Technical Assistance Consultant's Report

Project Number: TA 8817
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Nepal: Far Western Region Urban Development Project (Volume 1)

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For: Ministry of Urban Development
Department of Urban Development and Building Construction

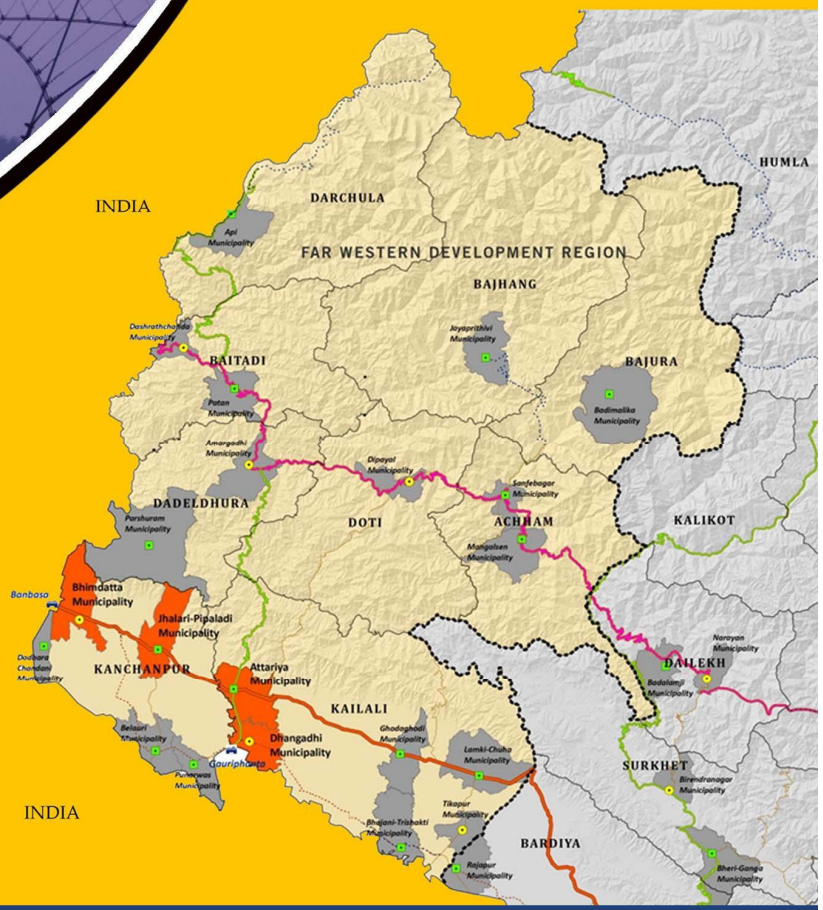
Asian Development Bank

Government of Nepal
Ministry of Urban Development
Department of Urban Development and Building Construction

ADB

Second Integrated Urban Development Project (IUDP2)

TA 8817-NEP



Far Western Region Municipalities
Draft Final Report - Summary

September 2015 (Preface January 2017)

Government of Nepal

Ministry of Urban Development

Department of Urban Development and Building Construction

Second Integrated Urban Development Project (IUDP2) for the Far Western Region of Nepal

(PPTA 8817-NEP)

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The rationale[1] for the Far Western Region Urban Development Project was to improve livability and urban services in the municipalities of Attariya, Bhimdatta, and Dhangadhi in the Far Western Region (FWR) of Nepal through planning, infrastructure investments, and institutional strengthening. These 3 municipalities are located within a 60km corridor in the Terai plains bordering India.

The main objective of TA 8177-NEP was to support the Department of Urban Development and Building Construction (DUDBC) under the Ministry of Urban Development (MOUD) and the 3 project municipalities to (i) identify investment priorities, (ii) finalize the implementation arrangements, (iii) support MOUD in undertaking advance contracting actions, (iv) structure the project, and (v) help to finalize the adequate documentation for approval of the investment project. A design and supervision consultant (DSC) firm would be engaged with loan proceeds to undertake detail design and additional due diligence activities (social and environmental safeguards, financial and economic analysis) for the project based on the technical assistance (TA) pre-feasibility study (PFS).

In December 2014, the Government declared Jhalari Pipaladi as a municipality which was then added to the list of FWR project municipalities.

The PFS TA commenced in February 2015 and an Inception Report submitted in March 2015. The Interim Report was due to be submitted in May, but on 24th April 2015, a devastating earthquake hit Nepal. Progress on the project preparation was immediately suspended for nearly 2 months. DUDBC requested that the project title be changed to Second Integrated Urban Development Project (IUDP2) and the Interim Report was submitted in June 2015.

During August there was sporadic political agitation in the Terai region which severely affected any field progress on the project preparation and from 23 September 2015 there was a border blockade with India. This IUDP2 Draft Final Report was submitted in October 2015 and is the prime output of the Far Western Region Urban Development Project Pre-feasibility study.

The border blockage continued for nearly 5 months and was lifted on 8 February 2016. ADB fielded a Mission to Nepal in February 2016 for (i) a review mission for the project preparatory TA 8817-NEP: Far Western Region Urban Development Project ('IUDP2'); and (ii) a preliminary consultation mission for potential, additional investment related to L2650-NEP: Secondary Towns Integrated Urban Environmental Improvement Project (STIUEIP) and L2851-NEP: Integrated Urban Development Project (IUDP).

Subject to project readiness, ADB and GON agreed that the 4 FWR municipalities could be included together with additional investments for 2 of the STUEIP and 2 of the IUDP municipalities as a Regional Urban Development Project (RUDP).

In March 2017, additional TA 8177 resources were mobilized to (i) assess project readiness of the 4 STUEIP and IUDP municipalities in line with earlier PPTA studies and detail design work (referred to as Group A), (ii) undertake further due diligence of the identified investments for the 4 FWR municipalities (Group B), (iii) prepare draft loan appraisal documents, and to (iv) initiate loan consultant procurement to advance project readiness prior to ADB Board approval.

This report covers only the PFS of the Far Western Region (RUDP Group B) municipalities.

[1] ADB Project Number: 47252. Concept Paper December 2014. Nepal: Far Western Region Urban Development Project. Manila.

Acknowledgements

The PPTA Team wish to acknowledge with thanks and appreciation the support from the Government of Nepal; especially the DUDBC and Municipal staff from the four project municipalities (Attariya, Bheemdatt, Dhangadhi and Jhalari Pipaladi) during the project preparation, assisting with organizing stakeholder workshops and meetings, making contacts and collection of vital information for developing the Project.

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Second Integrated Urban Development Project (IUDP2)

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Abbreviations

ADB	–	Asian Development Bank
asl	–	above sea level
DDC	–	District Development Committee
DSC	–	design and supervision consultant
DUDBC	–	Dept. of Urban Development and Building Construction
DWSS	–	Dept. of Water Supply and Sewerage
EA	–	executing agency
ENPHO	–	Environmental and Public Health Organisation
GoN	–	Government of Nepal
lpcd	–	litres per capita per day
IA	–	Implementing Agency
ICB	–	international competitive bidding
IDC	–	Institutional Development Consultant
IS	–	international shopping
mld	–	mega litres per day (1 mega litre = 1000m^3)
MLD	–	Ministry of Local Development
MPP	–	Municipal Periodic Plans
MoPIT	-	Ministry of Physical Planning and Transport
MoE	–	Ministry of Environment
MoF	–	Ministry of Finance
MoFALD	–	Ministry of Federal Affairs and Local Development
MoUD	–	Ministry of Urban Development
MoWC&SW	–	Ministry of Women, Children & Social Welfare
MuAN	–	Municipal Association of Nepal
NCB	–	national competitive bidding
NEA	–	Nepal Electricity Authority
NGO	–	non-government organization
NPC	–	National Planning Commission
NWSC	–	Nepal Water Supply Corporation
PMC	–	Project Management Consultant
PPTA	–	project preparatory technical assistance
RWSSFDB	–	Rural Water Supply & Sanitation Fund Development Board
SWMTSC	–	Solid Waste Management Technical Support Center
TA	–	technical assistance
TDF	–	Town Development Fund
UN	–	United Nations
VDC	–	Village Development Committee
WSUC	–	Water Supply Users Committee

1 Regional Economic and Urban Development Vision

[Note: This section to be read in conjunction with Discussion Note No.1 - Regional Economic and Urban Development Vision. Its intention is to think beyond urban sector interventions to transform the region, and ensure that multi-sector investments are complemented with actions towards sustainable urbanization].

1.1 Economic Development Vision for Far Western Region

1.1.1 The Attraction

1. Undoubtedly, Nepal is a gifted country and the Terai plains in which the project towns are located represent the 'bread basket' of Nepal. The Far Western region, while among the most backward regions of Nepal, is also one of the most virgin and unexplored territories of Nepal. The challenge and opportunity for this region is to get on a path to accelerated human development whilst retaining its beautiful and unspoilt nature; whilst retaining its pristine rivers, water bodies, wild life and indigenous culture.

1.1.2 Pre-requisites

2. Significant pre-requisites need to fall in place before the region can hope to achieve transformational growth, and once they do, the region may experience rapid transformation:

- Developing a strong transportation linkage with India: The economic prosperity of Nepal and particularly the FWR is undoubtedly tied to its relations with India and more specifically with the quality of the transportation access between the two countries. Current access to India is limited.
- Enactment of the Constitution and implementation of decentralisation of governance: All strategies will require institutional and individual leadership to be successfully implemented.

1.1.3 Proposed Economic Development Vision

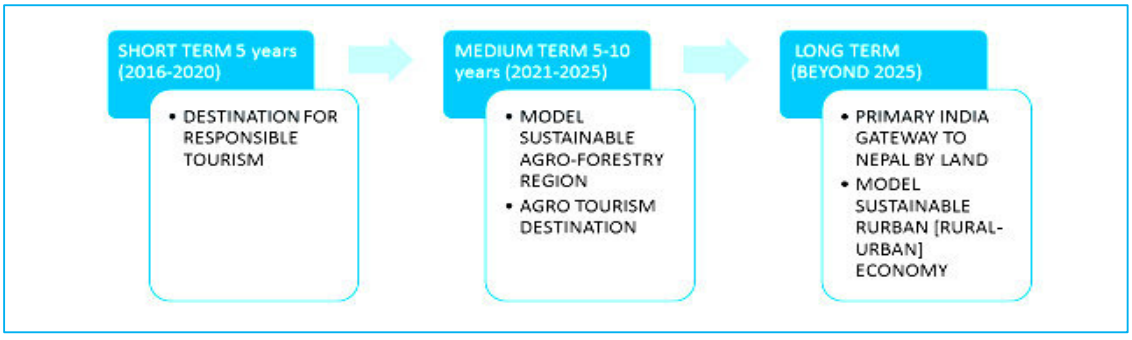
3. In the near term, two sectors naturally present themselves as focus areas for economic development of the region:

a. Tourism

b. Agriculture and forestry related – agro forestry, commercial forestry, etc.

4. Both of these sectors will have to be supported by a strong infrastructure sector investment program *viz.*, power, roads, urban infrastructure, etc., all of which would also contribute to additional economic activity in their own right.

Figure 1-1: Evolving an Economic Development Vision



5. Strategic and multi-sector actions to ensure economic development of the region:

   a. Ensuring sufficient and surplus availability of power: Small and micro-hydro schemes would be clean, cheap and ecologically sustainable. A few large projects like Pancheshwar and West Seti could serve as a major balance power reservoir to the system.

   b. Improving basic education and provision of vocational education: Government could consider supporting the establishment of a Far Western University for Agriculture and Forestry with a focus on developing/ evolving and promoting Sustainable Agriculture and Forest Management practises for the region. A good location for this could be in Jaladi Pippaladi because land is likely to be cheaper, it is equidistant between the two major towns of Dhangadhi and Bheemdatt and is in a rich agricultural belt.

   c. A major regional roads program: The postal road needs to be developed as a dependable two-lane highway. The roads connecting all the municipalities to the EW highway and the postal road should be black-topped two lane highways. An alternative road from Dhangadhi to India that does not go through the Dudhwa national park or the Pilibhit reserve needs to be identified and developed. One potential route could be via Punarvas municipality and further leading to the Nepal border abutting the Indian town of Sampoorna-nagar. If the UP government in India can be further convinced to strengthen the linkage between Sampoorna-nagar and Palian Kalan, then this would offer a better alternate entry into the Dhangadhi region. The region also requires a well-run public transport system.

   d. Strengthening the India Linkage: Find intermediate solutions for inter-country bus transportation between India and Nepal across the borders at Bheemdatt and Dhangadhi.

   e. Improve the linkage between Dhangadhi and Dipayal: A daily flight between Dipayal and Dhangadhi in the morning and the evening would help build stronger collaboration between the Administrative Offices and enable better outcomes for the Terai plains.

1.1.4 Informing the Urban Development Vision

6. Planning and Urban Infrastructure creation process. An economic vision and strategy that is primarily founded on sustainability principles and on sectors such as tourism, agriculture, forestry, agro-tourism, and the like, has certain implications for the urban development process. These are explained below:

   a. Firstly, it has implications for land use planning. The aim should be conserve the agricultural spaces in the urban areas and its peripheries. Towns are therefore likely to take on a more scattered and spread-out character, with a possible dense town centre, but a much more green and scattered outer area, that practically merges with the rural without a clear boundary. The town centre would be a place for commercial activity, for celebrations and get-togethers, for tourists to stay with hotel facilities, for locating the government and private offices, etc. As one moves away from the town centre, the urban settlement would increasingly become more green and spread out. It does not mean that every house is vastly separated from the other and land holdings are extremely large, but it could allow for clustering of homes in an area, which is then separated by an agricultural patch or a urban forest patch or a natural feature like a lake or a park. In the Indian sub-continent, it could be likened to the state of Kerala and Goa, both of which incidentally have a strong Tourism base.

b. When such a town grows to the scale of say 3 times Dhangadhi's current population, i.e. over 0.5 million people, then such forms of land-use would lead to a corridor type development. They could stretch over long distances, and usually along transportation corridors. So, to enable such growth, investments in roads and connectivity infrastructure are crucial, as also the provision of a good public transport service. However, if such development is not well managed, it could lead to a ribbon type development along the corridor that may not ensure the best use of the lands in the inner areas and sometimes may also restrict access to the interior spaces. Therefore, settlements along the corridor should be carefully planned; land pooling could be a useful tool and methodology to approach this.

c. The implications for urban infrastructure are that different systems may have to be adopted for areas with high, medium and low densities. Centralized systems may be needed in the town centre and the older parts of the city, but the mid areas and the peripheries of the city will require 'decentralized' infrastructure at various scales and capacities – from household scale to small communities to large communities. Utilities like power, water, wastewater may have to be planned as decentralized onsite systems, e.g. DEWATS. Drainage for roads will have to be planned as sustainable urban drainage systems [SuDS] that are likely to be less expensive and capable of handling treated waste water overflows. Bio-gas based power production is already a successful program in rural Nepal and this can continue. Even SWM will have to be decentralized except for toxic and hazardous waste which can be handled at a common land fill site for the urban corridor.

