examinations for workers taking jobs with occupational health hazards. Develop and implement worker training programs, including occupational health and safety training. Develop emergency response plans for occupational health and safety and conduct regular drills at least once a year.		
Complaints and grievances	Improve the existing employee complaint and grievance redress mechanism (GRM), and make a written record of how all complaints and grievances are handled.	District/County PMOs and PIU	Throughout the life cycle of the project
ESS4: Community Health and Safety Management			
Waste transfer safety management	Conduct safety management and training for transport vehicles and drivers.	District/County PMOs and PIU	Throughout the life cycle of the project
Waste collection and transportation	Optimize the route, frequency and time of waste collection and transportation to reduce disturbance to communities.	District/County PMOs and PIU	Throughout the life cycle of the project
Risks of infectious diseases (including COVID-19)	Establish a management mechanism for the prevention and control of infectious diseases (including COVID-19) and implement preventive measures.	District/County PMOs and PIU	Throughout the life cycle of the project
Potential health and safety management of existing landfill	Corresponding technical schemes and measures to deal with the health and safety risks of surrounding communities will be included in the design, including engineering and non-engineering measures.	District/County PMOs and PIU	Prior to landfill closure and throughout the life cycle of the project
Emergency plan	Before the implementation of the project, designate the coordinators according to the Emergency Response Plan, and give notices and trainings about relevant activities and do drills.	Shaanxi PMO, District /County PMOs and PIU	Throughout the life cycle of the project
ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement			
Land acquisition for transfer station	Optimize the project design to avoid and reduce land occupation; develop and implement the compensation plan for land acquisition;	District/County PMOs and PIU	Throughout the life cycle of the project

Expected action		Resources and Responsibilities	Implementation date
	monitor the land acquisition and resettlement.		
Land use for landfills	Coordinate district/county governments and PIU to negotiate with relevant parties (natural resources bureaus and communities) to work out a treatment plan that complies with relevant laws and regulations, including the land reuse plan after the expiration of the land lease period.	Shaanxi PMO, and District /County PMOs	Throughout the life cycle of the project
ESS10: Stakeholder Engagement and Information Disclosure			
Stakeholder engagement and consultation process and information disclosure	Implement the Stakeholder Engagement Plan (SEP) of Batch 1 subprojects for information disclosure and public participation, consultation and feedback, and update the SEP if necessary.	District/County PMOs and PIU	Throughout the life cycle of the project
Grievance Redress Mechanism	Establish a complaint and grievance redress mechanism (GRM) for the project and employees.	District/County PMOs and PIU	Before the start of the project, throughout the life cycle of the project

9 Institution Arrangement and Capacity Building

9.1 Institutional Arrangement

In order to ensure that the environmental and social impacts and risks of the project are properly managed, the following organizations are involved for environmental and social management of the project:

- Shaanxi Provincial Steering Committee (Project Leading Group, PLG) and Shaanxi PMO
- District/County PLGs and PMOs
- PIU
- Environmental and Social Expert Consultant of Shaanxi PMO
- External Environmental and Social Monitoring and Assessment Agency

The organizational structure of social management of the Project is shown in Figure 9-1.

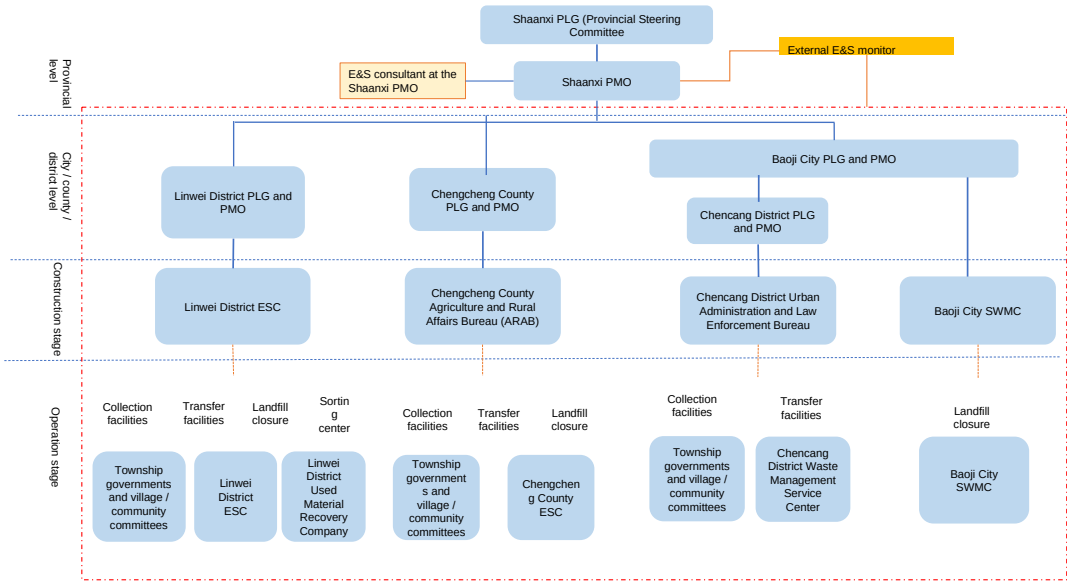


Figure 9-1 Organizational Structure of Social Management of Batch 1 Subprojects

9.2 Organizations and Responsibilities

- **Shaanxi Provincial Steering Committee**

Shaanxi has set up the Project Leading Group (PLG, also known as Provincial Steering Committee[26]) of the World Bank-financed China Plastic Waste Reduction

[26] The Provincial Steering Committee consists of the provincial development and reform commission, finance department, ecology and environment department, housing and urban-rural development department, agriculture and rural affairs department, commerce department, rural revitalization bureau, and federation of supply and marketing cooperatives, and the participating prefecture-level cities (Baoji, Xianyang, Weinan, Yulin, Hanzhong and Ankang).

Project in Shaanxi led by Shaanxi Provincial Development and Reform Commission and Financial Department of Shaanxi Province, with members from relevant authorities such as housing construction, environmental protection, commerce and agriculture, as a coordinator to solve major issues in project construction. The Office the Provincial Steering Committee is located in Shaanxi Provincial Development and Reform Commission, and Shaanxi Provincial Foreign Loan Utilization Project Office (Shaanxi PMO) will perform the duty of the Office of Steering Committee. It is responsible for project planning, guidance, coordination, implementation, supervision, management and reporting, including the management of environmental and social matters.

- **Shaanxi PMO**

1) Be responsible for the constitution of the environmental management framework, and guide and supervise the subproject implementation units to conduct relevant environmental and social management activities of respective subprojects in accordance with the requirements of this framework.
2) Have at least one full-time person to coordinate the implementation of the environmental and social management framework (ESMF) and keep in touch with the World Bank's environmental and social expert during implementation.
3) Ensure that the requirements of the relevant measures in the Environmental and Social Management Plan (ESMP) are included in the Bidding Documents.
4) Screen the environmental and social risk levels of subprojects, review the environmental and social security documents, and submit them to the World Bank for review.
5) Carry out capacity building on environmental management among subproject implementation units.
6) Monitor the implementation of applicable environmental and social security documents (ESCP, SEP, EMP, etc.).
7) Engage external environmental and social monitoring consultants to conduct external monitoring of the environmental and social management of the project, make external monitoring reports on the

environmental and social management performance of the project, and submit to the World Bank every six months.

8) Guarantee the funds for capacity training in subprojects, such as preparation of environmental and social documents, monitoring and evaluation.

- **District and county PLGs**

The county/district governments have set up county/district PLGs [27] (including Linwei District, Chengcheng County, Chencang District and Baoji City) to coordinate the implementation of the county/district subprojects, and set county PMOs under these PLGs. The key responsibilities of the county/district PLGs are to organize and coordinate all functional departments under their jurisdiction to support and participate in the project construction.

- **District/county PMO**

The county / district PMOs thereunder are responsible for subproject planning, guidance, coordination, implementation, management and supervision.

1) Arrange the person in charge of environmental and social management.
2) According to the requirements of the *Environmental and Social Management Framework*, fill in the environmental and social security screening form for the proposed subprojects and submit it to the Shaanxi PMO for review.
3) Carry out environmental and social risk and impact assessment of subprojects as instructed by Shaanxi PMO and the World Bank.
4) Conduct relevant stakeholder consultation activities as required by the Environmental and Social Management Framework (ESMF) and the Stakeholder Engagement Plan (SEP).
5) Ensure that the measures in the subproject's ESMP are included in the Bidding Documents and construction contracts.

[27] The leading group of each district usually consists of the deputy district head in charge of environmental sanitation, development and reform bureau, finance bureau, ecology and environment bureau, housing and urban-rural development bureau, agriculture and rural affairs bureau, and urban administration and law enforcement bureau, township governments, etc.

6) Supervise the implementation of environmental and social management measures.
7) Submit subproject progress reports to Shaanxi PMO on a regular basis.

- **District/County PIUs**

The district/county governments have appointed PIUs in charge of construction of their projects. The district/county PIUs are mainly the environmental sanitation services of Linwei District, Chengcheng County and Chencang District as well as the Urban Management and Law Enforcement Bureau of Baoji City.

Under the leadership of Shaanxi PMO and District /County PMOs, the District /County PIUs will carry out the invitation for bids, procurement, construction, and withdrawal and reimbursement associated with facilities, works and equipment in accordance with the relevant procedures of the People's Bank of China and the World Bank, including the environmental/social impact assessment, implementation, monitoring, evaluation and reporting, as detailed below:

1) Arrange the person in charge of environmental and social management.
2) Carry out environmental and social risk and impact assessment of subprojects on the request of District /County PMOs.
3) Implement environmental and social risk mitigation measures in accordance with the environmental and social impact management documents.
4) Conduct relevant stakeholder consultation activities as required by the SEP.
5) Ensure that the measures in the subproject's ESMP are included in the Bidding Documents and construction contracts.
6) Submit subproject progress reports to District /County PMOs on a regular basis.