7. The whole of Dhangadhi-Attariya-Bheemdatt can develop as an urban corridor with the above mentioned character. However, each town could still have its own identity leading from certain natural functional roles it could play in the region:

- Attariya – logistical HQ for the region – at the intersection of EW-NS highway; will house major transport terminals, SEZ, industrial parks, etc.
- Bheemdatt – Commercial centre for the region, Gateway to India – Currently has maximum people and goods traffic coming from India into the FWR.
- Dhangadhi – Administration centre for the region - town with all the HQ for the two districts located there. Also serving as the tourist entry point, due to the airport. Hence, good quality hospitality infrastructure including Tourist Amenities.
- Jalari-Pippalari – Agricultural centre and University town – Quiet town with many innovations in agriculture; pilot experimentation with Agro forestry & other forms of commercial and sustainable agriculture / forestry.

8. Tourist friendly facilities will have to be scattered across the corridor and more particularly in the tourist spots – places to relax, toilets, information boards, signage, etc. will need to be planned and provided. Homestays would form an important part of the picture.

9. There could be laws that limit the minimum size of a land parcel to allow sufficient front and back yard space for ecosystem services and green patches. Bicycle and walking tracks may also have to be planned for. As one of the officers who were interviewed mentioned, the FWR could pioneer the idea of a 'farmer friendly city'.

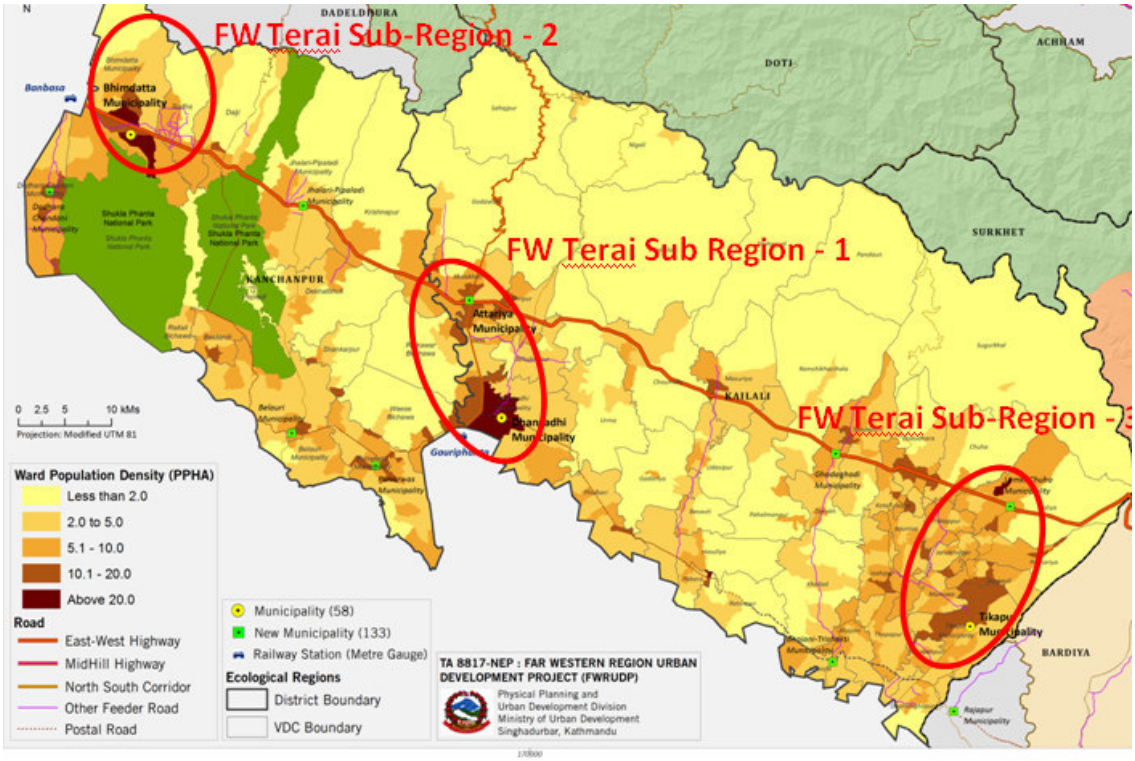
10. As pointed out, market buildings and tourist information/ amenity centre could be seen as part of the urban infrastructure package that can produce substantial economic impacts for the region.

1.2 Regional Urban Development Vision

1.2.1 Regional Growth Pattern in Far Western Terai

11. The Far Western region only became accessible to the Eastern parts of the country two decades ago, after the completion of the bridge over the Karnali River followed by 22 bridges on the East-West highway to the west of it. The bridge stopped the dependency on Indian routes to reach the region. The improved access resulted in rapid population growth in the region due to migration of the people from the hills and other parts of the country. Consequently, areas around major highways and junctions started to develop as market centres. This can be clearly seen from census data of the past three decades. Among 11 municipalities in the region, Attariya and Ghodaghodi had the highest growth rate of 4.5%, followed by Dhangadhi with 4.2%. Except Bhajani, all municipalities in Kailali had growth over 4%. However, the growth in the municipalities in Kanchanpur is below 3%; presumably due to the lack of good connectivity to India, the hills and to the southern parts.

Figure 1-2: Population Density Distribution in Kanchanpur and Kailali Districts



12. Three sub-regions in the far western terai have started to become prominent, namely Dhangadhi-Attariya corridor, Bheemdatt and adjoining VDCs (Sudha and Dorji) on the east and Tikapur-Lamki Chuha corridor. The other two municipalities along east-west highways i.e. Jhalari-Pipaladi and Ghodaghodi are yet to develop their prominence and are expected to remain as small market centres in the years to come.

13. Inter-regional migration in the terai during the last census decade (2001-2011) was observed as 1.6 million; which is 29% of the total population in Terai. Far western Terai region had attracted about 17% (281,272) of total migration to Terai and about 74% of the people migrated from the mountains and hills of far western region itself. This indicates the tendency to move into the flat terrain from the high elevations of same region.

1.2.2 The Project Municipalities

Population Growth

14. The population in the four project municipalities i.e. Attariya, Bheemdatt, Dhangadhi and Jhalari Pipaladi in 2011 was 321,116 which constituted 26% of the total population in Kailali and Kanchanpur. The growth during 1991 to 2001 in all municipalities ranged between 4.2% to 4.8%. However, varied growth rates were observed during 2001 to 2011. Attariya had the highest growth rate with 4.1% and Bheemdatt had the lowest with about 1.1%; Dhangadhi had the growth of 3.6% and Jhalari Pipaladi had about 2.5%. Table 1-1 shows the population distribution in the four municipalities over past three census decades.

Table 1-1: Population in Project Municipalities

Municipalities	Population			Growth Rate		
	1991	2001	2011	1991-2001	2001-2011	1991-2011
Attariya	30,282	48,533	72,521	4.8%	4.1%	4.5%
Bheemdatt	62,050	93,901	104,599	4.2%	1.1%	2.6%
Dhangadhi	44,753	71,726	101,970	4.8%	3.6%	4.2%
Jhalari Pipaladi	21,661	32,780	42,026	4.2%	2.5%	3.4%
TOTAL	**158,746**	**246,940**	**321,116**	**4.5%**	**2.7%**	**3.6%**

Source : CBS

15. Based on the Nepal classification for urban areas of 10 persons per hectare, only 9% of the project municipalities' area can be called urban, which is also where about 35% of the population live. Both new municipalities; Attariya and Jhalari Pipaladi, presently lack urban character and all the wards have less than the classified urban density. In Dhangadhi half of the 14 wards have urban character and in Bheemdatt only 5 out of 19 wards exceed the minimum urban density.

16. However, a conspicuous urban sprawl is observed in Bheemdatt. Except for a small part of wards 4 and 18, all other parts of the municipality have developed haphazardly. There is a constraint in the south of the East-West Highway because wards 14, 16, 15 and 18 lie in the buffer zone of Shukla Phanta Wildlife Reserve. There are a few infill areas on the north of highway, which will develop quickly upon completion of Tanakpur-highway link road. New commercial areas with hotels, godowns, fuel stations are expected along this road and on the south west triangle when the international border crossing opens via the Tanakpur Barrage or if a new bridge is constructed over the Mahakali River. In the long term the city has to expand eastwards into Sudha and Dorji VDcs beyond the municipality boundary. Small land pooling schemes in parts of the municipality could be initiated where public land is available. Public land can be used for parks or open space and in the surrounding neighbourhoods where planned development using land-pooling should be initiated.

17. In Dhangadhi, wards 1 to 5, 8 and 13 are urban in nature in terms 10 persons per hectare; which constitute about 26% of the municipality. The remaining 74% of the area is predominantly rural in character. Interestingly, 60% of the population is concentrated in these wards. There are still numerous areas on the north, north east and west where efforts for planned development could be initiated. However, these areas are more suitable for institutional and commercial development. The city should preferably be limited to the middle of wards 8 before Devaria village in order to have an efficient urban management

system. A cluster of settlements with ample buffer zones of agriculture and forests in between could be encouraged outside the commercial areas to the east; i.e. Mahehara, Ghuinyaghat, Punarbas area, Jugeda of wards 8, 10 and 12. Improvement of accessibility on the south east would lead to development of these residential areas. In addition, a land pooling initiative could be promoted for better planning.

Population Projection

18. Except Attariya, the population growth in the municipalities during last census decade (2001-2011) cannot be termed very high. During the period, Dhangadhi had about 3.6% of growth and Jhalari-Pipaladi had the growth of about 2.5%. Among four, Bheemdatt had the least growth of about 1.1%; less than the national growth (refer Table 1-1). However, more growth is expected after the start of IUDP2, operation of postal road and improvement of connectivity to India. The population in four municipalities is expected to reach close to 1.0 million by 2041.

1.2.3 Visioning Regional Urban Development

Regional Urban Development Vision for Far West Terai

19. Balanced and prosperous urban centres in Far Western Terai Region with the integration of tourism, agriculture and forestry and mainstreaming GRESI; activities that are '*green, resilience, efficient, sustainable and inclusive*.'

Balanced and Prosperous Urban Centres

20. Nepal Urban Development Strategy 2014 has adopted the 15 year national vision on Balance and Prosperous National Urban Centres; by which it means to incorporate i) achievement of a set milestones regarding physical and institutional development ii) enhancement in the quality of urban living through the improvement of urban environment, provision and quality of infrastructural, economic and social services.

Integration of Tourism, Agriculture and Forestry

21. Far Western Terai Region is has ample amount of natural resources in the form of fertile land, forests and lakes served by numerous rivers. The area also possesses high potentiality of developing tourism as a major economic base. The vision hence looks forward to integrate tourism, agriculture and forestry towards sustainable economic development of the region.

1.2.4 Functional Roles of Project Municipalities

22. The conceptual development plans and growth pattern of the 4 project municipalities are indicated geographically in **Figure 1-3** in relation to the likely function roles.

Bheemdatt: Western gateway and market centre

23. Owing to its location at the western international border of the country, Bheemdatt has potential to develop as a western gateway in proper sense. Initially, with completion of the Tanakpur Link road and opening up of traffic across the Tanakpur Barrage to India within the next 2 years and later a new bridge over the Mahakali River with a dry port in Chadani Dodhara, Bheemdatt is expected to have unhindered linkage to the Indian cities. The municipality is then likely to grow to a fairly large market centre for domestic and foreign goods. As a result, the market will be extended to the both east and west side of the municipality. Due to the limitation of land within the municipality, in the long term the

adjoining VDCs (Sudha and Dorji) on the east need to be merged. A land pooling scheme covering about 500ha may need to be initiated.

Jhalari-Pipaladi: Demonstration centre for community initiatives

24. As of present, Jhalari-Pipaladi has not developed any particular urban identity and it is premature to receive large investments. However, this area could be developed as a demonstration centre for community initiatives for the promotion of non-timber forest products (NTFP); as the western edges of the municipality lie in the buffer zone of Shuklaphanta Wildlife Reserve. This could include, as mentioned above, the establishment of a Far Western University for Agriculture and Forestry with a focus on developing/ evolving and promoting sustainable agriculture and forest management practises for the region. There are altogether nine community forest committees under Buffer Zone Management Committee, of which two committees lie in Jhalari and Pipaladi. Support to community development and income generation activities with forward linkages would help strengthen the community initiatives in the region. A small market centre of about 300ha along the E-W Highway, through land pooling, could be developed with facilities, such a, petrol pumps, public toilets, bus stops, vegetable markets along with residential plots in the inner areas.