- **Environmental and social expert consultant:**

1) Shaanxi PMO will engage competent and experienced environmental and social experts as external technical consultants to offer technical advice to the PMO.
2) Assist Shaanxi PMO in writing environmental and social management documents that meet the requirements of the World Bank and domestic laws and regulations.
3) Assist Shaanxi PMO in implementing the mitigation measures against environmental and social impact risks of the project and managing the implementation.

- **External Environmental and Social Monitoring and Assessment Agency:**

1) As entrusted by Shaanxi PMO, monitor and evaluate the preparation of environmental and social documents for subprojects in accordance with the requirements of the environmental and social management documents approved by the World Bank.
2) Monitor the implementation of environmental and social commitments of the Project in accordance with the requirements of the Environmental and Social Commitment Plan (ESCP).
3) Submit external monitoring reports on environmental management to Shaanxi PMO on a regular basis (every six months).

9.3 Capacity Building of Institutions

The investigation of the social impact assessment team finds that the cooperation between Shaanxi PMO and the World Bank has lasted more than 20 years, giving birth to many environmental governance and urban infrastructure construction projects, all of which have achieved satisfactory results. Shaanxi's experience and institutional capacity in management of World Bank-financed projects is well known in the circle of such projects in China. Shaanxi PMO has a good understanding of, and is experienced in applying, the original environmental and social security policies of the World Bank.

This Project is the first project of Shaanxi Province under the new *Environmental and Social Framework* (ESF) of the World Bank, and it is generally a high-risk project. Although Shaanxi is proficient in the previous security policies of the World Bank, it still needs a process to learn about and get used to the new framework.

In this point, Shaanxi PMO will put more efforts in training on the ESF and ES Standards of the World Bank to enhance the environmental and social risk management capacity of the district/county PMOs and PIUs involved in the Project. To achieve this purpose, the following environmental and social risk management capacity building plan is developed for the projects in Shaanxi. See Table 9-1 for details. Mainly including:

- Strengthen the training for PIUs, and entrust social and resettlement experts with experience in the World Bank-financed projects to give regular trainings to ensure that PIUs fully grasp the requirements of the World Bank and relevant national laws and regulations; learn about the category, purpose and content of social management documents of the project; follow the methods and schedules for implementing relevant measures in the social management plan.
- Establish an internal supervision mechanism from Shaanxi PMO to PIUs, an information feedback mechanism, and a social risk early warning system. The full-time personnel engaged in social management in PMOs and PIUs are required to have strong big-picture thinking and good understanding of policies and be professional and especially experienced in mass work.
- Information disclosure: All project documents related to the environment and society will be disclosed to the masses and the society, and will be subject to the supervision of the masses and social media at all times.
- Establishment of external independent evaluation mechanism: During the implementation of the project, an independent third party with experience in the World Bank-financed projects will be hired to supervise and evaluate the implementation of the social management plan and resettlement plan of the project.

The environmental and social management capacity project will utilize the funds of Shaanxi PMO and the institutional capacity development funds supported by the World Bank loan.

Table 9-1 Phased Schedule for Social Management Capacity Building

Trainee	Main training contents	Objectives	Resources/trainers	Person-time	Method	Duration (days)	Frequency
Shaanxi PMO	① Environmental and social standards and policies of the World Bank ② Environmental and social policy framework, SEP, LMP and Environmental and Social Commitment Plan (ESCP) approved for the Project ③ Social management plan, monitoring and evaluation of the project ④ Implementation and management of SEP and LMP ⑤ Requirements of Shaanxi PMO for social resettlement management	Enhance the social management implementation capacity of Shaanxi PMO.	World Bank experts or employed social and resettlement experts	10	Lectures, workshops and site visits	1	At least once a year during the implementation of the project after the initiation of the project
Subproject implementation units	① Environmental and social standards and policies of the World Bank ② Environmental and social policy framework, SEP, LMP and Environmental and Social Commitment Plan (ESCP) approved for the Project ③ Social management plan, monitoring and evaluation of the project ④ Implementation and management of SEP and LMP ⑤ Implementation, monitoring and evaluation of environmental and social measures of the project	Enhance the social management implementation capacity, social management capacity and occupational health and safety management capacity of subproject units and their social management personnel.	World Bank experts or employed social and resettlement experts	20~30	Lectures, workshops and site visits	1	Prior to the commencement of the project, at least once a year during the implementation of the project

Trainee	Main training contents	Objectives	Resources/trainers	Person-time	Method	Duration (days)	Frequency
	⑥ Requirements of subproject implementation unit for social resettlement management ⑦ Establishment of complaint and grievance redress mechanism (GRM) for resettlement and society and file management						
Contractor and Supervisor	① Environmental, social, and occupational health and safety management measures and requirements related to the project ② Implementation of LMP ③ Implementation of SEP	Learn about the requirements of environmental and social management measures of the project	Experts/PMO staff with experience in World Bank-financed projects, community representatives	20	Lectures, workshops	1	Prior to the commencement of the project, at least once a year during the implementation of the project
Subproject implementation units, contractors, the Supervisor	① Labor management procedure (LMP) and labor policies ② Occupational health and safety of labor ③ Complaint and grievance redress mechanism (GRM) for labor ④ Implementation and communication mechanism for community safety and health management ⑤ Implementation of stakeholder engagement ⑥ Implementation of Environmental and Social Commitment Plan (ESCP) ⑦ Monitoring and evaluation of environmental and social performance implementation	Impose stricter policies and requirements on PIUs, contractors and the Supervisor with respect to labor management, community health and safety management and other social management aspects.	World Bank experts, or social and resettlement experts employed	30~40	Lectures, workshops	1	Prior to the commencement of the project, at least twice a year during the implementation of the project
Relevant streets,	① Relevant environmental protection and social management measures and requirements	Learn about the requirements of environmental	Experts/PMO staff with experience in World Bank-	300~400	Lectures, workshops	1	Prior to the commencement of the project, at

Trainee	Main training contents	Objectives	Resources/trainers	Person-time	Method	Duration (days)	Frequency
communities and villages	② Implementation of SEP ③ Complaint & grievance mechanism	and social management measures of the project, and raise the traffic safety awareness	financed projects, community representatives, and village representatives				least once a year during the implementation of the project

10 Monitoring and Evaluation

10.1 Internal Monitoring

Shaanxi PMO: responsible for ensuring that all relevant measures in the environmental and social documents are included in the Bidding Documents and contracts related to the project activities, and supervising the social performance throughout the implementation of the project. The full-time responsible personnel of the Shaanxi PMO will collect and sort out information related to social management in a timely manner, regularly follow up on the implementation of subprojects, inspect the social performance of subprojects on site, identify problems and propose improvement suggestions. Shaanxi PMO should play a good role in coordination and overall planning, order district/county PMOs and subproject implementation units to assume the responsibilities of owners, conduct social supervision over subprojects, and ensure the effective implementation of relevant social impact mitigation measures at the subproject level.

District/county PMOs and PIUs: responsible for the social performance of their subprojects, including arranging special departments and personnel in charge of social management, supervising the implementation of relevant measures in the social management plan, and regularly submitting social management progress reports to Shaanxi PMO.

Supervisor: As entrusted by PIU, earnestly perform its duties to supervise the Contractor, including in terms of the Contractor's implementation of relevant environmental and social impact mitigation measures, in the course of construction. Find problems in time, put forward rectification requirements, and exercise strict control to ensure that the environmental and social management in subproject construction meets the requirements of the management plan and the contract, and reflect the situation in the monthly supervision report.

10.2 External Monitoring

In addition to the daily project management supervision system of Shaanxi PMO and PIUs, Shaanxi PMO will also hire a third-party independent monitoring agency to conduct monitoring activities in respect of the social action plan during the implementation of the project.

The scope of external social monitoring includes but is not limited to the implementation of the ESCP, the preparation and implementation of social tools, the improvement of issues found in environmental and social audits, land acquisition and resettlement, worker management, community health and safety, stakeholder engagement activities, the operation of GRM and the environmental

and social performance of associated facilities (if involved) and major related facilities.

The external environmental and social monitoring agency will be entrusted by Shaanxi PMO to provide third-party comments and reports after monitoring and assessing the actual implementation of social management measures during the implementation of the project. Its primary duties are to:

a) Review whether the Construction Contractor's labor management procedure (LMP)s, work safety plan, traffic management plan, community and public communication plan and other documents meet the requirements of approved environmental and social documents;

b) Assist Shaanxi PMO and PIUs in conducting training on environmental and social management (including labor management and stakeholder engagement) for the Construction Contractor and the Supervisor;

c) Assist Shaanxi PMO in investigating and handling environmental and social emergencies or incidents;

d) Track and monitor the implementation of social management documents such as social action plans, including consultation and investigation among the affected people;

e) Submit monitoring reports to Shaanxi PMO/PIU on a regular basis.

During the construction and operation of the project, relevant authorities will perform their management and supervision function to conduct regulatory activities.

During the implementation of the project, the World Bank will also conduct special supervision on the environmental and social performance of the project, and provide guidance on ensuring environmental and social compliance.

10.3 Reporting System

The PIU will make the project's social management work report on a regular basis **(semiannually)**, check the implementation progress and effectiveness of the social management plan, environmental and social commitment plan and other related plans (stakeholder engagement plan, etc.), and submit the report to Shaanxi PMO.

Shaanxi PMO is responsible for summarizing the environmental and social performance of the entire project, making an environmental and social management progress report every six months (which can be used as part of the project implementation progress report) and submitting it to the World Bank.

The external environmental and social monitoring agency will submit an external monitoring report to Shaanxi PMO every six months according to the contract. After reviewing these reports, Shaanxi PMO will submit them to the World Bank as annexes to the semiannual progress report of the project.

Annexes

Annex 1 Questionnaire on Public Attitudes towards World Bank-financed China Plastic Waste Reduction Project (Shaanxi)

1. Urban residents

Dear Sir/Madam,

Hello! Shaanxi Province is applying for a World Bank loan to carry out the China Plastic Waste Reduction Project (Shaanxi), covering the whole process from the front-end classification and collection of household waste, including plastic items, to the mid-end transport and back-end treatment. Our survey is mainly to understand the situation of household waste classification in Shaanxi Province, as well as your views and suggestions on this.

Your opinion is very important and will be references for the design and implementation of this project, so we wish to get your understanding and support. Then, the survey may take some of your time, without involving any identifiable personal information of you. Please fill in the questionnaire according to the real situation and ideas; please feel free on this for there's no right or wrong answer, and the survey data will only be used to improve the project design.

Instructions: For choice questions, please tick "√" in the "□";

For multiple-option questions (marked with "multiple options" after each question), please check with "√" for all realistic options;

Please write answers to the blanks on "_____".

Thanks for your kind support and cooperation!

Questionnaire No. :_____ Investigator:_____ Survey time:_____ : _____

Address of respondent:_____District, county _____

Street/Township/Town

_____Community/Village

Name		Gender		Age		Occupation	
Registered population		Permanent population		Education level		Family income	
1. Do you support the implementation of this project? Yes□ No□ Whatever□							
2. Do you support garbage sorting by recyclable and other garbage? Yes□ No□ Whatever □							
3. Do you collect and sell your recyclable waste (e.g. plastic bottles, paper, etc.)? Yes□ No□ 3.1 If you collect and sell, how much will you get per month?							

RMB 1~5 Yuan☐ RMB 5~10 Yuan☐ RMB 10~20 Yuan☐ Above RMB 20 Yuan☐
4. Does your community have a complete garbage-classification disposal facility (for kitchen waste, hazardous waste, recyclables, other waste)? Yes☐ No☐
5. Do you support that garbage-classification collection points to be set in your community? Yes☐ No☐
6. What is the longest distance that you can accept from the garbage-classification collection point in your community to your place? 10m away☐ 10~30m☐ 20~30m☐ _
7. Do you think the current local waste disposal and transfer facilities can meet the needs of the local people? Yes☐ Almost☐ No☐ I don't know☐
8. What do you think are the deficiencies of the current local waste transfer facilities (system)? Insufficient transfer times per week☐ Improper transfer timing☐ Inadequate protective measures during transfer☐ Unreasonable transfer route☐ Others☐_____Please specify
9. Are you willing to participate in related construction and operation activities of this project? Yes☐ Depends☐ No☐
10. What do you think are the potential risks in the implementation of this project? (Multiple options) Requisition impact☐ Ecological and environmental problems☐ Noise, peculiar smell and other pollution☐ High operating costs☐ Impact in travel☐ Others☐_____(Please specify)
11. What is the increase in annual garbage charge that you can accept? Above 10%☐ 5%~10%☐ Below 5%☐ Unchanged☐
12. The disposal capacity of urban waste transfer station is in urgent need of improvement due to the development of the city. If there's a need to rebuild and expanded the garbage transfer station near your community, do you support it? Yes☐ No☐ Whatever ☐
13. If the garbage transfer station near your community is rebuilt, how do you think it may affect you?

Noise☐ Odor☐ Transportation☐ Others☐ (Please specify)
14. In your opinion, the most effective channels for garbage complaints are: Above County/District level ☐ County/District level department ☐ Town government/ Street office☐ Village committee/ Community office☐
15. Your expectations, concerns or suggestions for this project:

2. Rural residents

Dear Sir/Madam,

Hello! Shaanxi Province is applying for a World Bank loan to carry out the China Plastic Waste Reduction Project (Shaanxi), covering the whole process from the front-end classification and collection of household waste, including plastic items, to the mid-end transport and back-end treatment. Our survey is mainly to understand the situation of household waste classification in Shaanxi Province, as well as your views and suggestions on this.

Your opinion is very important and will be references for the design and implementation of this project, so we wish to get your understanding and support. Then, the survey may take some of your time, without involving any identifiable personal information of you. Please fill in the questionnaire according to the real situation and ideas; please feel free on this for there's no right or wrong answer, and the survey data will only be used to improve the project design.

Instructions: For choice questions, please tick "√" in the "☐";

For multiple-option questions (marked with "multiple options" after each question), please check with "√" for all realistic options;

Please write answers to the blanks on "_____".

Thanks for your kind support and cooperation!

Questionnaire No. :_____ Investigator:_____ Survey time:_____ _____

Address of respondent:_____District, county _____

Street/Township/Town

_____Community/Village

Name		Gender		Age		Occupation	
Registered population		Permanent population		Education level		Family income	
16. Do you support the implementation of this project? Yes☐ No☐ Whatever☐							

17. Do you support garbage sorting by recyclable and other garbage? Yes☐ No☐ Whatever ☐
18. Are you satisfied with the current way of dumping garbage? Yes☐ No☐
19. Do you collect and sell your recyclable waste (e.g. plastic bottles, paper, etc.)? Yes☐ No☐ 4.1 If you collect and sell, how much will you get per month? RMB 1~5 Yuan☐ RMB 5~10 Yuan☐ RMB 10~20 Yuan☐ Above RMB 20 Yuan☐
20. Are you willing to provide your land provided that your land should be occupied for construction of garbage transfer station (you will be compensated according to the policy)? Yes☐ No☐
21. How do you think the untreated garbage dump sites have affected your life (multiple choices)?? Water pollution□ Soil pollution☐ Air pollution☐ Cause physical discomfort☐
22. What do you think are the deficiencies of the current local waste transfer facilities (system)? Insufficient transfer times per week☐ Improper transfer timing☐ Inadequate protective measures during transfer☐ Unreasonable transfer route☐ Others☐_____Please specify
23. How far do you want the new garbage collection house (about 20m², with 4~5 garbage cans) to be from the residents' houses? 20m away☐ 30m away☐ 50m away☐ Others☐_____Please specify _
24. What do you think are the current local waste disposal problems that need to be improved? (Maximum of 2) Remove of informal landfill site☐ Household garbage transfer and disposal☐ Household garbage classification☐ Treatment and recycling of waster agricultural film☐ Others☐_____(Please specify)
25. Are you willing to participate in related construction and operation activities of this project? Yes☐ Depends☐ No☐
26. What is the increase in annual garbage charge that you can accept? Above 10%☐ 5%~10%☐ Below 5%☐ Unchanged☐

27. What do you think are the potential risks in the implementation of this project? (Multiple options)

Requisition impact☐ Ecological and environmental problems☐

Noise, peculiar smell and other pollution☐ High operating costs☐

Impact in travel☐ Others☐_____(Please specify)

28. How do your family buy the agricultural film?

Online purchase☐ Purchase through a partner (enterprise or cooperative) ☐

Purchase through stores designated by supply and marketing cooperative☐ Other stores☐

No agricultural film☐

29. How do you dispose of these waste agricultural film if you use the mulching film or reflective film?

Not to pick up or pick up incompletely☐ Pile in the ground/ditch or burn in place☐

Put them in the trash can (bin)☐ Collect and sell them to the salvage station☐

Collect and sell them to the salvage collector ☐

14.1 What's the reason if you cannot pick up the mulching or reflective film from your field? (Multiple options)

Hard to pick up due to poor quality☐ Low recovery value☐

There are no nearby sites for recycling mulching or reflective film☐

Refuse by the salvage collector☐ Other reason (Please specify)

30. What kind of harm do you think the waste agricultural films may have to the local environment and soil if the they are not treated or discarded in the field?

High harmfulness☐ Modest harmfulness☐ Low harmfulness☐ No harmfulness☐

I don't know☐

31. Which form of waste agricultural film recycling do you like to choose to collect them and send to the salvage station in the village?

Monetary subsidies☐ Exchange for agricultural materials☐

Others☐_____(Please specify)

17.1 What is the subsidy standard for recycling waste film that you can accept if you choose the "monetary subsidies"? (per kilogram)

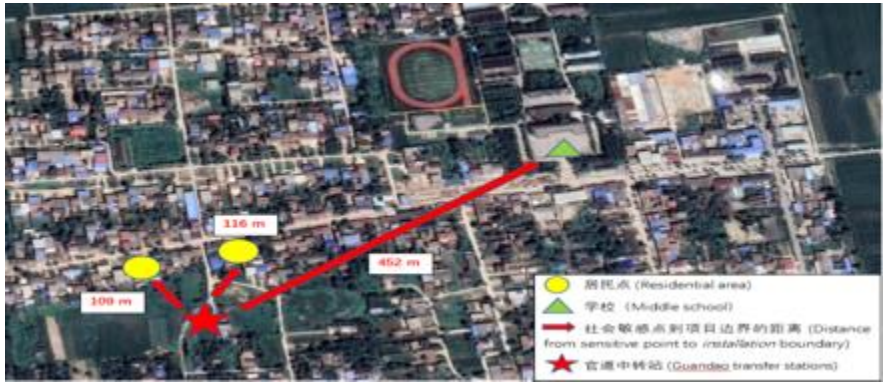
RMB 0.1~0.3 Yuan☐ RMB 0.3~0.5 Yuan☐ RMB 0.5~0.7 Yuan☐ RMB 0.8~1 Yuan☐

17.2 What kind of agricultural materials do you want to exchange most if you choose the "exchange for agricultural materials"?