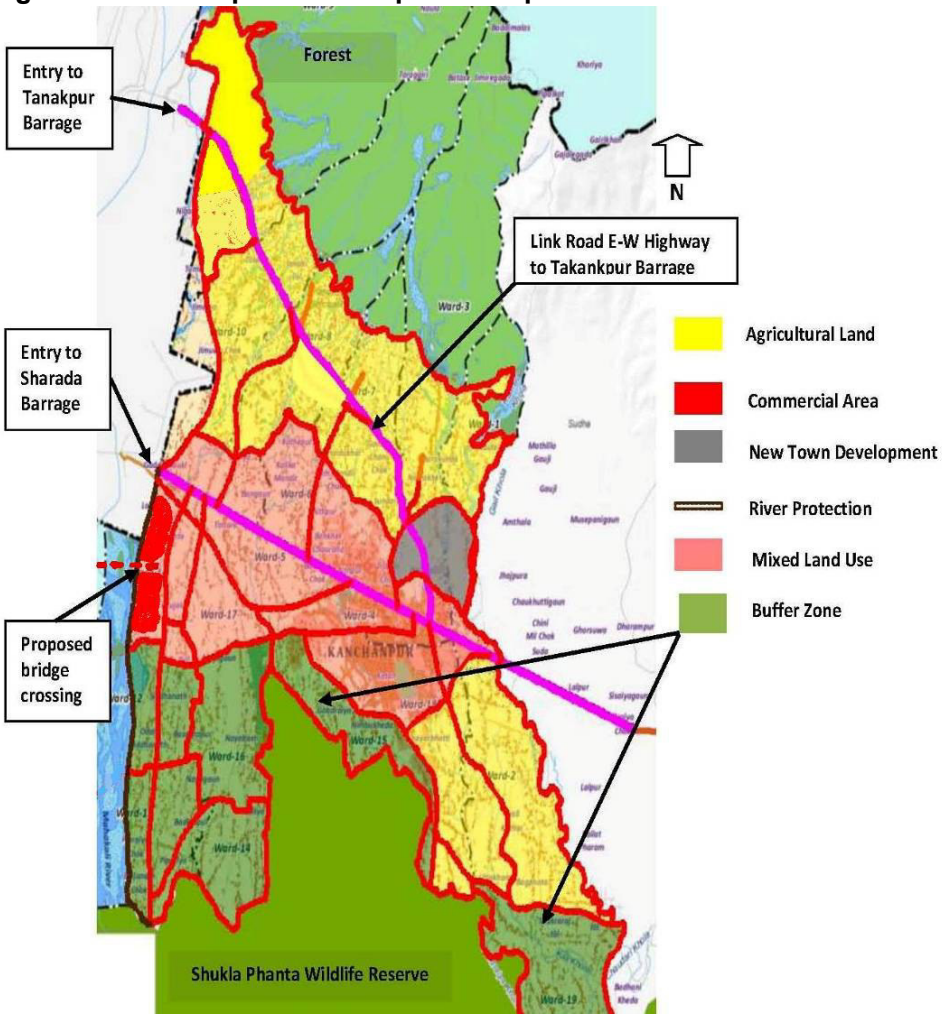
Attariya: Wholesale market of agricultural products

25. Being located on the cross roads of two major highways with all weather roads to the hills, Attariya can provide avenues to the agricultural products; to be distributed to other parts of country and India and develop a functional role of a service centre to the people coming from the hills. Space for large godowns with weighing, sorting, cleaning, grading and packaging facilities, through community or private initiatives, could be one of the pre-requisites. Further a Special Economic Zone Development Committee, under Ministry of Industry, has identified around 80ha of land at Haraiya on the east of Attariya Chowk for the development of SEZ; which could add value to the municipality.

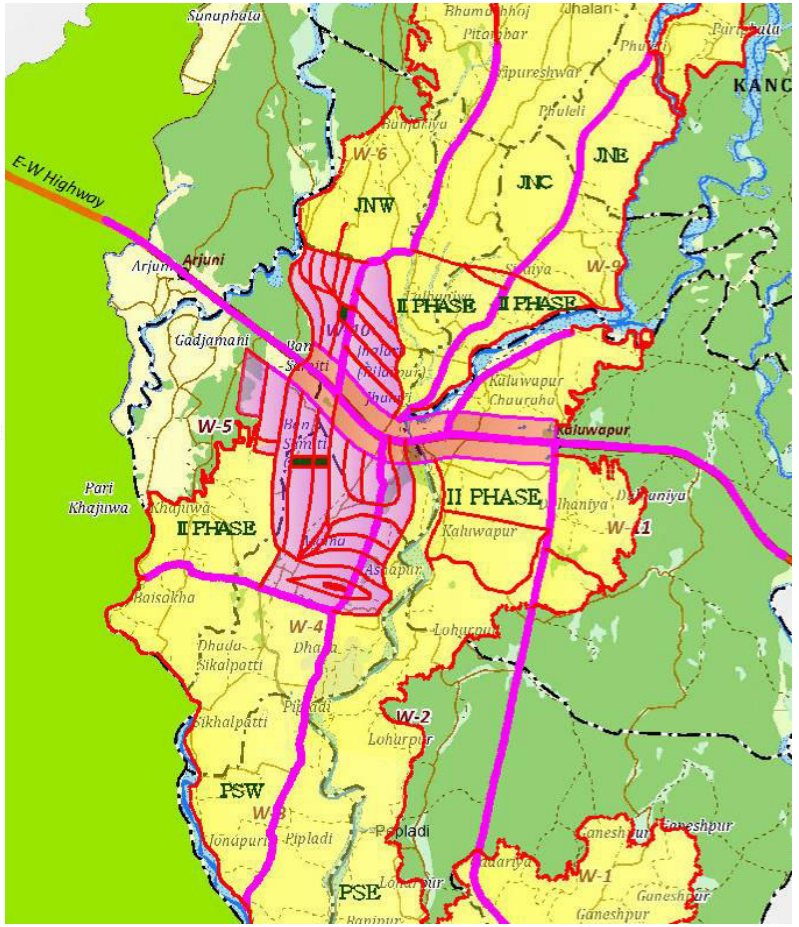
Dhangadhi: A regional administrative centre

26. Due to having air connection to Kathmandu and road connection to the hills, connectivity to India and being located in the middle of the region, Dhangadhi has started serving as de-facto regional administrative headquarter; the official headquarter located in Dipayal-Silgadhi, about 200km north of Dhangadhi is not easily accessible to a large population of the region. Like Nepalgunj, Dhangadhi will continue to attract regional level non-governmental organizations, hotels and small industries. With deliberate and concerted efforts over the years, Dhangadhi can also be developed as the regional centre of the activities relating to agriculture, forestry and tourism.

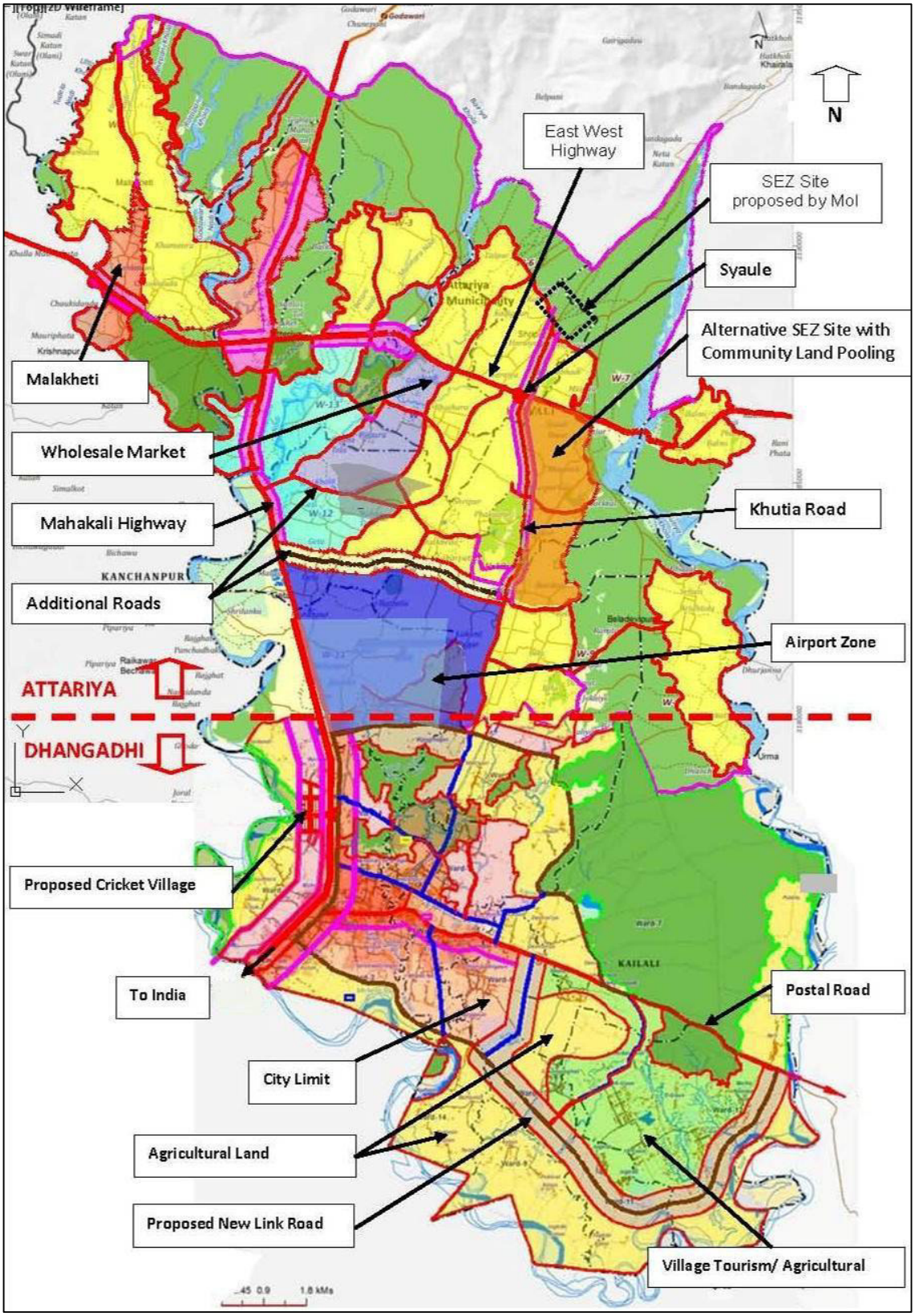
Figure 1-3: Conceptual Development Map of Bheemdatt



Conceptual Development Map of Jhalari Pipaladi



Concept Map of Attariya and Dhangadhi Sub-Regional Development



1.2.5 Staged Urban Development

27. MOUD will be responsible for facilitating or coordinating the following activities.

Short Term (1 to 3 years)

a. Prepare a Comprehensive Vision Plan 2040 with the participatory process and get it endorsed from the government.

b. Prepare urban development plans and programs in each of the municipalities that help accentuate their functional role.

c. Carry out studies and detail design of priority urban infrastructure improvements projects in the municipalities.

d. Assist KCCI (Kailali Chamber of Commerce and Industry) to establish an NGO to initiate activities to integrate agriculture, forestry and tourism.

e. Prepare land use plans in each municipality and designate specific areas for AVOID, CONTROL and PROMOTE with due consideration of disaster and climate changes.

f. Establish an association for the 4 municipalities where regional planning and development issues can be coordinated and guide the urban development activities in Kailali and Kanchanpur Districts.

g. Establish a federation of community groups of far west region relating to agriculture, forestry and tourism.

h. Initiate land pooling projects in Sudha (Bheemdatt), Kaluwabazar in Jhalari-Pipaladi, Syaule in Attariya and Matiyari, Bijayanagar and Chatakpur areas of Dhangadhi and initiate feasibility studies.

i. Coordinate with MoI for the detail study on the establishment of SEZ in Attariya and acquire the land.

j. Coordinate with MoPIT for construction of a bridge over Mahakali River.

Medium Term (3 to 7 years)

a. Implement priority investment projects in the municipalities under ADB's assistance, aligned with the economic and urban visions

b. Coordinate with MoPIT for the construction of 4 lane road from Dhangadhi to Attariya, link road from Tanakpur to E-W Highway at Bheemdatt.

c. Coordinate with MoPIT for the completion of road and bridges connecting to Dhangadhi-Tikapur and Tankapur Link Road.

d. Coordinate with MoI for the construction of SEZ.

e. Coordinate with CAN for the extension of Dhangadhi Airport to allow use by large aircraft and night operation facilities, hanger, cargo etc.

f. Start river protection works through bio-engineering along Khutia, Godavari and other rivers with the mobilization of community groups.

g. Establish exquisite tourist information centres (including decent facilities like cafe, cyber, saloon, lavatories, ATM, locker) in Dhangadhi and Bheemdatt.

h. Establish an agro collection and storage centre in Attariya in PPP model and establish backward and forward linkages

2 Socio Economic Analysis

[Note: This section to be read in conjunction with Discussion Note No.2 - Socio Economic and Gender Analysis].

2.1 Demographics

28. Dhangadhi and Bheemdatt became municipalities in 1976-77 while Attariya and Jhalari-Pipladi were declared municipalities in 2014. Hence the situation and capacities are very different in the four municipalities. Refer to DN#2 Annex A for detailed data.

29. The total population of the four municipalities in 2011 was 321,116 with Bheemdatt and Dhangadhi having more than 100,000 people each. Attariya had 72,000 and Jhalari Pipaldi had the lowest with around 42,000 people. The average number of members in a family in Attariya was 6.6, Bheemdatt was 6.2, Dhangadhi, 6.1 and Jhalari Pipaladi 6.7. Women were more than men in all municipalities except Dhangadhi.

30. On average, the population of the four municipalities had 61% Brahman Chhetri, about 20% Terai Janajati and 14% Hill Dalits. Brahman/Chhetri caste group were highest in Bheemdatt and lowest in Dhangadhi, Terai Janajatis were highest in Dhangadhi and lowest in Bheemdatt, Hill Dalits were highest in Attraiya and lowest in Dhangadhi.

31. 38% respondents migrated into the four municipalities. About 8% of people were living with disabilities. The highest numbers of persons with disability were amongst Dalits and lowest amongst Brahman/Chhetri households.

32. The caste/ethnic mapping of the four municipalities, based on census data, showed that Hill Dalit, Hill Brahmin /Chhetri and Terai Janajati were the dominant social groups in the project municipalities; see **Table 2-1**.