Pesticide☐ Fertilizer☐ New agricultural film☐ Seeds☐ Others☐_____(Please specify)
32. In your opinion, the most effective channels for garbage complaints are: Above County/District level ☐ County/District level department ☐ Town government/ Street office☐ Village committee/ Community office☐
33. Your expectations, concerns or suggestions for this project:

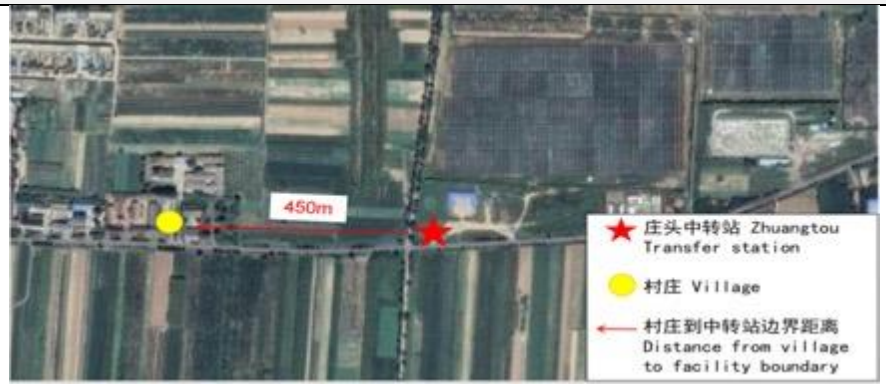
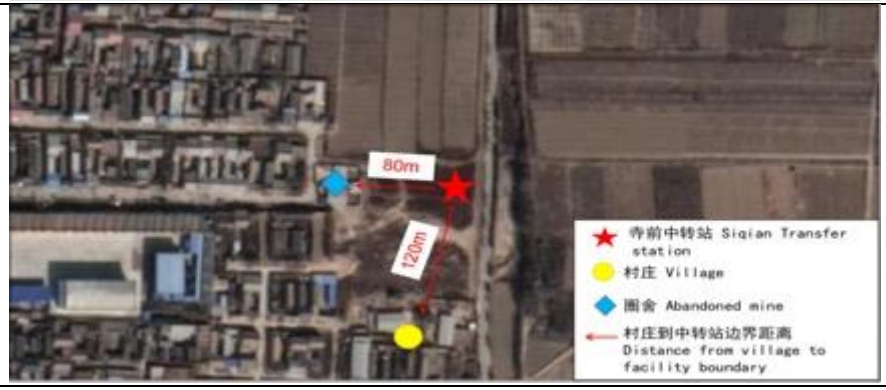
Annex 2 Analysis of Sensitive Points around Some Waste Transfer Facilities

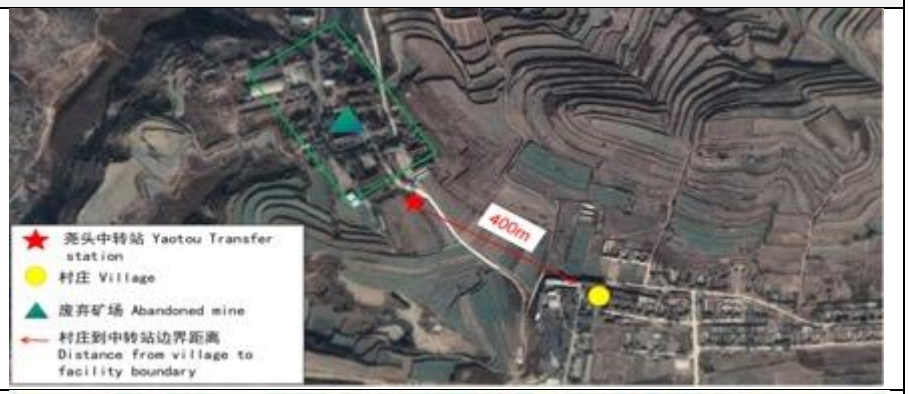
District	WTS		Location Relationship of Surrounding Sensitive Points	Distribution Map of Surrounding Sensitive Points
Linwei	Newly constructed	Jiaoxie Town Transfer Station	There are no sensitive points within a radius of 100m from the project site. The impact from odor and noise and on road traffic safety is small.	
		Transfer station of mass entrepreneurship and innovation base	There are no sensitive points within a radius of 200m from the project site. The impact from odor and noise and on road traffic safety is small.	

District	WTS		Location Relationship of Surrounding Sensitive Points	Distribution Map of Surrounding Sensitive Points
		Chongning Town Transfer Station	There is no residential area, but a few plants, within a radius of 100m from the project site, which has little impact on the communities.	
		Guandao Town Transfer Station	There is no residential area within a radius of 100m from the project site. According to the social audit, a villager had an objection to the initial site, but the final site has avoided the impact to him.	

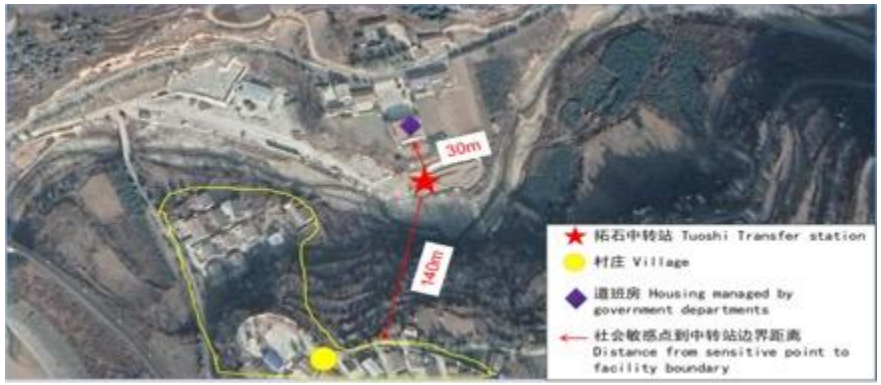
District	WTS		Location Relationship of Surrounding Sensitive Points	Distribution Map of Surrounding Sensitive Points
Chengcheng	Newly constructed	Chengguan Town Waste Transfer Station	There are no sensitive points within a radius of 100m from the project site. The impact from odor and noise and on road traffic safety is small.	
		Wangzhuang Town Waste Transfer Station	There are no sensitive points within a radius of 100m from the project site. The green area is the temporary facility of the construction project of China Railway Group, which is mainly intended for the production of construction materials, having only a little impact on road traffic safety.	

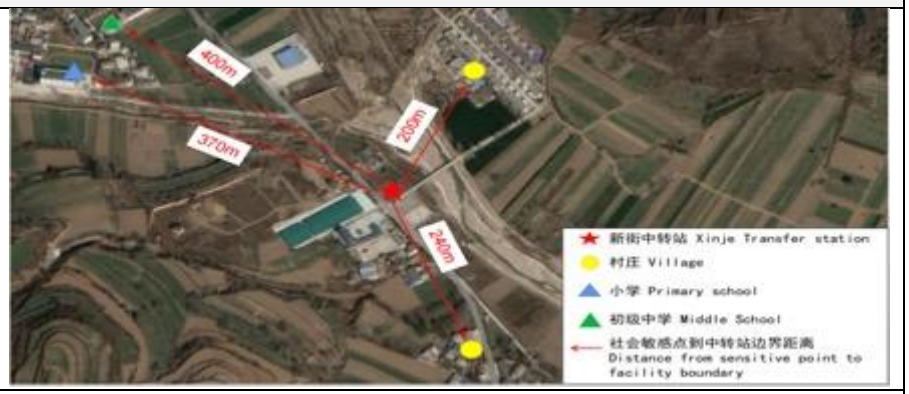
District	WTS		Location Relationship of Surrounding Sensitive Points	Distribution Map of Surrounding Sensitive Points
		Fengyuan Town Waste Transfer Station	There are no sensitive points within a radius of 600m from the project site. The impact from odor and noise and on road traffic safety is small.	
		Weizhuang Town Waste Transfer Station	There is one plant 70m north of the project site and another 50m west of it, and the project has a little impact on the plants. The initial site of the project is adjacent to the villagers' houses at the yellow spot, and has now been changed to avoid the impact on these houses.	

District	WTS		Location Relationship of Surrounding Sensitive Points	Distribution Map of Surrounding Sensitive Points
		Zhuangtou Town Waste Transfer Station	There are no sensitive points within a radius of 400m from the project site. The impact from odor and noise and on road traffic safety is small.	
		Siqian Town Waste Transfer Station	There is one temporary pen on the slope 80m east of the project site, and villagers' houses to the east of the pen, and the residents' houses are 100m away. The impact from odor and noise and on road traffic safety is small.	

District	WTS		Location Relationship of Surrounding Sensitive Points	Distribution Map of Surrounding Sensitive Points
		Yaotou Town Waste Transfer Station	There are no sensitive points within a radius of 400m from the project site. The impact from odor and noise and on road traffic safety is small.	
		Jiaodao Town Waste Transfer Station	There is a plant 50m south of the project site and one residential area 100m away. The impact from odor and noise and on road traffic safety is small.	

District	WTS		Location Relationship of Surrounding Sensitive Points	Distribution Map of Surrounding Sensitive Points
Chencang	Newly constructed	Xiangquan Transfer Station	There are no sensitive points within a radius of 150m from the project site. The impact from odor and noise and on road traffic safety is small.	
		Transfer Station in Xiqin Village, Dongguan	There are no sensitive points within a radius of 200m from the project site. The impact from odor and noise and on road traffic safety is small.	

District	WTS		Location Relationship of Surrounding Sensitive Points	Distribution Map of Surrounding Sensitive Points
		Qianwei Transfer Station	There are no sensitive points within a radius of 100m from the project site. The impact from odor and noise and on road traffic safety is small.	
		Tuoshi Transfer Station	There is a residential area of Mengjiayuan Village 140m south of the project site, at the toe of slope and a maintenance gang house 30m north of the project site, which is the management house of the water conservancy service. The impact is small.	

District	WTS		Location Relationship of Surrounding Sensitive Points	Distribution Map of Surrounding Sensitive Points
		Transfer Station in Xinjie Village	There are no sensitive points within a radius of 100m from the project site. There is one plant to the south of the project site, and the project has a little impact on it.	
		Waste transfer truck and truck maintenance center	There is one village 410m (straight-line distance) southeast of the project site. The project site is adjacent to Baoji shooting range to the east, and there is a park to the west of the project site. The project has a little impact on community residents, and the main risk is the impact of waste transfer trucks on the traffic safety of residents.	

Annex 3 Land Pre-examination Opinions

1.Linwei

渭南市临渭区自然资源局

渭南市临渭区自然资源局
关于世行贷款陕西城乡塑料垃圾减量项目
临渭区子项目选址用地的情况说明

省外贷办：

根据世行贷款陕西城乡塑料垃圾减量项目临渭区子项目建设要求，计划在临渭区乡镇建设垃圾中转站5座，目前5座垃圾中转站选址已基本确定，其中线王、南师、官道、双创4座选址属于国有土地，土地权属单位已出具函件，同意由临渭区环卫中心建设中转站，另交斜1座选址正在办理相关手续。经我局研究，原则同意该5座垃圾中转站选址，待项目批准后，应按照国家规定办理用地等相关手续。

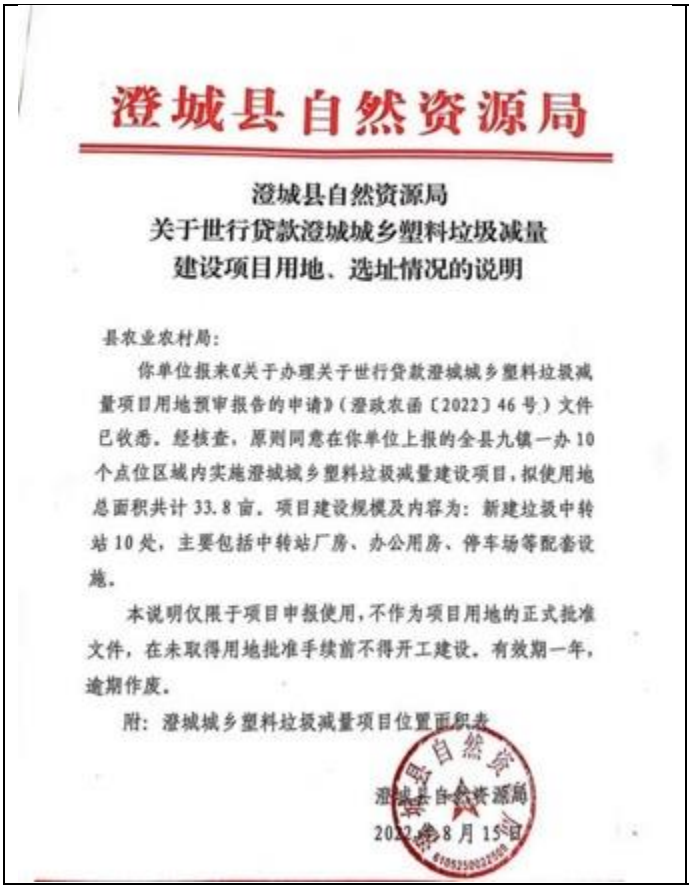
特此说明

渭南市临渭区自然资源局

2022年8月[illegible]日

	Note on Land Use for the Linwei District Subproject The sites of 5 WTSs in Linwei District have been largely fixed, in which the Xianwang, Nanshi, Guandao and Shuangchuang WTSs are located on state-owned land, and the land owners have issued letters, approving the Linwei District ESC to construct the WTSs. Site selection for the other WTS (Xiejiao) is being handled. We approve the sites of the above 5 WTSs in principle, and will handle the statutory land use procedure after the Project is approved.

2. Chengcheng County



澄城县自然资源局

澄城县自然资源局
关于世行贷款澄城城乡塑料垃圾减量
建设项目用地、选址情况的说明

县农业农村局：

你单位报来《关于办理关于世行贷款澄城城乡塑料垃圾减量项目用地预审报告的申请》（澄政农函〔2022〕46号）文件已收悉。经核查，原则同意在你单位上报的全县九镇一办10个点位区域内实施澄城城乡塑料垃圾减量建设项目，拟使用地总面积共计33.8亩。项目建设规模及内容为：新建垃圾中转站10处，主要包括中转站厂房、办公用房、停车场等配套设施。

本说明仅限于项目申报使用，不作为项目用地的正式批准文件，在未取得用地批准手续前不得开工建设。有效期一年，逾期作废。

附：澄城城乡塑料垃圾减量项目位置面积表

澄城县自然资源局

2022年8月15日

Chengcheng County Natural Resources Bureau

Note on Land Use and Site Selection for the Chengcheng County Subproject

Through review, you are approved to implement the subproject within 9 towns and one sub-district of your county. This note is for project application only, and construction shall not begin without land approval. This note is effective for one year.

3. Chencang District

宝鸡市自然资源和规划局陈仓分局函

宝市自然资陈函〔2022〕62号

关于世行贷款陈仓城乡塑料垃圾减量项目建设项目用地的预审意见

区城市管理执法局：

你局报来《关于申请办理世行贷款陈仓城乡塑料垃圾减量项目用地预审的报告》（宝陈城管字〔2022〕28号）文件收悉。根据《建设项目用地预审管理办法》（国土资源部令第68号）和《陕西省建设项目用地预审管理实施意见》规定，经审查，现就该建设项目用地预审提出如下意见：

一、该项目建设地点涉及陈仓区三个街道和11个镇157个村，建设内容为：陈仓区城乡生活垃圾分类治理宣教信息中心1栋，生活垃圾压缩站建设工程5座，生活垃圾转运站建设工程33座，陈仓区园林绿化垃圾处理站改扩建工程，环卫停车场建设项目。你局应按照国家现行供地政策从严控制，建设面积不得突破69.65亩，项目用地范围不得擅自变动，亦不得私自改变拟用地块土地用途。

二、根据土地管理法律法规有关规定，你局应落实耕地占补平衡责任，按照"占优补优"的原则，认真做好补充耕地工作。

三、你局应依法办理建设项目用地报批等相关手续，在未取得合法用地手续前不得使用土地。

四、该项目建设用地预审意见自下发之日起有效期为三年。

宝鸡市自然资源和规划局陈仓分局

2022年8月2日

Chencang District Branch of the Baoji Municipal Natural Resources Bureau Pre-Examination Opinion on Land Used for the Chencang District Subproject

Through review, we hereby give the following opinion on land use pre-examination: Subject to strict control according to the prevailing state land supply policy, the construction area should not exceed the applied for area, and the land use

range and land use should not be changed without authorization. The land approval procedure should be handled according to law, and construction should not begin without land approval. This opinion will be effective for 3 years.

Annex 4 Public Consultation Record

Form 1 Public Consultations Conducted and Key Findings

Time	Venue	Stakeholder	Participants	Methods	Key points	Findings
Linwei District						
March 9	Fengyuan Town Government	Deputy town head, officials	12	FGD	Learning waste collection, transfer and disposal in Fengyuan Town, and discussing the scope of construction	• Since 2019, a third party service provider has been engaged for cleaning. • There are waste pickers in the landfill. • Local mulch film consumption is high, and mulch film is disposed of by piling and burning.
March 11	Xiangyang Sub-district	Head of private waste recovery station	6	Field visit	Learning local recyclable waste	• Small recovery stations recover waste from streets, and sell it to large ones. A small recovery station earns 800-900 yuan per trip, and recovers 2t of plastic waste per annum.
April 26	Linwei District Labor and Social Security Bureau	Section chief, community officials	7	FGD	Learning workers' rights protection, employment and GRM	• The labor and social security bureau is responsible for labor and social security management, coordination and supervision. It has a 24-hour complaint hotline (913-3030371). • The Project will generate more jobs, and improve the rural environment.
April 26	Linwei District Women's Federation	Director, officials	4	FGD	Learning women's federation's functions, women's rights, GBV risks, proportion of female officials, etc.	• The women's federation's mission is to protect the lawful rights and interests of women and children. Its rights protection hotline is 12338. • The Project will generate more jobs, and reduce land pollution, and is strongly supported.
April 26	Linwei District Civil Affairs Bureau	Deputy director, officials	4	FGD	Learning the identification criteria and supporting policies for vulnerable groups	• The urban MLS standard is 620 yuan per month per capita, and the rural MLS standard is 4,836 yuan per annum per capita.

Time	Venue	Stakeholder	Participants	Methods	Key points	Findings
						• Linwei District has 621 urban MLS households with 962 persons, including 416 females, and 8,616 rural MLS households with 17,718 persons, including 8,422 females. • The interviewees think the Project will generate more public welfare jobs and bring more income, and expect it to be implemented as soon as possible.
April 26	Linwei District Ethnic and Religious Affairs Bureau	Deputy director, officials	4	FGD	Learning the current situation of ethnic minorities	• In 2020, the district had a resident ethnic minority population of 3,368, mostly Hui. • Minority residents are mostly located in Jiefang, Renmin and Zhannan Sub-districts, and Gushi and Yangguo Towns.
April 27	Linwei District Health Commission	Head, officials	6	FGD	Learning the health commission's responsibilities and requirements for the Project	• The health commission is responsible for allocating the district's health resources and offering public health services.
April 27	Weinan Municipal Housing Construction Bureau	Section chief, staff	5	FGD	Learning the requirements and policies for sanitation facilities	• The Project is a good supplement to the prevailing municipal waste management plan.
April 27	Linwei District Federation of Trade Unions	Director, staff	7	FGD	Learning the federation's responsibilities, procedure for worker rights protection, etc.	• Workers may file complaints to trade unions or via hotlines. The worker service center also offers legal assistance and job referral services.
May 6	Weilan Road WTS	Master, security guards, cleaners, operators	8	Field visit	Learning the WTS's operation and workers' remuneration	• The WTS has a floor area of 5 mu, a master, a security guard, two cleaners and one operator, aged 54-60 years. The operators work 9 hours a day. The salaries of the security guard and