Table 2-1: Population as per caste/ ethnicity (%)

Caste/Ethnicity	Attariya	Bheemdatt	Dhangadhi	Jhalari Pipaladi
Hill Dalit	22.61%	18.08%	6.49%	13.59%
Terai Dalit	0.05%	0.24%	0.14%	0.00%
Hill Janajati (Excluding Newars)	4.05%	4.04%	5.11%	2.31%
Janajati (Newars)	0.59%	0.37%	1.55%	0.00%
Terai Janajati	22.87%	8.23%	29.83%	21.41%
Hill B/C	49.21%	67.30%	50.28%	62.21%
Terai B/C	0.00%	0.22%	0.85%	0.05%
OBC	0.06%	1.15%	2.68%	0.00%
Muslim	0.22%	0.20%	2.16%	0.11%
Others	0.34%	0.18%	0.89%	0.31%

Source: Municipality Data, 2015

2.2 Education, Health and Household Size

2.2.1 Literacy Rate

33. The overall literacy rate of Attariya is 67%, Bheemdatt is 77%, Dhangadhi is 79%, and Jhalari Pipaladi is 69%. The gender disaggregated literacy rate of all four municipalities is given in **Table 2-2**.

Table 2-2: Literacy Rate of the Municipalities

Municipality	Women	Men
Attariya	57.64	77.15
Bheemdatt	67.69	87.62
Dhangadhi	70.52	87.11
Jhalari Pipaladi	59.42	80.87

Source: National Population and Housing Census 2011

2.2.2 Average Life Expectancy

34. The average life expectancy of women in Attariya, Bheemdatt and Jhalari Pipaladi is higher than that of men in these municipalities; while in Dhangadhi the life expectancy of men is higher than that of women; see **Table 2-3**.

Table 2-3: Average Life Expectancy of the Municipalities

Municipality	Women	Men
Attariya	65	64
Bheemdatt	64	60
Dhangadhi	64	70
Jhalari Pipaladi	64	60

Source: Municipality Data, 2015

2.3 Economic Indicators

2.3.1 Income levels

35. There was high unemployment with 77% unemployed for more than 4 months across the four municipalities. It was almost double in rural areas. The highest number of people with income above NRs.30,000 was in Dhangadhi and lowest in Jhalari-Pipaladi. Among Brahman/Chhetri Hill, majority had income level between NRs.10,000 to 20,000 while the income level of majority of Dalit Hill and Janajati Terai was below NRs.10,000. 41% Dalits and 39% in rural areas had to take credit for managing regular household expenses.

2.3.2 Land Ownership

36. 78% respondents had their own land, 14% were on *ailani* (government or public) land and 8%t were squatters. Attariya had highest percentage of squatters (12%). In urban areas 93% had own land, 4% were on *ailani* land and t3% were squatters. In rural areas 66 % had own land, 24% had ailani land and 10% were squatters. 16% of Dalits were squatters.

37. Among the caste/ ethnic groups, land ownership was highest amongst Brahman/Chhetri respondents (83%), followed by Janajati (68%) and Dalit (60%).

2.3.3 Housing

38. The CBS data shows that majority of the households in all the four municipalities live in houses owned by them, followed by rented houses; see **Table 2-4**.

Table 2-4: Ownership of House in the Municipalities

Ownership of house	Attariya		Bheemdatt		Dhangadhi		Jhalari-Pipaladi	
	No.	%	No.	%	No.	%	No.	%
Owned	12777	93%	15978	76%	17338	84%	7755	97%
Rented	782	6%	4652	22%	2647	13%	192	2%
Institutional	53	0%	256	1%	218	1%	9	0%
Others	133	1%	144	1%	481	2%	69	1%
Total	13745		21030		20684		8025	

Source: National Population and Housing Census 2011

2.3.4 Household Size

39. The average household size varies between the 4 municipalities from 4.85 in Bheemdatt to 5.28 in Dhangadhi; see **Table 2-5**.

Table 2-5: Details of Household Size in the Municipalities

Details	Dhangadhi	Bheemdatt	Jhalari Pipaladi	Attariya
HH	13745	21030	20684	8025
Pop. (M)	34630	51439	51087	19604
Pop. (F)	37891	50531	53512	22422
Total	72521	101970	104599	42026
Avg. HH size	5.28	4.85	5.06	5.24

Source: National Population and Housing Census 2011

2.4 Municipal Data on Access to Basic Municipal Services

2.4.1 Water Supply

40. Less than 25% (ranging from 24% down to 2%) of households in the 4 project municipalities obtain drinking water from a piped source. The majority (ranging from 65% to 95%) of households use hand pumps (see **Table 2-6**).

Table 2-6: Sources of Drinking Water

Source	Attariya		Bheemdatt		Dhangadi		Jhalari Pipaladi	
Pipeline	3166	24%	4531	22%	4169	20%	148	2%
Tube well	8692	65%	15184	73%	16861	80%	7636	95%
Well	-		122	1%	-		-	
Natural	1355	10%	232	1%	-		66	1%
Others	168	1%	615	3%	-		175	2%
Households	13381	100%	20684	100%	21030	100%	8025	100%

Source: Municipality Data, 2015

2.4.2 Access to Sanitation

41. The type of toilet used by households is an indication of the extent of urbanization in the municipalities. In **Table 2-7** it can be seen that only 7% of Dhangadhi municipal population use open pit toilets, whereas in Jhalari Pipaladi this rises to 55%.

Table 2-7: Types of Household Toilet

Toilet Type	Attariya		Bheemdatt		Dhangadi		Jhalari Pipaladi	
Open pit	5667	42%	6697	32%	1413	7%	4434	55%
Private toilet	2948	22%	1640	8%	1064	5%	1381	17%
Private VIP	4665	35%	12129	59%	18484	88%	2210	28%
Flush toilet	-		-		-		-	
Public toilet	91	1%	-		-		-	
Others	-		218	1%	-		-	
	13371	100%	20684	100%	20961	100%	8025	100%

Source: Municipality Data, 2015

2.4.3 Electricity

42. Over 95% of all households in the project municipalities have access to grid electricity except for Jhalari Pipaladi where this is reduced to 85%, as indicated in **Table 2-8**. However, although not as severe as many areas of Nepal, power load shedding is extensive with seasonal outages up to 8 hours per day.

Table 2-8: Electric Power Sources

Source	Attariya		Bheemdatt		Dhangadi		Jhalari Pipaladi	
Grid	12759	95%	19737	95%	20204	96%	6831	85%
Solar	136	1%	115	1%	0	0%	42	1%
None	486	4%	947	5%	826	4%	1154	14%
	13381	100%	20799	100%	21030	100%	8027	100%

Source: Municipality Data, 2015

2.5 Findings of the Social Economic Household Survey

2.5.1 Methodology/Process

43. The household survey covered 5% (usual norm) of the total households of the four municipalities. The total number of households was 63,484 in the four municipalities; 5% of this total was 3174 (refer **Table 2-9**).

Table 2-9: Municipality Population and Sample Size

Municipality	Pop	Sample 5% by popn.	HH	Sample 5% by HH	Hill Dalit		Hill B/C		Terai Janajati	
					HH No.	%	HH No.	%	HH No.	%
Attariya	72,521	3,626	13,745	687	117	17%	351	51%	219	32%
Bheemdatt	1,04,599	5,230	20,684	1,034	192	19%	751	73%	91	9%
Dhangadhi	1,01,970	5,099	21,030	1,052	106	10%	597	57%	349	33%
Jhalari-Pipaladi	42,026	2,101	8,025	401	55	14%	258	64%	88	22%
Total	**121,118**	**16,056**	**63,484**	**3,174**	**470**	**15%**	**1,957**	**62%**	**747**	**24%**

Source: CBS 2011, MoFALD 2014

44. In addition to the household survey, 4 focus group discussions (FGDs) were held with community women and men in each municipality; meetings with local leaders and municipal office staff; workshops with civil society and other stakeholders were undertaken;

plus an activity mapping matrix. Meetings with specific groups like Badis, Kamlaris and Muslims were also conducted.

2.5.2 Household Head Gender and Land Ownership

45. Women headed households amongst the respondent households were 396 of the 3174 total; equivalent to 12.5%; see **Table 2-10**. Of these, 52% had migrant husbands and 42% were widows. The rest were divorced or separated.

Table 2-10: Women Headed Household by Municipality

Municipality	Number	%
Attariya	64	16.16
Bheemdatt	105	26.52
Dhangadhi	148	37.37
Jhalari Pipaladi	79	19.95
Total	**396**	**100.00**

46. Respondents with own land were 78% amongst the respondents; see **Table 2-11**.. Squatters were 7.5% and people living on ailani land were 14.3%.

Table 2-11: Respondent by Land Ownership

Land Ownership	Number	%
Own land	2,471	77.85
Ailani land	456	14.37
Squatting	241	7.59
Others	6	0.19
Total	**3,174**	**100.00**

Source: TA 8817-NEP. HH survey, 2015

2.5.3 Access to Municipal Services

Water supply

47. The main source of water was the borehole or well (private, owned by the household (Nalka, tubewell, handpump) (93% households) which was the primary source for cleaning, washing, drinking and cooking. Private connection to piped water in house was used by 13%. Amongst municipalities, private connection to piped water was the highest in Dhangadhi (20%). Bheemdatt had 13% while Attariya had about 8%. In Jhalari Pipaladi it was minimal. 18.5% Brahman/Chhetris, only 5% Dalits and 3% Janajtis had private connection to piped water in their house. About 7% in Jhalari Pipaladi, 4% in Dhangadhi, 3% in Bheemdatt and less than 1% in Attariya said that the water was contaminated

Sanitation

48. 80% said they had access to a toilet. 20% of the respondents shared that they did not have access to toilet. A very high percent (40%) in Jhalari Pipaladi did not have access to toilet. In Bheemdatt 19%, in Dhangadhi 17% and in Attariya 16% did not have access to this facility. 42% Dalits shared they did not have access to toilet. 21% Brahman/Chhetris had access to flush toilet while only 8% Dalits and Janajatis had this facility. 81% of the respondents who had access to toilet, used septic tank/soak pit for disposal of excreta, 10% used a pit latrine. Pit latrine and connection to bio-gas plant was used more in the rural areas and septic tank more in urban areas.

Drainage and SWM

49. 47% of the respondents said that they drained kitchen/bathroom water into the garden, 20% into the drain, 17% in pits. 58% respondent households dug a hole to manage solid waste and 34% waste separation, 8% did un-managed throwing.

50. Highest percent of respondents digging a hole was Janajati. Brahman/Chhetri did waste separation and Dalits threw waste without managing it. There was no municipal system for collection of solid waste.

51. Bheemdatt suffered the most from flooding (32% respondents stated so). In Dhangadhi it was 16%, in Jhalari Pipaladi 13% and in Attariya 8%. Higher percent of respondents in urban locations (23.5%) suffered flooding than the rural respondents (17%). Water logging on the road near houses was more common in Dhangadhi (49%), followed by Jhalari Pipaladi (43%) and Attariya (28%). Bheemdatt had the least at 15%.

52. 60% respondents shared that there was water logging near their houses during the rainy season for less than 10 days, 30% had experienced it for more than 10 days and 10% for about 10 days. Almost 40% of Janajatis had experienced water logging for more than 10 days. Also 70% of the respondents in rural areas had experienced water logging for more than 10 days while in urban areas it was only 30%.

Roads and Access

53. 55% of households had access to motorable gravel roads, 18% to motorable pitch road, 14% mud road and 13%t to trails in the four municipalities. Highest percent of respondents with access to motorable pitch was in Dhangadhi (37%), with lowest in Attariya (3%). Similarly, motorable gravel was highest in Attariya (75%) with lowest in Dhangadhi (34%). In the urban areas 42% respondents had access to motorable pitch and 39% to motorable gravel, and in rural area 63% had access to motorable gravel and 6% to motorable pitch.

2.6 Environmental Issues

2.6.1 Physical Problems

54. In Jhalari Pipladi, 41% of households experienced severe flooding after heavy rains. in Jhalari Pipaladi, almost 40% stated that landslides was a mild or severe problem.

55. Almost 40% experienced trouble because of location near dumped garbage in urban areas while in rural areas it was less than 15% who suffered this problem. Living near where septic tank waste is dumped was an issue in Bheemdatt and Dhangadhi.

56. More than 90% respondents in Attariya, Bheemdatt and Jhalari Pipaladi said there was no response at all from municipalities in the event of a disaster. 30% in Dhangadhi expressed there was a response.

2.6.2 Energy Related Aspects

57. The main source of energy was fuel wood/jhinjha/karchi (used by 85% across the four municipalities), followed by LP Gas (41%) and bio gas (18%). 95% Dalits and Janajatis and 80% Brahman/Chhetris used fuel wood. About 5%t were without electricity connection. About 16% Dalit, 9% Janajati and 2% Brahman/Chhetri were not connected to the grid. 90% of respondents in Attariya, Bheemdatt and Jhalari Pipladi shared that the street lights were not available. 55% in Dhangadhi said street lights were available.

2.7 Gender Issues

2.7.1 Status of Women and Girls

58. About 99% of the respondents in Jhalari Pipaladi, 95% in Bheemdatt, 89% in Dhangadhi and 86% in Attariya stated that women were responsible for all household work; i.e. cooking, cleaning and taking care of children and elderly family members. Among caste/ ethnic groups, more than 90% of Dalit and Brahman/Chhetri and about 86% of Janjajatis said so. A higher percent of urban respondents (95%) than rural respondents (90%) said women were responsible for all household work.

59. Majority of respondents stated that women did not go to workplaces while men did. Almost 80% women did not go to the workplace while 32% men did not. In agriculture, 78% women and 71% men worked. 71% women collected fuel wood while 48% men did so. For fodder collection 78% women and only 22% men went. The most common means of transportation for all purposes for women was walking and for men cycling.

60. 73% respondents in Attariya, 60% in Jhalari Pipladi, 57% in Bheemdatt and 49% in Dhangadhi expressed that women had to follow what the husband decided about use of money/income. 65% Dalits, 57% Brahman/Chhetri and 56% Janajatis had the same response. Almost 70% in rural areas and 31% in urban areas also stated the same.

61. Different forms of violence against women and girls have decreased but in Attariya, Dhangadhi and Jhalari Pipladi, majority of the respondents stated that women did not get wages equal to men for the same work they did.