Time	Venue	Stakeholder	Participants	Methods	Key points	Findings
						cleaners are lower than the local minimum salary standard. • The land for the WTS is leased.
May 8	Majiagou Landfill	Workers, villagers	7	Field visit, FGD	Learning the current situation of waste collection, and suggestions on waste sorting	• The Majiagou Landfill will be closed down after the WTE plant is put into operation in March 2023. • The interviewees have no objection to land lease.
May 7	Linwei District Ecology and Environment Bureau	Director, officials	5	Key informant interview	Learning the environmental regulatory requirements for landfills and WTE plants	• The leachate treatment plant should conduct environmental monitoring (air, water and soil).
May 8	Linwei District Political and Legislative Affairs Committee	Officials	2	Key informant interview	Learning SSRA matters	• Construction projects should be subject to an SSRA. The general procedure is project initiation, land pre-examination, SSRA, EIA and approval.
May 8, July 31	Linwei District Used Material Recovery Company	General manager, sorters, operators	4	FGD, key informant interview	Learning the company's operation, and workers' remuneration and security	• There are 11 regular workers, responsible for administration. There are 11 temporary workers, including 2 drivers, 2 operators and 7 sorters. • They have no labor contract. The temporary workers are not entitled to insurance and rest.
Chengcheng County						
March 11	Weizhuang Town Sanitation Station	Master, sanitation workers	7	Field visit	Learning the station's operation, and sanitation workers' remuneration	• Sanitation workers are paid 800-1,000 yuan per month, and provided with PPE (clothes, gloves and protective shoes).
March 12	Zhaozhuang Town Government	Town head, officials, village head	13	FGD	Learning the town profile and waste transfer	• The town has 24 villages, with 1-3 unofficial waste dumps each, with pollution risks. • The Project is supported. It is advised to build two WTSs in the town.

Time	Venue	Stakeholder	Participants	Methods	Key points	Findings
April 6-8	Survey on preliminary sites of 18 WTSs in 9 townships	ESC, town and village officials, villagers	55	Interview, field visit	Learning preliminary site selection, and collecting comments	• 6 sites are close to a church, a kindergarten, schools and houses, and should be relocated. All of them have been relocated. • The WTS in Weizhuang Town is close to a household, and should be relocated. • All interviewees support the Project, and suggest that some jobs be offered to them.
June 23	Church, health center and schools in Zhaozhuang Town	Relevant people, teachers and students	8	Interview	Introducing the Project, and collecting comments and suggestions	• Waste is transferred to an unofficial waste dump twice a day. Transfer trucks drive slowly, and have almost no noise. • The kindergarten's teachers think that the WTS has little impact on the kindergarten, and parents expect transfer trucks not to run through the kindergarten. • All interviewees support WTS construction.
Baoji City						
June 16	Changshougou WWTP	Workers	2	Field visit, interview	Learning workers' working conditions	• There are 12 workers, managed by the SWMC. • The WWTP operates around the clock in 3 shifts. The salary is 3,000 yuan per month, and the workers are entitled to overtime salaries, and endowment, medical and accident insurance. A health checkup is offered every two years. • The workers file complaints to the manager directly, and are satisfied with the working environment.
June 16	Changshougou Landfill	Head, workers	2	Field visit, interview		• There are 8 regular workers and 20 temporary workers, including two

Time	Venue	Stakeholder	Participants	Methods	Key points	Findings
						females. All of them have signed a labor contract, and work on two shifts. A health checkup is offered every two years. • Workers may escalate complaints.
July 21	Baoji City Project Quality Supervision Station	Staff	3	Field visit, interview	Learning safety supervision during implementation	• Safety management is based on the national or local standard. • Safety pre-assessment is conducted by a third party. • Safety protection measures are taken for highly dangerous projects and included in project budgets.
July 21	Xingbinzhuo Auto Service Co., Ltd.	Xingbinzhuo Auto Service Co., Ltd.	1	Field visit, interview	Learning impacts of trucks on nearby stores	• The access road is being repaired. • Traffic accidents are likely to occur. • Traffic safety education for drivers should be strengthened, and warning signs set up.
Chencang District						
June 8	Chencang District Urban Administration and Law Enforcement Bureau	Director, PMO general engineer, planning section chief	3	Field visit, interview	Learning site selection	• Chencang District has 11 townships, and plans to build 26 WTSs and 5 compression stations, and reconstruct two WTSs. The WTSs will be managed by the urban administration bureau. • The Baoji City WTE Plant will be put into operation in 2023. Currently, urban waste is transferred to the Changshougou Landfill.
June 8	Chencang District Natural Resources Bureau	Deputy director, planning section chief	3	Field visit, interview	Learning the construction land policy for township sanitation facilities	• The natural resources bureau strongly supports the Project. • The land use complies with the applicable policy, and the site may be adjusted if necessary.

Time	Venue	Stakeholder	Participants	Methods	Key points	Findings
June 8	District ecology and environment bureau	Head	3	Field visit, interview	Learning the management of unofficial landfills and mulch film	• The environmental law enforcement brigade supervises wastewater discharge, industrial pollution and urban environmental pollution mainly.
June 8	Chencang District Agro-technical Promotion Center	Head	3	Interview	Learning the use and collection of mulch film	• 58,700 mu of land in the district uses mulch film. 278t of mulch film was recovered last year, less than 1/3 of annual consumption.
June 8	Chenguan Sub-district Office	Deputy head, officials	4	Field visit, interview	Learning WTS site selection and land use, and the management of cleaners	• The land use for the WTS is conforming. • Cleaners work on public welfare jobs, and are paid 300 yuan per month. Cleaners can hardly be recruited due to low income and hard work. • Villagers may file complaints to competent authorities or via the government complaint hotline (12345).
June 8	Yangping Town Government	Deputy town head, etc.	3	Field visit, interview	Learning local waste collection and transfer, and mulch film disposal, and discussing the scope of construction	• The town has 15 villages, with 6 cleaners each, aged about 60 years. Each cleaner is paid 1,000 yuan per month, including a public welfare subsidy of 400 yuan, and the balance is paid by the village. • 6,000 mu of land uses mulch film, accounting for 1/3 of all land. Mulch film is transferred to the landfill.
June 10	Muyi Town Government	Officials, staff	4	Field visit, FGD	Learning township cleaner management and mulch film collection	• There are 6 cleaners in the town, paid 1,600 yuan per month and working 8 hours a day. • All cleaners are insured, and PPE is distributed regularly. • 8,700 mu of land uses mulch film, accounting for 1/3, and used mulch film

Time	Venue	Stakeholder	Participants	Methods	Key points	Findings
						is collected by farmers and delivered to the landfill.
June 10	Zhouyuan Town Government	Deputy town head, staff	3	Field visit, FGD	Learning local waste collection and transfer	• The town has 15 villages, with 4-6 cleaners each. • Waste is transferred to the Changshougou Landfill.
June 15	Wangouhao waste collection site	Sanitation workers	3	Field visit, interview	Learning working conditions	• This site has 3 workers, who work 12 hours a day. • They are paid 2,000 yuan per month, and have signed a labor contract.
June 15	Guangfu, Longxin and Lingyi Villages, Jiacun Town	Village head, villagers	8	Field visit, FGD	Learning village cleaning and cleaner management	• Guangfu and Longxin Village has 15 cleaners, paid 100 yuan and 400 yuan per month each. • Cleaners can hardly be recruited due to low income and labor outflow. • In Lingyi Village, waste is dumped in a waste pond 20m away from the village, affecting the environment greatly.
July 19	Chencang District Health Commission	Section chief, staff	4	Field visit, interview	Learning OHS policies	• The WWTP has 12 workers, working on 3 shifts around the clock. They are managed by the SWMC. A health checkup is offered every two years. They are satisfied with the working environment. • Maintenance workers are paid 3,000 yuan, and entitled to endowment, medical and accident insurance.
July 19	Streets in Chencang District	cleaners	4	Field visit, interview	Learning cleaners' working conditions	• All cleaners have signed a labor contract, and work 7 hours a day. There are two days off per month. The monthly salary is 1,800-2,000 yuan. They are entitled to endowment, medical and accident insurance.

Time	Venue	Stakeholder	Participants	Methods	Key points	Findings
						• The electricity subsidy for transfer vehicles is 25 yuan per month, and insufficient to cover actual expenses. • Cleaners expect drinking water to be available, a separate changing room to be provided to women, and the electricity subsidy to be increased. • Workers may file complaints to the supervisor.
July 20	Xiangong Town	Town officials	3	Field visit, interview	Learning local waste collection and transfer, cleaners, and mulch film use and disposal	• The 8 transfer workers are managed by a third party, and 8 cleaners managed by the township government, including two on public welfare jobs. They are paid 1,000 yuan per month, work 8 hours a day, and are entitled to overtime salaries and accident insurance. • Waste is not collected timely due to difficult recruitment.
July 20	Yaojiaya Village, Xiangong Town	Village officials, villagers, women reps.	5	Field visit, interview	Learning local waste collection and transfer, and cleaner recruitment	• The village has 12 cleaners (public welfare jobs) and one transfer worker, all having signed a labor contract, paid 400-800 yuan per month, without accident insurance. • Waste is transferred to the landfill. A small transfer vehicle is provided but uninsured.
July 20	Xiangquan Town	Officials	3	Field visit, interview	Learning local waste collection and transfer, cleaners, and requirements or policies for sanitation facilities	• The town has 41 cleaners, paid 1,300 yuan per month. They are entitled to accident insurance, and work on rotation. • Villagers may file complaints to competent authorities or via the government complaint hotline (12345).

Time	Venue	Stakeholder	Participants	Methods	Key points	Findings
July 20	Pingtou Town	Deputy town head, staff	3	Field visit, interview	Learning local waste collection and transfer, suggestions on waste sorting, and attitudes to the Project	• There are 7 cleaners and 3 transfer workers in the town, all having signed a labor contract, and paid 800 yuan per month. They work 6-7 hours a day, and are entitled to accident insurance. • Villagers' waste sorting awareness is low, and supervision is required.
• **Comprehensive**						
July 22	Online Tencent meeting	Design agency, EIA agency	9	Seminar	Learning state laws and regulations on labor management, OHS, etc. for waste facilities, E&S risks of landfill closure, and WTE plant construction and operation, domestic management procedures, etc.	• There are many national standards on the construction and operation of landfills and WTE plants, including OHS. WTE plants are usually run by third parties normatively, but the operation management of landfills (especially at the county and township levels) should be further strengthened. • Landfills generate groundwater pollution, which is monitored regularly during operation, including self-monitoring and monitoring by environmental authorities. • The main risks of landfill closure include gas poisoning and explosion. Relevant measures are taken to reduce landfill gas levels. • O&M after closure includes landfill gas and leachate treatment and utilization, and equipment maintenance. This will be monitored. • After landfill closure, landscaping may be conducted. • The Changshougou Landfill has a slope instability risk, and will be subject to reinforcement and backfilling. It is

Time	Venue	Stakeholder	Participants	Methods	Key points	Findings
						largely controllable. There is no resident nearby.

Source: Environmental and social impact surveys of Batch 1 subprojects, interviews and consultations with relevant authorities.

Form 2 FGDs with Relevant Communities/Villages

Time	Venue	Stakeholder	Participants	Methods	Key points	Findings
Linwei District						
March 9-10	Beilei, Fengyuan and Xike Villages	Villagers, officials	15	Field visit, FGD	Learning the village profile, and collecting comments and suggestions	• The unofficial landfill in Xike Village has a spontaneous combustion risk. • Transfer trucks occasionally have spillage, producing strong odor and affecting the local environment. Villagers suggest improving such trucks or adjusting their route.
March 11	Xiangyang Sub-district	Head of private waste recovery station	6	Field visit	Learning local recyclable waste	• Small recovery stations recover waste from streets, and sell it to large ones. A small recovery station earns 800-900 yuan per trip, and recovers 2t of plastic waste per annum.
May 8	Xinzhai Village, Jiaoxie Town	Village officials and villagers	3	Field visit, interview	Conducting a land use survey on WTSs	• Two households are affected, and the acquired land is cultivated land. • The AHs are willing to offer land as long as compensation is paid according to the policy.
June 1-2	Nearby communities	Head, officials, property management staff, cleaners, residents	20	FGD, interview	Learning waste collection transfer, and collecting comments and suggestions	• Cleaner salaries vary from community to community. • All interviewees support the Project, and think that sorting pavilions should be set up on roadsides, and WTSs should have deodorization equipment.

Time	Venue	Stakeholder	Participants	Methods	Key points	Findings
June 23-24	Nearby communities, Weilan Road WTS, Chelei WTS	Workers, property management staff, residents	13	FGD, interview	Learning workers' remuneration and working conditions, and collecting comments and suggestions	• The WTS runs an 8-hour working system. Workers are entitled to PPE, high temperature allowance, annual health checkup, and endowment, medical and accident insurance. Their average salary is 1,900 yuan per month. • All interviewees support WTS reconstruction, and expect that measures be taken to reduce odor and noise.
Chengcheng County						
March 12	Tiezhuang, Nansulao and Weizhuang Villages	Villagers, officials	20	Field visit, FGD	Learning the village profile, and collecting suggestions	• The waste collection fee is 30 yuan per annum per capita. • Waste is transferred to the WTE plant, and recyclable waste is sold.
March 12-13	Bajiagou, Wu'an and Dangjiazhuang Villages	Village officials, villagers, cleaners	23	FGD, interview	Learning waste transfer, and collecting suggestions	• Cleaners do cleaning once or twice a day, and work 3-4 hours a day, with a monthly subsidy of 500 yuan. • Mulch film is burned for heating or stored on farmland.
June 23-24	Villages and communities involved in 10 WTSs	ESC and village officials, villagers	30	Field visit, FGD	Collecting comments on site selection	• The Weizhuang Village WTS has been relocated (formerly close to a household), 200m away. • All interviewees support the Project.
Baoji City						
June 17	Xiao'an Village, Panxi Town	Villagers around the Hongligou Landfill	3	Field visit, interview	Learning impacts of the landfill on nearby villagers, and their attitudes to the Project	• The landfill is 150m away from Xiao'an Village and 500m away from Zhangjialing Village. • The landfill caused serious groundwater pollution and affects villagers' lives, and was closed down in 2013. • Villagers may file complaints to competent authorities, via the

Time	Venue	Stakeholder	Participants	Methods	Key points	Findings
						government complaint hotline (12345) or mass media. Their complaints are usually handled in a reasonable time.
July 21	Baoling Village, Jintai District	Village officials, head of women's federation, cleaners	5	Field visit, interview	Learning impacts of the landfill on nearby villagers, and their attitudes to the Project	• There is strong odor in summer, affecting downwind villagers. • Free fly killing articles distributed by the government have little effect. • Villagers expect the landfill to be closed down as soon as possible, and expect that more frequent disinfection be conducted in summer to improve the surrounding environment.
July 21	Nearby community	Community residents	2	Field visit, interview	Learning impacts of trucks on nearby residents	• There are few households near the access road, and there is strong odor in summer. • Few trucks have spills, but this is handled by cleaners timely. • There are traffic safety risks on rainy days.
Chencang District						
June 8	Nanyang, Xiqin and Taigongmiao Villages	Village head, cleaners, villagers	14	Field visit, FGD	Learning local waste collection and transfer, cleaners, mulch film use and disposal, and villagers' attitudes to the Project	• Cleaners work 4 hours a day, and are paid 1,300-1,500 yuan per month. They are entitled to PPE, accident insurance and cooling articles. • Mulch film is stored in farmland for recovery. • Villagers support the Project, and expect it to be implemented as soon as possible.
June 9	Sanlian, Xiqin and Yaodi Villages	Village head, villagers	12	Field visit, FGD	Learning local waste collection and transfer management, and discussing the scope of construction	• Cleaners are paid 800 yuan per month and work 3-4 hours a day. Some of them have accident insurance.

Time	Venue	Stakeholder	Participants	Methods	Key points	Findings
						• 150 mu of land uses mulch film, and used mulch film is stored on farmland and transferred to the landfill.
June 10	Liming, Muyi and Qixi Villages	Village head, cleaners, villagers	11	Field visit, FGD	Learning village cleaning and cleaner management	• There are 21 cleaners (1/3 being females), aged about 60 years, working 4-5 hours a day. They are on public welfare jobs, and paid 700 yuan per month (including a public welfare subsidy of 400 yuan per month). All of them are insured.
June 10	Dongwang, Wenguang and Youli Villages	Village head, cleaners, villagers	13	Field visit, FGD	Learning village cleaning and cleaner management	• There are 18 cleaners, all on public welfare jobs, paid 400 yuan per month, working 2-3 hours a day. • Cleaners are not insured.
June 15	Guangfu, Longxin and Lingyi Villages, Jiacun Town	Village head, villagers	8	Field visit, FGD	Learning village cleaning and cleaner management	• Guangfu and Longxin Village has 15 cleaners, paid 100 yuan and 400 yuan per month each. • Cleaners can hardly be recruited due to low income and labor outflow. • In Lingyi Village, waste is dumped in a waste pond 20m away from the village, affecting the environment greatly.
July 20	Xiangong Town	Town officials	3	Field visit, interview	Learning local waste collection and transfer, cleaners, and mulch film use and disposal	• The 8 transfer workers are managed by a third party, and 8 cleaners managed by the township government, including two on public welfare jobs. They are paid 1,000 yuan per month, work 8 hours a day, and are entitled to overtime salaries and accident insurance. • Waste is not collected timely due to difficult recruitment.
July 20	Xinjie Village, Xinjie Town	Officials	2	Field visit, interview	Learning local waste collection and transfer,	• The town has 8 cleaners, including 3 females on public welfare jobs, paid 800

Time	Venue	Stakeholder	Participants	Methods	Key points	Findings
					cleaners, and mulch film use and disposal	yuan per month, all having signed a labor contract. Managers are paid 1,500 yuan per month. • The land used for the WTS is collective land, and villagers are willing to offer such land.
July 20	Yaojiaya Village, Xiangong Town	Village officials, villagers, women reps.	5	Field visit, interview	Learning local waste collection and transfer, and cleaner recruitment	• The village has 12 cleaners (public welfare jobs) and one transfer worker, all having signed a labor contract, paid 400-800 yuan per month, without accident insurance. • Waste is transferred to the landfill. A small transfer vehicle is provided but uninsured.
July 20	Wangjiazhuang Village, Xiangquan Town	Village head, cleaners, officials, women reps.	5	Field visit, FGD	Learning local waste collection and transfer, and women's rights protection	• There are 7 cleaners (public welfare jobs) and one transfer work. They are paid 400-1,500 yuan per month, and have signed a labor contract. They are not insured. • This village is located in a hilly area, and the electric vehicle does not have enough power for driving. Cleaners can hardly be recruited due to low income.
July 20	Shiyao Village, Xiangquan Town	Village officials, women reps.	4	Field visit, FGD	Learning local waste collection and transfer, and attitudes to the Project	• There are 4 cleaners, who have signed a labor contract but are not insured, work 5-6 hours a day, and are paid 1,300 yuan month. They are mostly about 50 years old. PPE is provided. • Villagers support the Project.

Source: Environmental and social impact surveys of Batch 1 subprojects, interviews and consultations with relevant authorities.