2.7.2 Safety of Women

62. Women were very safe during the day but unsafe at night. Above 20 percent in Jhalari Pipladi expressed that visiting municipal offices was unsafe for women. 100 percent felt forests were unsafe for women.

2.7.3 Caste / Ethnic / Cultural Practices

63. Behaviour towards Dalits had become more liberal but inter-caste marriages were still not socially acceptable. Practising own cultural practices and use of own language had not created too many issues though Janajatis expressed that they had experienced some problems.

2.7.4 Capacity and Empowerment

64. Only 10% of the respondents said that they participated in the municipal processes. Participation in Ward Citizens' Forums and public hearings was high. Participation of Dalit respondents in public and social audit events was low. Participation of women respondents was minimal in the Integrated Planning Committees. A high percent of women were members of self help groups/ Community Based Organisations (CBOs), followed by Community Forestry Users Group (CFUGs).

65. More than half the respondents had knowledge on where they had to go for different urban services. The respondents in Bheemdatt had better knowledge followed by those of Dhangadhi, Jhalari Pipaladi and Attariya. Brahman/Chhetris had better knowledge, followed by Dalit and Janajati. More than half the respondents were aware of their legal rights. The respondents in Bheemdatt had better awareness followed by those of Jhalari Pipaladi, Dhangadhi and Attariya. Brahman/Chhetris had better awareness, followed by Dalits and Janajatis. Men respondents had better legal awareness than women respondents. More

than 65% of respondents shared that the municipality did not at all consult with the local community.

2.8 Physical and Social Infrastructure Priorities

Physical Infrastructure Priority

66. Roads (Bheemdatt, Attariya and Jhalari Pipaldai) and Water Supply (Dhangadhi).

Social Infrastructure Priority:

67. Market center, birthing center and agriculture collection centres

68. In FGDs, the top three infrastructure priorities identified in Attariya included drinking water and roads with sanitation and river control (joint third). In Bheemdatt it was drinking water, drainage and sanitation. In Dhangadhi it was roads, drainage and drinking water. In Jhalari Pipaladi it was drinking water, sanitation and river control.

2.9 Conclusions and Recommendations

2.9.1 Conclusions

69. Availability of municipal services varies in different municipalities. Only a few municipal services are available in all municipalities; e.g. like water supply. Solid waste management or sewerage facilities are not across all municipalities.

70. Location, gender and caste/ethnicity based differences exist in the access to municipal services.

71. Citizens participation in municipality's decisions is minimal. Ward Citizen's Forums and Public hearings were forums where citizens participated in municipal processes but municipalities had not consulted with citizens before making decisions which impacted their lives; e.g. for tariff settings, use of urban land for parks.

72. Situation of Dalits in rural areas and of people in Jhalari-Pipladi is worse compared to others. Across all indicators these social groups and this municipality came out worse than the others indicating the need for specific interventions in order to address their specific needs.

73. Prevalent social practices and gender relations constrain women's development and participation and require interventions with men and advantaged group for shifts in women's empowerment and for gender equality. Women's empowerment and gender equality issues need to be identified and addressed specifically by each municipality e.g. the needs of women for travel and movement in the municipality are different to those of men. When going for agriculture, fuel and fodder collection they do not need to travel on roads or take buses especially as a large majority do not go to workplaces for work.

2.9.2 Recommendations

74. The recommendations for mainstreaming GESI in the project include assessment using participatory methods with gender/caste/ethnicity/income and location-differentiated needs and interests for each sub-sector. It is important to ensure consultation with women, poor and the excluded using appropriate methodology and language, timing and location so that they are able to contribute their ideas and requirements for each scheme and embedding GESI in the municipality functions, structure and processes (refer Annex 2-E for the GESI Framework which presents the recommendations).

3 Project Rationale – Need and Demand

[Note: This section to be read in conjunction with Discussion Note No.3 - Project Rationale and Component Selection].

3.1 Country Strategy

3.1.1 Nepal Government National Strategy

75. The government's strategic Three-Year Plan (FY2014–FY2016) targets high and inclusive economic growth. This growth is to be achieved through higher capital investment, mostly in energy and transport infrastructure, urban services, agriculture, and tourism. Access and inclusion are to be pursued through investments in health, education, and skills. Support for gender equality and reducing regional disparities are very high priorities. The strategic plan also calls for structural reforms to encourage private sector investment. Governance, public financial management (PFM), and environmental sustainability are given prominence under the plan.

76. The Three Year Plan provides guidance on water, sanitation, and urban development, highlighting the need to address the effects of rapid urbanization on basic urban services, water quality, sanitation, environment, and system maintenance. It proposes the full integration of sewerage, on-site sanitation, and solid waste management in all urban schemes and specifically endorses cost recovery from consumers.

3.1.2 ADB Country Strategy

77. Under the CPS[2], ADB will support the government's development objective of accelerated, sustainable, inclusive economic growth. In line with its inclusive growth framework, ADB will pursue faster growth in economic opportunities through investments in infrastructure. Mainstreaming GESI and supporting GESI reforms will also improve access to basic services. Regional cooperation and integration (RCI) work will be emphasized through investments anchored on the South Asia Subregional Economic Cooperation (SASEC) program.

78. During the CPS (2013–2017), ADB will continue to support (i) improving inclusive urban infrastructure development, including water supply, sanitation, and wastewater treatment; (ii) improving gender and socially inclusive access to and service levels of water supply and sanitation in secondary and small towns; and (iii) institutional strengthening and capacity building of local governments, service providers, public agencies, and the Town Development Fund. The principles of cost recovery and rational tariffs, asset management, effective decentralization, and devolution will be followed to ensure operational and financial sustainability of these institutions.

79. Urban development will be supported in a more strategic and focused manner by prioritizing projects that are in towns that have the greatest potential for economic growth and impact on peripheral semi-urban areas. ADB will promote projects to incorporate adequate adaptation and mitigation measures for risks related to earthquakes, landslides, floods, and climate change.

[2] ADB. 2013 Country Partnership Strategy: Nepal (2013-2017)

3.1.3 Consistency with ADB's Country Partnership Strategy

80. The Project, in line with ADB's water and urban operational plans, will (a) improve urban services in the 4 project municipalities through investments and institutional strengthening; and (b) boost economic development through integrated planning, institutional support and strategic investments in economic infrastructure with wider economic benefits for the FWRN. **Table 3-1** illustrates the focus of the CPS in relation to the improvement of urban infrastructure and services.

Table 3-1: CPS Plans in relation to Urban Infrastructure and Services

CPS Area of support	How the project supports CPS
Primary focus	
(i) Inclusive and sustainable economic growth.	(i) Includes poor urban communities as well a strategic recommendations for economic development.
(ii) Catalyzing private investment and enhancing the effectiveness of public investment.	(ii) Proposes PPP for waste management and private sector to invest in tourism and urban development schemes.
(iii) Human resource and knowledge development.	(iii) Capacity building and skills training in urban service provision and management.
The crosscutting themes	
(i) environment and climate change	(i) Improving solid and liquid waste management. Application of CDM. Reducing risks of urban flooding.
(ii) gender	(ii) Promotion of gender equality and social inclusion (GESI)
(iii) governance	(iii) Management capacity building for local government
(iv) regional cooperation	(iv) Promotion of FWRN trade and tourism with India.

3.1.4 Consistency with National Urban Policies

81. National Urban Development Strategy (NUDS) 2014 prepared by MOUD has adopted a 15 year national vision on Balance and Prosperous National Urban Centres. By this it means to incorporate i) achievement of set milestones regarding physical and institutional development; and ii) enhancement in the quality of urban living through the improvement of urban environment, provision and quality of infrastructural, economic and social services. The project will facilitate economic and urban development in FWRN in line with government's strategic Three-Year Plan and the NUDS; this is presented in **Table 3-2**.

Table 3-2: How the Project Supports National Urban Strategies

Three Year Plan (2013-2017)	How the project supports National Urban Strategies
Primary focus	
(i) Infrastructure: Energy, Transport and Urban Services	The project will improve water supply, wastewater management, and urban transport facilities in urban centers. The project aims to improve municipal road networks to increase connectivity, provide greater access to basic services and markets, and promote tourism and trade. The project supports cross-border connectivity. The project will include strategic recommendations for economic development plus capacity building and skills training in urban service provision and management.
(ii) Tourism	The project vision seeks to create conditions for private sector investment. It will provide opportunities for the young entering the labor market.

Three Year Plan (2013-2017)	How the project supports National Urban Strategies
(iii) Social Services and Social Protection	The project includes gender actions to improve equality. Other activities will focus on improving the indicators in areas under the Millennium Development Goals.
(iv) Governance and Public Financial Management	The project will include improvements in public finance management (PFM) related to public procurement, results-based management, and corruption prevention and control. The project will encourage private sector investment and public–private partnerships.
The crosscutting themes	
(i) Environment	The project addresses climate change adaptation and mitigation and overall environmental protection. Specifically, improving solid and liquid waste management, application of clean development mechanism and reducing risks of urban flooding.
(ii) Gender	The project attaches high priority to pursuing gender equality and social inclusion (GESI).

3.2 Urban Governance – Asian Perspective

3.2.1 ADB Initiatives

82. Cities are the engines of national economic development. The ability of cities to bring together knowledge, assets and global opportunities guide the people towards innovation and investments that propel the long term economic prosperity.

83. ADB under its Urban Operation Plan (2012-2020)[3] emphasizes the application of an urban framework to support the sustainable development of Asian cities. The plan fosters Competitive, Inclusive, and Green Cities to improve the performance of cities on the Economic, Equity, and Environment (3Es) fronts.

84. Considering the above, ADB introduced a new planning process – "City Cluster Economic Development" (CCED). “The goals of CCED are to create an enabling business environment in urban regions and stimulate industrial growth and thus ultimately increase jobs and income opportunities for poverty reduction.”

85. Thus in order to make our cities competitive to play its role of engine efficiently it is necessary to strengthen the three foundations of: (i) Planning (ii) Resource Management and (iii) Institutional and Regulatory Arrangements within its urban region. The four municipalities under the Project due to their proximity to each other and of similar characteristics and in the same corridor are therefore considered suitable for City Cluster Economic Development.

3.2.2 Competitiveness of FWRN

86. Undoubtedly, Nepal is a gifted country and the Terai plains in which the project towns are located represent the Bread Basket of Nepal. The Far Western region, while among the most backward regions of Nepal, is also one of the most virgin and unexplored territories of Nepal. The challenge and opportunity for this region is to get on a path to accelerated

[3] Draft Instruction Manual for consultants preparing Collaborative Governance Index (CGI) studies for City-Regions, ADB Project 7918.

human development whilst retaining its beautiful and un-spoilt nature; whilst retaining its pristine rivers, water bodies, wild life and tribal culture.

87. In the near term, two sectors naturally present themselves as focus areas for economic development of the region: A - Tourism; and B - Agriculture and forestry related – agro forestry, commercial forestry, etc. Both these sectors will have to be supported by a strong infrastructure sector investment program viz., Power, Roads, Urban Infrastructure, etc., all of which would also contribute to additional economic activity in their own right.

3.2.3 Consistency with Local Needs and Demands

Municipal Priorities

88. During meetings and site visits with senior officers and staff of the 4 project municipalities, a number of problem issues were identified and discussed. **Table 3-3** lists the issues identified in general order of priority.

Table 3-3: Municipal Priorities for Urban Infrastructure

Priority	Description	Issues / Scope
1	Municipal Roads	Many roads in the municipal areas require developing or rehabilitation to improve access for public transport and solid waste collection.
2	Solid Waste Management	Development of proper scientific waste disposal sites to include a) site access road; b) compost plant; c) equipment for spreading and compacting reject waste; d) staff training; and e) collection equipment and public awareness for 3R's (reduce, re-cycle and re-use).
3	Surface Water Drainage	Improvement of drainage channels and river training to reduce risk of flooding and damage to property.
4	Wastewater Management	Prevention of wastewater entering the open environment. Options include improved use of existing on-site disposal including the development of septage (septic tank sludge) treatment facilities and community awareness for better maintenance and/or introduction of sewerage (small-bore or conventional)
5	Public / Municipal Facilities	Improved and additional public facilities (i.e. toilets / washrooms), bus/vehicle parking and municipal offices (2 municipalities).
6	Water Supply	Some municipal areas are deficient in a supply of safe drinking water. Requires the development of local / community water supply schemes.

Business Priorities

89. A business survey was undertaken in the four project towns. These included questions about how municipal infrastructure affected their business and what they considered were the priority for improvement. The responses are shown in **Table 3-4**.

Table 3-4: Business Priorities for Urban Infrastructure

Business/ Priority	1	2	3	4
1. Hotel (33)	Roads & Drains	Sewerage	Street lighting	SWM
2. Industry (41)	Sewerage	Roads & Drains	Street lighting	SWM
3. Markets (220)	Roads & Drains	Sewerage	Street lighting	SWM
4. Restaurants (79)	Roads & Drains	Sewerage	SWM	Water supply

Note: Parenthesis indicates number of businesses interviewed. Source: TA 8817-NEP Business survey.