Annex 5 Stakeholder Engagement Record

Linwei District	
	
Interviewing the Linwei District Federation of Supply and Marketing Cooperatives to learn Federation of Supply and Marketing Cooperatives to learn basic information, relevant land documents, comments and suggestions	Interviewing the head and workers of Linwei District Used Material Recovery Company to learn basic information, working conditions, sorting process, comments and suggestions
	
Visiting Linwei District Health Commission to learn OHS requirements and policies	Interviewing the head of the Linwei District ESC Resident Service Center to learn the personnel policies, recruitment process, contract management, GRM, etc.
	
Interviewing the Linwei District Emergency Management Bureau to learn work safety and OHS policies, and implementation	Interviewing the Linwei District ESC to learn cleaners' daily work and remuneration
	
Interviewing the head and workers of an urban WTS in Linwei District to learn basic information, working conditions, comments and suggestions, etc.	Visiting Guandao Village, Guandao Town, Linwei District to learn the current situation of waste collection, transfer and disposal, and attitudes to and comments on WTS construction

Chengcheng County	
	
Interviewing the Chengcheng County Agriculture and Rural Affairs Bureau to learn its responsibilities, rural waste management and mulch film collection	Interviewing the Chengcheng County Federation of Supply and Marketing Cooperatives to learn how mulch film marketing and recycling enterprises are managed
	
Interviewing the Chengcheng County Market Regulation Bureau to learn the regulation of mulch film quality	Interviewing the Chengcheng County Emergency Management Bureau to learn work safety and OHS policies, and implementation
	
Interviewing a driver of the Chengcheng County ESC to learn drivers' daily work, remuneration, comments and suggestions	Interviewing a worker of an urban sanitation facility in Chengcheng County to learn workers' daily work, remuneration, comments and suggestions
	
Visiting the Yaotou Landfill in Chengcheng County to learn its management policies, working processes, working conditions, etc.	Visiting Zhongshe Village, Jiaodao Town, Chengcheng County to learn the current situation of waste collection, land used for the WTS, and comments and suggestions

Baoji City	
	
Interviewing the Baoji Municipal Construction Project Quality and Safety Supervision Station to learn safety regulation requirements and measures	Interviewing village officials, villagers and cleaners in Baoling Village, Jintai District, Baoji City to learn the current situation of environmental sanitation, the landfill's impacts on villagers, and attitudes to and suggestions on the Project
	
Interviewing the head of the car service company beside the access road of the Changshougou Landfill in Baoji City to learn the driving safety of trucks and impacts on nearby residents (stores)	Interviewing residents beside the access road of the Changshougou Landfill in Baoji City to learn trucks' impacts and traffic safety
	
Interviewing staff members of the Baoji Municipal Urban Administration and Law Enforcement Bureau, and SWMC to learn the scope of landfill closure and its impacts, and the progress of the WTE plant under construction	Interviewing the head and workers of the leachate treatment plant of the Changshougou Landfill to learn the treatment process, working conditions, worker management policies, etc.

Chencang District	
	
Visiting the Chencang District Health Commission to learn its OHS responsibilities, project implementation, and OHS policies for employers	Visiting the Planning Section of the Chencang District Natural Resources Bureau to learn the policy on sanitation facility land, and comments and suggestions on land use
	
Interviewing the head of the Energy and Environment Station of the Chencang District Agro-technical Extension Center to learn the use, management and collection of mulch film	Interviewing the Chencang District Urban Administration and Law Enforcement Bureau to learn the current situation of the urban sanitation system, working conditions and remuneration, comments and suggestions, etc.
	
FGD with officials, villagers and women in Yaojiaya Village, Xiangong Town, Chencang District to learn the current situation of waste collection and transfer, cleaner employment and management, suggestions on waste collection and transfer, women's rights, GRM, etc.	Interviewing officials of the Dongguan Sub-district Office in Chencang District to learn local environmental sanitation, cleaner employment and management, land use policies and measures, and attitudes to the Project

General	
	
Discussion of project design details by the Shaanxi PMO, Linwei District PMO, SIA agency, FS agency and EIA agency	Discussion of subproject design and E&S issues by the SIA agency, FS agency and EIA agency
	
Joint survey on rural domestic waste management by the SIA agency, FS agency and EIA agency	Field visit by the Shaanxi PMO, Chengcheng County PMO, SIA agency, FS agency and EIA agency

Annex 6 List of References for Social Impact Assessment

1. Linwei District

- Feasibility Study Report of the Linwei District Subproject;
- Block Comprehensive Land Prices for Farmland and Unused Land of Linwei District;
- Environmental Sanitation Quality Standards and SOPs of Linwei District;
- Sample labor contract of Linwei District ESC;
- WTS management policies of Linwei District ESC;
- Feasibility Study Report of the Majiagou Landfill;
- SSRA report of the Majiagou Landfill;
- Environmental monitoring reports of the Majiagou Landfill (2021 and 2022);
- Contingency Plan for Environmental Emergencies of the Majiagou Landfill;
- Drilling Plan for Environmental and Fire Emergencies of the Majiagou Landfill;
- Collection of management policies of the Majiagou Landfill (Landfill Machinery Management Policy, Landfill Disinfection and Deodorization Policy, etc.);
- Collection of management policies and sample labor contract of the Majiagou Leachate Treatment Plant;
- Preliminary design of Majiagou Landfill closure;
- Collection of management policies of Linwei District Used Material Recovery Company;
- Reply of the Shaanxi Provincial Ecology and Environment Department on the EIA Report of the Weinan Urban WTE Plant;
- Feasibility Study Report of the Weinan Urban WTE Plant;
- EIA Report of the Weinan Urban WTE Plant;
- Expert opinions on the Work Safety Analysis Report of the Weinan Urban WTE Plant;
- State-owned land transfer contract (Weinan Urban WTE Plant);
- Collection of management policies of Weinan Sanfeng Company;
- Notes on land lease, LA and ownership of the Linwei District Subproject;
- Survey data of agencies concerned, townships / sub-districts and villages / communities in Linwei District

2. Chengcheng County

- Feasibility Study Report of the Chengcheng County Subproject;
- Collection of management policies of Chengcheng County ESC;
- Sample labor contract and employment for cleaners of the Chengcheng County ESC;

- Feasibility Study Report of the Yaotou Landfill;
- Handover agreement of the Yaotou Landfill;
- Environmental monitoring reports of the Yaotou Landfill (2022);
- Feasibility Study Report of Yaotou Landfill closure;
- Collection of management policies of Chengcheng Landfill;
- Notice of the Chengcheng County ESC on Centralized Waste Collection and Transfer;
- Reply of the Weinan Municipal Ecology and Environment Bureau on the EIA Report of the Chengcheng Landfill;
- Feasibility Study Report of Chengcheng Landfill closure;
- Reply of the Chengcheng County Government on Block Comprehensive Land Prices for Farmland of Chengcheng County;
- Land pre-examination and site selection opinion of the Chengcheng County WTE Plant;
- Feasibility Study Report of the Chengcheng County WTE Plant;
- SSRA Report of the Chengcheng County WTE Plant;
- Notes on land lease, LA and ownership of the Chengcheng County Subproject;
- Survey data of agencies concerned, townships / sub-districts and villages / communities in Chengcheng County

3. Chencang District

- Notice of the Shaanxi Provincial Natural Resources Department, and Agriculture and Rural Affairs Department on Issues concerning Facility Agriculture Land Management;
- Opinions of the Chencang District Government on Strengthening Rural Public Infrastructure Management and Poverty Alleviation, and Promoting Rural Revitalization;
- 5-year Action Plan for Rural Living Environment Improvement of Shaanxi Province (2021-2025);
- Pre-examination Opinion on Land Used for the Chencang District Subproject;
- Feasibility Study Report of the Chencang District Subproject;
- Management policies and sample labor contract of the Chencang District ESC;
- Contingency Plan for Flood Control of the Chencang District ESC;
- Survey data of agencies concerned, townships / sub-districts and villages / communities in Chencang District

4. Baoji City

- Feasibility Study Report of the Boaji City Subproject;
- Contingency Plan for Flood Control of the Baoji City SWMC;
- Contingency Plan for Environmental Emergencies of the Changshougou Landfill;
- Feasibility Study Report of the Changshougou Landfill;
- EIA Report of the Changshougou Landfill;
- Environmental Protection and Monitoring Management Policy of the Baoji City SWMC;
- Preliminary design of Changshougou Landfill closure;
- Operating Standard Management Policy of the Changshougou Landfill;
- LA data, property right certificate, etc. of the Changshougou Landfill;
- Feasibility Study Report of the leachate treatment plant of the Changshougou Landfill;
- EIA Report of the leachate treatment plant of the Changshougou Landfill;
- Leachate SOP of the Changshougou Landfill;
- EIA Report Form of the biogas plant of the Changshougou Landfill;
- Contingency Plan for Electric Shocks of Xi'an Yifeimingdake Regeneration Resource Utilization Co., Ltd.;
- Contingency Plan for Fires and Explosions of Xi'an Yifeimingdake Regeneration Resource Utilization Co., Ltd.;
- Note on LA and HD Compensation Rates, Resettlement Modes, and LA Procedure of the 12th Batch of Baoji City in 2019;
- Expert review opinions on the occupational protection facility design of the Changshougou Landfill;
- Expert review opinions on the occupational hazard pre-assessment report of the Changshougou Landfill;
- SSRA Report of the Changshougou Landfill;
- Feasibility Study Report of the Changshougou Landfill;
- OHS Pre-assessment Report of the Changshougou Landfill;
- Energy Conservation Pre-assessment Report of the Changshougou Landfill;
- Management policies of Shaanxi Hengyuancheng Environment & Power Co., Ltd.;
- LA data, property right certificate, etc. of the Baoji City Subproject;
- Survey data of the agencies concerned, townships / sub-districts and villages / communities in Baoji City