Community Needs

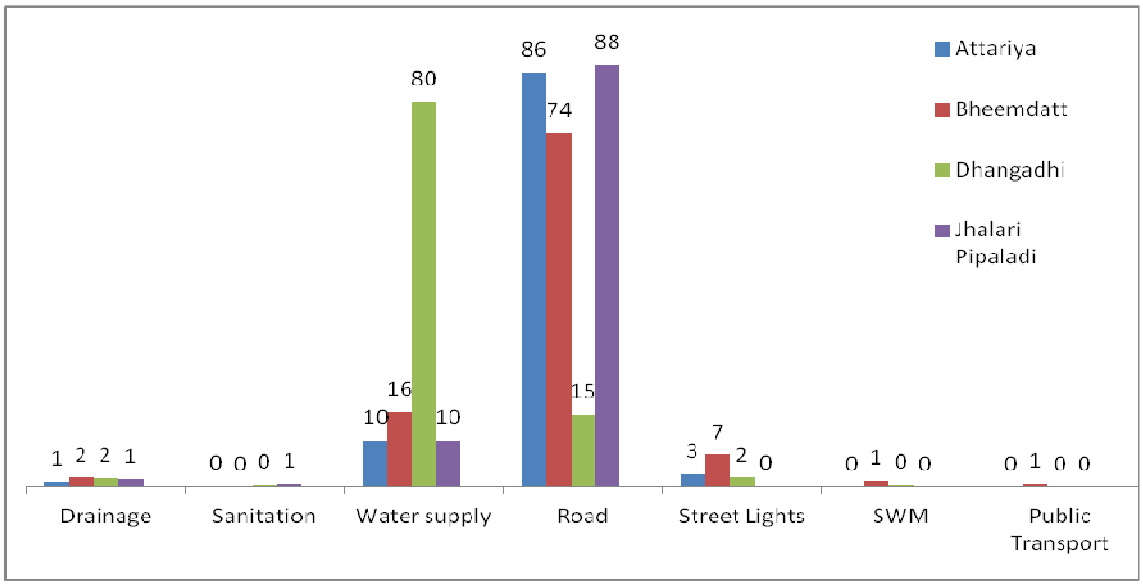
90. A socio-economic household survey covering 5% of the total population of the municipalities was undertaken as part of the project preparation. Households were asked, from a list of 12 different municipal services, which they thought was the most important urban infrastructure in need of improvement. The results are indicated in **Table 3-5** and **Figure 3-1**. .

Table 3-5: Community Priorities for Urban Infrastructure

Rank	All Municipalities	Attariya	Bheemdatt	Dhangadhi	Jhalari-Pipaladi
1st	Road	Road	Road	Water Supply	Roads
2nd	Water Supply	Water Supply	Water Supply	Roads	Water Supply
3rd	Street Lighting	Street Lights	Street Lights	Drainage	Drainage
4th	Drainage	Drainage	Drainage	Street Lights	Street Lights
5th	SWM	Sanitation	SWM	SWM	Sanitation

Source: TA 8817-NEP. HH survey, 2015

Figure 3-1: Community Priority Demand for Municipal Infrastructure (%)



Source: TA 8817-NEP. HH survey, 2015

91. The results clearly demonstrate that the priority municipal infrastructure identified by local communities was for water supply in Dhangadhi and roads in the other 3 municipalities. It is interesting that street lighting was generally considered more important than drainage, solid waste management or sanitation. Also, there was little difference in priority demands between urban and rural communities of the municipalities.

92. The reasoning behind these results is probably because households presently consider roads, water supply and street lighting as public services while issues of SWM and sanitation are still largely the responsibility of the individual householder.

93. The Design and Monitoring Framework (DMF) for the proposed project is given in **Attachment 1**, followed by a Problem Tree for FWR municipalities in **Attachment 2**.

4 Municipal Urban Infrastructure

[Note: This section to be read in conjunction with DN No.4 – Municipal Urban Infrastructure].

4.1 Attariya

4.1.1 Existing Status of Urban Infrastructure

Water Supply

94. There are two water supply systems in Attariya operated by a Water Supply User Committee (WSUC). Each uses deep wells for supplying water. Of 13,745 households, in Attariya the WSUC provides safe drinking water to 2,000 household consumers of Ward No.4 and part of Ward Nos. 3 and 13, plus to 200 consumers of Ward No.2 at Malakheti. Many individual households rely on shallow tube wells and hand pumps all of which can easily be susceptible to contamination.

Sanitation and Wastewater

95. The majority of premises in the core city areas of the municipality have septic tanks with soak pits. In many cases the soak pit does not work, or is not constructed, and the septic tank overflows into the surface water road drainage network resulting in a public health risk.

96. There is no municipal service offered for removing septage (septic sludge) from the septic tanks when they get full. Usually, households will contact a local contractor who will arrange to empty the tank manually. The collected septage is usually disposed of in open spaces or sold to local farmers untreated as fertilizer.

Solid Waste Management

97. As a newly created municipality, no field studies on solid waste generation and composition have been carried out. For preliminary planning purposes, the average per capita MSW generation is considered as 0.32 kg/day, which is equal to average national MSW generation rate. This per-capita waste generation rate and projected population for 2015, the total MSW generation from Attariya Municipality is estimated to be 26 tonnes/day.

98. There is no municipality organized household waste collection system in the town. However, waste is collected in the commercial area along the main highways arranged by a business committee, which also collects waste from local houses by charging a small fee.

99. There is no formal recycling practice in the Municipality, however, reusable and recyclable fraction of MSW is collected and sorted by waste pickers who transport it to India for sale. The rejected portion of collected waste is taken by tractor-trailer and dumped in open spaces, forest land or on the river bank.

Urban Roads and Surface Water Drainage

100. There are about 285km roads (black topped, gravel and earthen road) including the East-West Highway (H-01) and Mahakali Highway (H-14) in Attariya Municipality. Beside the main highways less than 10km municipal road are reported as blacktopped. All the remaining urban roads are either gravel or earthen surfaced. Road access is a major problem in this new municipality. Due to lack of proper drainage and regular maintenance, most of the roads in Attariya Municipality are in a poor condition and many are not accessible throughout the year and need to be improved or upgraded.

Urban Development Facilities

101. Because the municipality has only recently been formed, the town lacks a comprehensive plan to direct urban development. Equally, many civic buildings and facilities normally required for a municipality to properly function, or would be expected by its citizens, are missing.

4.1.2 Urban Infrastructure Interventions

Water Supply

102. Based on the regional economic vision and conceptual urban plan, field assessment and consultation with municipal officials and other stakeholders, a water supply scheme is proposed to serve the major areas not covered by the existing system. The priority areas with a high population density are Wards 5, 6 and 7. For O&M of this new scheme a similar arrangement to the present with a WSUC could be used.

Sanitation and Wastewater

103. With the present relatively low population density in the municipality, to reduce the public health risk due to the poor operation of on-site wastewater management, the installation of small-bore sewerage could be considered in the main commercial and high density residential areas. This system could collect the overflow from septic tanks which would be connected to a decentralized effluent treatment (DEWATS) plant.

104. With this option, on-site wastewater management improvements would also be required since property septic tanks would still be utilized. The main investment cost for this component would be the provision of a septage treatment plant. An anaerobic digestion technology is suggested, which generates biogas as well as produces hygienic quality compost fertilizer. This could be included as part of a bio-degradable component for solid waste management improvements. Other costs would include the provision of sludge vacuum tankers, although these could be provided by the private sector, as is present practice, and the service paid for by the property owner. Operation of the septage treatment plant could be assisted by the sale of compost fertilizer and utilization of biogas.

105. Where applicable, the cost of operation and maintenance of the small-bore sewerage system and DEWATS could be incorporated into the water supply billing system.

Solid Waste Management

106. The ultimate is a ‘zero waste’ target. This should be achieved through practicing the concept of reduce, reuse and recycle. As a newly created municipality, the focus is on waste prevention (preventing the generation and minimizing the waste that is being generated) as a first priority.

107. Household and commercial wastes should be simply segregated into two waste streams; bio-degradable (‘wet’ - e.g. kitchen waste) and non-biodegradable (‘dry’ – e.g. packaging). This simplifies waste collection, processing and disposal.

108. Integrated Waste Processing Sites (IWPS) incorporating the treatment of septage (see above) could be developed. These do not necessarily have to be in one location. Small IWPS could be scattered around the municipality depending of waste sources plus environmental and social acceptability.

109. These sites could employ existing community level 'rag-pickers' to organise and process the two waste streams. The bio-degradable portion going to composting and the non-bio-degradable segregated into paper, plastics, glass etc. for recovery and re-cycling. Only the by-products (reject waste) would be transferred to the final disposal (engineered landfill) site.

110. It is expected that the fully functional requirements for integrated solid waste management (ISWM) system may be difficult to implement in the project municipalities during the first phase of the project. Gradual improvement in waste management with associated public awareness and education is suggested for the planned transformation from open dumps to sanitary landfills.

111. As a small new municipality there is the opportunity for a sub-regional shared landfill site to be developed by both Dhangadhi and Attariya municipalities. A possible identified site is an abandoned channel of Godawari river located in Attariya Municipality, less than 2km south from East-West highway. However, it is noted that, the technical and financial viability for shared landfill site for two or more regional municipalities as well as institutional / financial mechanism for operational arrangement have to be carefully examined during detail design.

Urban Roads and Surface Water Drainage

112. Based on regional economic vision and conceptual urban plan, a newly developed Municipal Transport Master Plan (MTMP), field assessment and stakeholder's consultation meetings, a total of nearly 21km high importance municipal road has been identified to upgrade and improve within this project.

113. Out of this 21km, the Hasanpur-Syaule Road of 11km length is strategically important to both Attariya and Dhangadhi Municipalities. It is also regionally important because it will be an alternative route between Dhangadhi and Attariya parallel to the Mahakali Highway and could provide alternative access to Dhangadhi regional airport located between the two roads. This road not only functions as alternative of Dhangadhi-Attariya highway but also directs future urban development along the North-South corridor in both Attariya and Dhangadhi Municipalities.

Urban Development Facilities

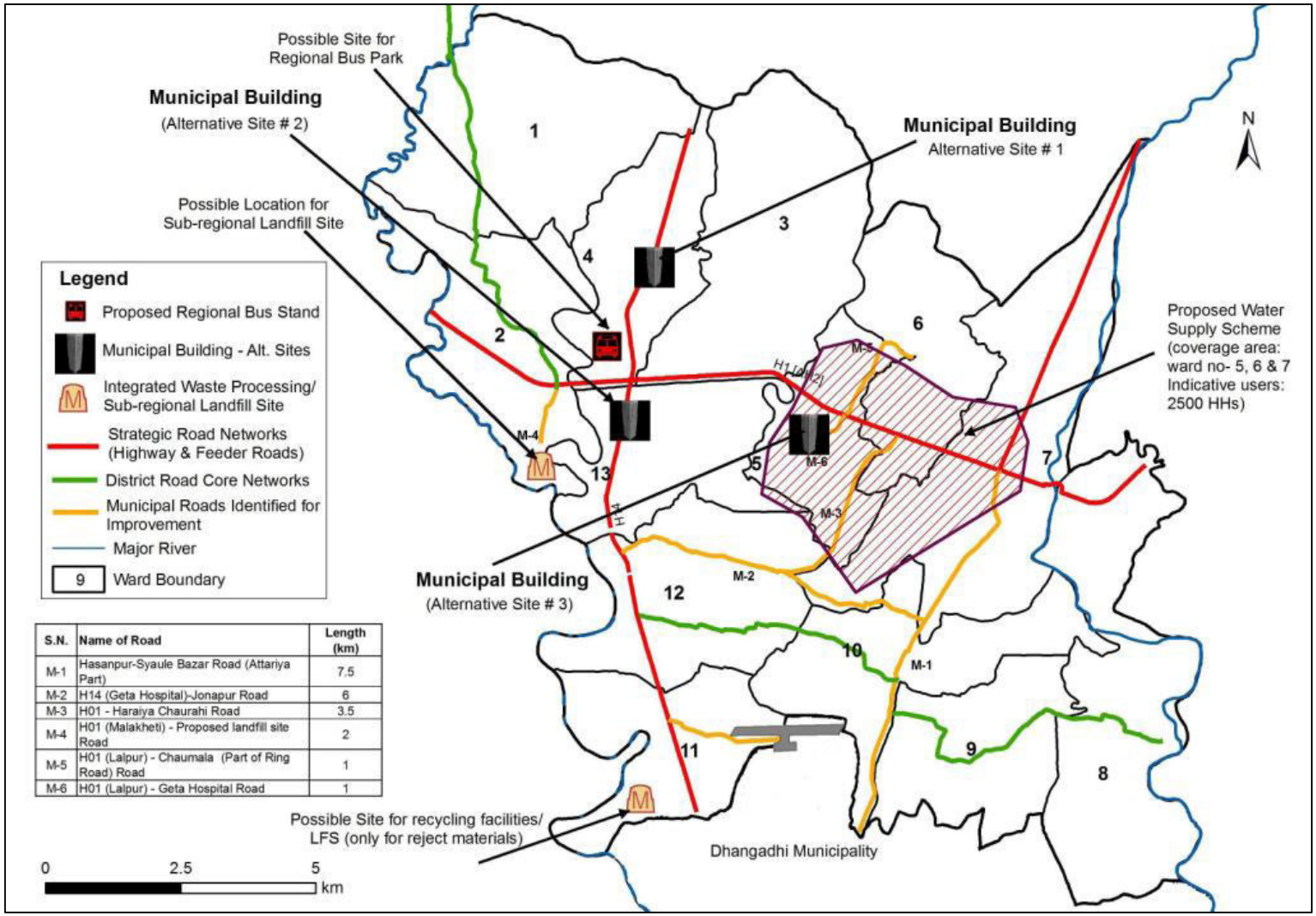
114. As a recently formed municipality, the town requires a number of important civic buildings and facilities. These include: a) Municipal Building; and b) Regional Bus Park. A number of alternative sites have been identified for the Municipal Office building. Similarly, the existing bus park has been proposed to be upgraded into a regional bus park.

115. However, these should only be developed once a comprehensive urban development strategic plan has been prepared. Besides indicating growth areas for housing, commercial, industry, recreation, etc. it should also indicate suitable locations for other civic amenities such as water supply schemes, waste management, treatment and disposal sites, etc.

Community Infrastructure

116. The proposed project will include an allocation for assisting poor and marginalized households to be provided with basic municipal infrastructure, such as, a safe water supply, sanitation, drainage and access. The exact interventions will be identified during detail design in association with the disadvantaged households and communities.

Figure 4-1: Attariya – Identified Priority Municipal Urban Infrastructure



S.N.	Name of Road	Length (km)
M-1	Hasanpur-Syaule Bazar Road (Attariya Part)	7.5
M-2	H14 (Geta Hospital)-Jonapur Road	6
M-3	H01 - Haraiya Chaurahi Road	3.5
M-4	H01 (Malakheti) - Proposed landfill site Road	2
M-5	H01 (Lalpur) - Chaumala (Part of Ring Road) Road	1
M-6	H01 (Lalpur) - Geta Hospital Road	1

4.2 Bheemdatt

4.2.1 Existing Status of Urban Infrastructure

Water Supply

117. Of 20,684 households, 28% of the households has access to a piped water supply system. NWSC and three different water supply user committees (WSUC) are providing safe drinking water to 5,963 household consumers. However, some of the water supply systems have problems due to a high content of dissolved lime which blocks pipes and meters. Other households rely on shallow tube wells, dug wells and springs all of which can easily be susceptible to contamination.

Sanitation and Wastewater

118. The majority of premises in the denser areas of the municipality have toilets connected to septic tanks with soak pits. There is no sewerage and no municipal service offered for removing septage (septic sludge) from the septic tanks when they get full. Households have to contact a local contractor who will arrange to empty the tank manually or with a vacuum tanker. Frequently, the septic tanks are not properly maintained or are under capacity. In many cases the soak pit does not work, or is not constructed, and the septic tank overflows into the surface water road drainage network resulting in a public health risk.

Solid Waste Management

119. The average per capita municipal solid waste (MSW) generation is 0.215 kg/day. With this per-capita waste generation rates and projected population for the year 2015, the total MSW generation from Bheemdatt Municipality is estimated to be 25 tonnes/day.

120. Household and commercial waste is placed either on the roadside in front of the owner's property or put directly into the municipal tractor-trailer when the municipality comes for collection. This service is limited to main roads stretching about 1km from the city centre. The current waste collection rate in the municipality is only 22%.

121. There are 2No. tractor-trailers and 9No. rickshaws used to collect, transport and finally dump the waste in an open urban forest area near the municipal office. There is no formal recycling in Bheemdatt Municipality. However, waste pickers collect reusable and recyclable materials from the households like paper and paper product, plastic, metals, glass bottles, which are then sold and transported to Nepalgunj or India.

122. There is no separate system in the municipality for collecting and managing medical waste or any other type of special waste. Hospital waste, industrial waste, construction and demolition waste are mixed and discarded with municipal waste.

Urban Roads and Surface Water Drainage

123. Based on analysis of the GIS map of Bheemdatt Municipality, there 966km of roads including Strategic Road Networks (SRNs), District Road Core Networks (DRCNs) and municipal earthen track/trails. 26% (254km) are gravel roads and only 4% (40km) of roads are blacktopped including the East-West highway. The majority of roads in the municipality (70%) are earthen surface tracks/trails. Access to settlements within the municipal limits outside the city core is very poor.

124. Although the core city is developed in a planned manner with a grid pattern of roads, most of these road/lanes are in a poor state due to lack of regular maintenance and lack of effective drainage. The capacity of the existing drains is not adequate and are often filled with garbage and silt.

125. Lack of vehicular bridge across the Mahakali river is the main cause for the lack of development in the region, and especially Bheemdatt. However, DOR has identified the line for a new bridge over the Mahakali River, which is reported to be about 1.5km downstream from existing crossing over the Sharada barrage.

126. Rivers originating from the Chure, a northern area of the municipality, only flow during heavy intense rainfall causing flash floods which often inundate the city. In addition, flooding from the Mahakali canal and its tributaries also overflow during the monsoon which also floods the city and surrounding agricultural land.

Urban Development Facilities

127. Bheemdatt presently lacks a number of important civic amenities. In addition, the Far-west Region (FWR) has great potential to attract many types of tourist. When access across the Mahakali River is improved, Bheemdatt would be an international gateway.

4.2.2 Urban Infrastructure Interventions

Water Supply

128. Less than 30% of the Bheemdatt municipal population have access to a piped water supply. Based on the regional economic development vision and conceptual urban development plan, field assessment, household survey and stakeholder's consultation meetings, it is thus proposed that the project could allocate funds for a scheme with a base population of 10,000 (2,000 households) (year 2015) of ward no. 5, 8, 10, 11 and 17 and a design population of 21,000 (3,350 households) by year 2030.

129. Due to the high lime content in groundwater in some area it is essential that proper hydrological and well testing studies is undertaken in advance. An existing example of a good provision of ground water is in Bheemdatt Ward No.9, Bhramahadev bazaar. This is close to the Mahakali River, a perennial water source.

Sanitation and Wastewater

130. A detail study is required to determine the appropriate solution to improve the poor wastewater management within the municipality and a phased wastewater management plan prepared. The ideal location for sewage treatment and disposal is downstream of the city; i.e. towards the Chaudara Nadi. However, due to the Shuklaphanta Wildlife Reserve there may be restrictions on discharge of treated sewage (both in quality and quantity) into any watercourse in close proximity to the reserve. In addition, the reserve's buffer zone may also restrict the construction of a sewage treatment plant (STP).

131. It is therefore anticipated that the most economic solution might be the installation of small-bore sewerage for the main commercial and high density residential areas. This system would collect the overflow from septic tanks which would be connected to a decentralized effluent treatment (DEWATS) plant.

132. With this option, on-site wastewater management improvements would also be required since property septic tanks would still be utilized. The main investment cost for this component would be the provision of a septage treatment plant. An anaerobic digestion

technology is suggested, which generates biogas as well as produces hygienic quality compost fertilizer. In case of septage sludge treatment, anaerobic digestion technology also seems better socially and environmentally acceptable option than aerobic composting technology based on past experiences from municipalities of Nepal. Even if biogas is not utilized fully, at least a quality compost product is produced. This could be included as part of a bio-degradable component for solid waste management improvements.

133. Other costs would include the provision of sludge vacuum tankers, although these could be provided by the private sector, as is present practice, and the service paid for by the property owner. Operation of the septage treatment plant could be assisted by the sale of compost fertilizer and utilization of biogas.

134. Where applicable, the cost of operation and maintenance of the small-bore sewerage system and DEWATS could be incorporated into the water supply billing system.

135. Conventional sewerage will only operate if there is a regular 24-hour water supply system that provides an excess of 100 lcpd (litres-per-head-per-day) plus a guaranteed power supply and skilled maintenance staff.

Solid Waste Management

136. The ultimate is a 'zero waste' target. This should be achieved through practicing the concept of reduce, reuse and recycle. The focus is on waste prevention (preventing the generation and minimizing the waste that is being generated) as a first priority.

137. Household and commercial wastes should be simply segregated into two waste streams; bio-degradable ('wet' e.g. kitchen waste) and non-biodegradable ('dry' e.g. packaging). This simplifies waste collection, processing and disposal.

138. Integrated Waste Processing Sites (IWPS) incorporating the treatment of septage (see above) could be developed. These do not necessarily have to be in one location. Small IWPS could be scattered around the municipality depending of waste sources plus environmental and social acceptability.

139. These sites could employ existing community level 'rag-pickers' to organise and process the two waste streams. The bio-degradable portion going to composting and the non-bio-degradable segregated into paper, plastics, glass etc. for recovery and re-cycling. Only the by-products (reject waste) would be transferred to the final disposal (engineered landfill) site.

140. It is expected that the fully functional requirements for integrated solid waste management (ISWM) system may be difficult to implement in the project municipalities during the first phase of the project. Gradual improvement in waste management with associated public awareness, education and enforcement of laws is suggested for the planned transformation from open dumps to sanitary landfills.

141. Based on preliminary field visit and stakeholder's consultation meetings, a number of locations have been identified for waste sorting / processing sites and landfill site to be developed by Bheemdatt Municipality. Among them, the Ghadighach area, located at ward no. 8 of Bheemdatt, which is about 8 km north from East-West highway would be a appropriate site to be developed as final waste disposal site for many years.

Urban Roads and Surface Water Drainage

142. Nearly 90km urban roads including a 41km municipality ring road were identified as important urban roads in the municipal periodic plan, which need to be improved and upgraded as per urban road standards (two lane road 7.5 m to 10 m pavement width) with storm water drainage and footpaths on each side of the road.

143. However based on the regional economic development vision and conceptual urban development plan, plus meetings with municipal officials and the stakeholders 36.5km of priority roads were selected for possible inclusion in the project. In addition, about 5km storm water drainage in the core city area needs to be developed to drain out monsoon floodwater. The length is only indicative and subject to further analysis.

Urban Development Facilities

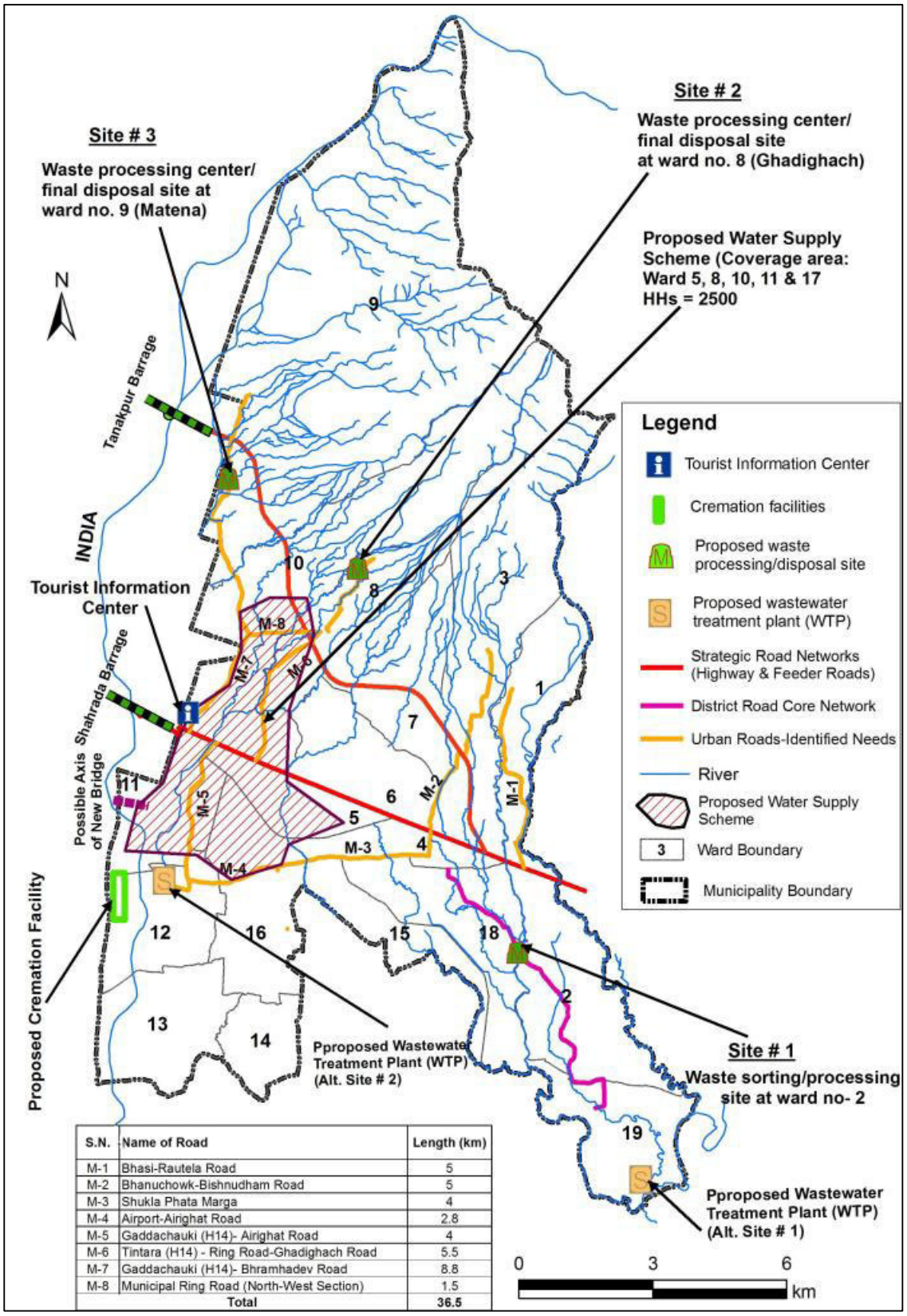
144. To meet future tourism demands the Tourism Board under Ministry of Tourism and Culture or the FWR Tourism Development Society should establish a tourist information centre. As the Tourism Board has already established small facilities in the Gaddachauki (a border point located at East-West Highway), the same location would be used for further improvements/development of Tourist Information Center along with other minimum required urban facilities.

145. In addition, to satisfy the needs of an expanding town and population, Bheemdatt requires the development of a Cremation Facility on the banks of the Mahakali River.

Community Infrastructure

146. The proposed project will include an allocation for assisting poor and marginalized households to be provided with basic municipal infrastructure, such as, a safe water supply, sanitation, drainage and access. The exact interventions will be identified during detail design in association with the disadvantaged households and communities.

Figure 4-2: Bheemdatt – Identified Priority Municipal Urban Infrastructure



S.N.	Name of Road	Length (km)
M-1	Bhasi-Rautela Road	5
M-2	Bhanuchowk-Bishnudham Road	5
M-3	Shukla Phata Marga	4
M-4	Airport-Airighat Road	2.8
M-5	Gaddachauki (H14)- Airighat Road	4
M-6	Tintara (H14) - Ring Road-Ghadighach Road	5.5
M-7	Gaddachauki (H14)- Bhramhadev Road	8.8
M-8	Municipal Ring Road (North-West Section)	1.5
	Total	36.5

4.3 Dhangadhi

4.3.1 Existing Status of Urban Infrastructure

Water Supply

147. Of a total 21,030 households, approximately 30% of the households within the municipal area has access to a piped water supply system. Of those, 4,300 households in the core city area of the town; (i.e. parts of ward 1, 2, 3, 4 and 5) are supplied with piped water by Nepal Water Supply Corporation (NWSC). A further 2,190 HHs (ward 8 and part of wards 1, 5 and 7) are served by the recently constructed Shivanagar water supply project provided by a Water Supply Users Committee (WSUC).

148. The majority of households, which are generally rural, rely on shallow tube wells, dug wells and springs. The shallow tube wells extract water from the top layer aquifer which is susceptible to contamination.

Sanitation and Wastewater

149. Existing sanitation facilities are generally quite basic in the rural areas of Dhangadhi Municipality. Although the municipality has imposed mandatory provision to construct toilets with septic tank and soak pit in each house, some of the poorer households still only have simple pit latrines while 23% of households still do not have their own toilet facilities.

150. There is no municipal sewerage or service offered for removing septage (septic sludge) from the septic tanks. Usually, households will contact a local contractor who will arrange to empty the tank manually or by vacuum tanker.

Solid Waste Management

151. The average household and municipal solid waste (MSW) generation in Dhangadhi were reported to be 0.14 and 0.28 kg/capita/day. With these per-capita waste generation rates and projected population for the year 2015, the total MSW generation from Dhangadhi Municipality is estimated at 31 tons/day.

152. The municipality has scheduled waste collection two times every day in the main city street. The current waste collection rate is only 42%. All waste is collected in municipality trucks which is finally dumped on the bank of nearby Kailali nala, about 300m from the municipal office. Recently, the municipality purchased land about 2km south of the city centre for establishing a waste sorting / processing centre and transfer station.

153. There is no official waste segregation in the Municipality. But recyclable wastes are sold to the waste pickers who collect fractions like paper and paper product, plastic, metals, glass bottles. In exchange they often give food items for the waste. The waste pickers sort the wastes which are sold and transported either to India or to Nepalgunj.

154. The Municipality does not have any system for collecting and managing medical waste or any other type of special waste separately. Medical waste from these establishments is dumped along with regular municipal waste.

Urban Roads and Surface Water Drainage

155. There are 561km of roads (black topped, gravel road and earthen surface/track) including Mahakali Highway and Postal Road in Dhangadhi Municipality. Besides the 13km of main highway, about 20% (113km) municipal roads are reported as blacktopped. All the remaining roads are either gravel or earthen surfaced.

156. Due to lack of effective drainage and regular maintenance, many of the roads/lanes in Dhangadhi Municipality are in a poor condition. In addition, many settlements within the municipality boundary do not have adequate road access.

157. There is very little effective surface water drainage in the municipality besides a small number of natural water courses and along the main road market area. Dhangadhi Municipality reportedly has a total of 14.5km storm water drains. Further, a few hundred meters of storm water drain is being constructed by DUDBC. The capacity of existing drains which have been built without any proper design or gradient, are not adequate and many open drains are filled with garbage, silt and often inoperational due to lack of maintenance.

4.3.2 Urban Infrastructure Interventions

Water Supply

158. Of the municipal households, only 30% have access to a piped water supply. A water supply scheme in the north part of Municipality is presently being planned which covers mainly Jali Gaon, ward no. 6. In addition, NWSC has also planned to expand its distribution system within its current coverage area.

159. Based on the regional economic vision and conceptual urban plan, field assessment and consultation with municipal officials and other stakeholders, a water supply scheme is proposed under the project to serve a design population of 21,000 (3,350 households) by year 2030 in ward No.12 and part of ward No.11. This new scheme could have a similar arrangement to the recent Shivanagar scheme with a WSUC.

Sanitation and Wastewater

160. A detail study is required to determine the appropriate solution to improve the poor wastewater management within the municipality with a phased wastewater management plan prepared using appropriate technology by utilizing and upgrading the existing system.

161. It is anticipated that the most economic solution might be the installation of small-bore sewerage for the main commercial and high density residential areas. This system would collect the overflow from septic tanks which would be connected to a decentralized effluent treatment (DEWATS) plant.

162. A suitable site for a DEWATS to serve the present main urban area has been identified due south of the Tribeni Chok, near the Mohama River. An area of approximately 10Ha should be acquired for the DEWATS as a priority.

163. With this option, on-site wastewater management improvements would also be required since property septic tanks would still be utilized. The main investment cost for this component would be the provision of a septage treatment plant. For septage sludge treatment, anaerobic digestion technology is the most socially and environmentally acceptable option based on past experiences from the municipalities of Nepal. Even if biogas is not utilized fully, at least a quality compost product would be produced. This could be included as part of a bio-degradable component for solid waste management improvements.

164. Other costs would include the provision of sludge vacuum tankers, although these could be provided by the private sector, as is present practice, and the service paid for by the property owner. Operation of the septage treatment plant could be assisted by the sale of compost fertilizer and utilization of biogas.

165. Where applicable, the cost of operation and maintenance of the small-bore sewerage system and DEWATS could be incorporated into the water supply billing system.

166. Conventional sewerage will only operate if there is a regular 24-hour water supply system that provides an excess of 100 lcpd (litres-per-head-per-day) plus a guaranteed power supply and skilled maintenance staff.

Solid Waste Management

167. The ultimate is a 'zero waste' target. This should be achieved through practicing the concept of reduce, reuse and recycle. The focus is on waste prevention (preventing the generation and minimizing the waste that is being generated) as a first priority.

168. Household and commercial wastes should be simply segregated into two waste streams; bio-degradable ('wet' e.g. kitchen waste) and non-biodegradable ('dry' e.g. packaging). This simplifies waste collection, processing and disposal.

169. Integrated Waste Processing Sites (IWPS) incorporating the treatment of septage (see above) could be developed. These do not necessarily have to be in one location. Small IWPS could be scattered around the municipality depending of waste sources plus environmental and social acceptability.

170. These sites could employ existing community level 'rag-pickers' to organise and process the two waste streams. The bio-degradable portion going to composting and the non-bio-degradable segregated into paper, plastics, glass etc. for recovery and re-cycling. Only the by-products (reject waste) would be transferred to the final disposal (engineered landfill) site.

171. It is expected that the fully functional requirements for integrated solid waste management (ISWM) system may be difficult to implement in the project municipalities during the first phase of the project. Gradual improvement in waste management with associated public awareness and education is suggested for the planned transformation from open dumps to sanitary landfills.

172. Dhangadhi municipality has suggested various sites within the municipality for a waste disposal site, however, based on regional economic development vision and conceptual urban development plan, preliminary field visit and stakeholder's consultation meetings, there is also the opportunity for a sub-regional shared landfill site to be developed by both Dhangadhi and Attariya municipalities. The site is an abandoned channel of Godawari river located in Attariya Municipality, less than 2 km south from East-West highway. However, it is noted that, the technical and financial viability for shared landfill site for two or more regional municipalities as well as institutional / financial mechanism for operational arrangement have to be carefully examined during detail design.

Urban Roads and Surface Water Drainage

173. Through stakeholder's consultation and field assessment, a total of nearly 70km of urban roads were considered as high importance urban networks in the municipality. Other than the main highways none have been constructed to required urban road standards. All are in need improvement and upgrading.

174. However, based on the regional economic development vision and conceptual urban development plan and field assessment with municipal officers, only 42km of high important roads have been prioritized for possible inclusion in the project. All roads should be of two

lanes (7.5m to 10m pavement width) with storm water drainage and 2.5m footpath on each side of the road. Four new bridges are planned or under constructed by DoR on municipal roads in Dhangadhi.

175. Among 42km identified needs for improvement, the Hasanpur-Syaule Road is strategically important to both Attariya and Dhangadhi Municipalities, has been identified as sub-regional project to be included in IUDP2. Of a total 11km total length of this linkage, 7.5 km lies in Attariya Municipality, while 3.5km is in Dhangadhi Municipality.

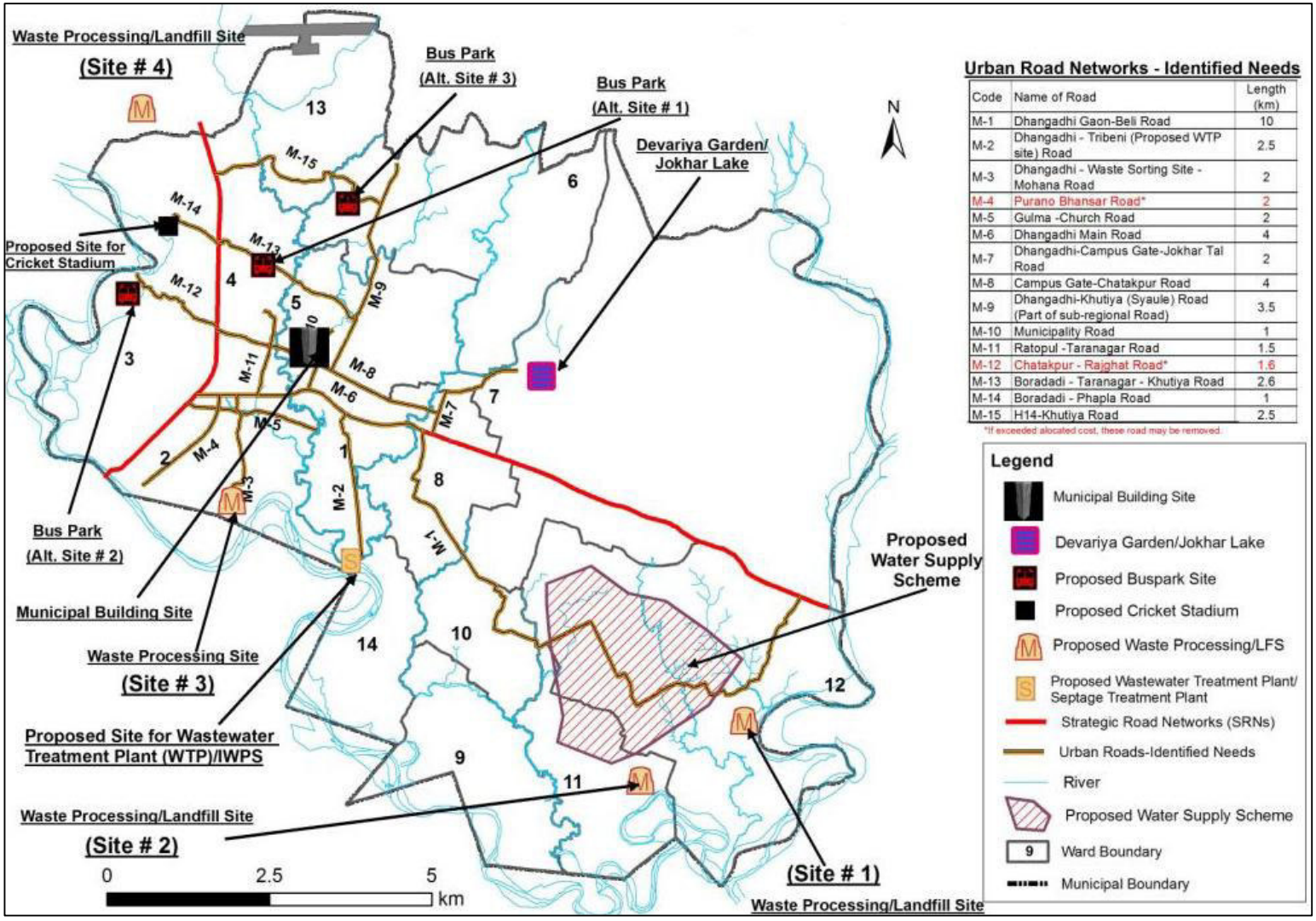
Urban Development Facilities

176. To meet the future economic and urban development needs of Dhangadhi, the municipality seeks assistance in the provision of a modern municipal building, new Bus Park, access road up to possible site for a Cricket and Sports Arena, a City Hall and tourist development of Jakhor Lake Area.

Community Infrastructure

177. The proposed project will include an allocation for assisting poor and marginalized households to be provided with basic municipal infrastructure, such as, a safe water supply, sanitation, drainage and access. The exact interventions will be identified during detail design in association with the disadvantaged households and communities.

Figure 4-3: Dhangadhi – Identified Priority Municipal Urban Infrastructure



4.4 Jhalari Pipaladi

4.4.1 Existing Status of Urban Infrastructure

Water Supply

178. There is a small water supply system in Jhalari Pipaladi managed by a Water Supply User Committees (WSUC) which provides piped water to approximately 2% of the municipality population. This is located in Ward No.10, an area mainly along main E-W highway. Another water supply scheme is under construction in Kaluwapur, which will supply drinking water to ward No.11. However, the majority of households rely on shallow tube wells and hand pumps all of which can easily be susceptible to contamination.

Sanitation and Wastewater

179. Many houses constructed along the East-West Highway have private toilets with septic tanks with soak pits. But there is no municipal service offered for removing septage (septic sludge) from the septic tanks. Households will contact a local contractor who will arrange to empty the tank manually. The majority of people i.e. 57% HHs still have no toilet facilities; these are predominantly in the rural areas.

Solid Waste Management

180. The average municipal solid waste (MSW) generation for Jhalari Pipaladi has been considered as 0.20, which is less than average national MSW generation rate (0.32 kg/capita/day) but comparable to other towns of Nepal with population less than 50,000. With this per-capita waste generation rates and projected population for the year 2015, the total MSW generation from Jhalari Pipaladi Municipality is estimated to be 9 tons/day.

181. No municipal household or commercial waste collection system exists in the municipality. However, waste is collected in the commercial area along the main highways arranged by a Bazar Management Committee, which also collects waste from houses in the core area by charging a solid waste collection fee. The collected waste is transported in a tractor-trailer to be dumped in open spaces, forest land or on the river bank. The Municipality does not have any separate system for collecting and managing medical waste or any other type of special waste separately. All wastes, whether household, medical waste, industrial waste, construction and demolition waste are mixed together.

Urban Roads and Surface Water Drainage

182. There is 58km of roads (mostly earthen track with partly gravel road) excluding SRN in Jhalari Pipaladi Municipality. Beside the section of SRNs, no municipal roads are blacktopped. All the remaining urban roads are either gravel or earthen surface. Large areas of municipality have no road accessibility.

183. Although more than 58km of roads are reported in the municipality, most of the roads are not accessible throughout the year in large parts of the municipality. Further, due to lack of drainage, most of the these roads in Jhalari Pipaladi Municipality are in a poor state and need to be improved or upgraded. Although river bank erosion is main problematic issue in Jhalari Pipalad, river flooding was also reported to be common during the monsoon.

Urban Development Facilities

184. As a recently created municipality, it lacks many civic buildings and facilities; it does not even have its own municipal office building.

4.4.2 Urban Infrastructure Interventions

Water Supply

185. In addition to upgrading/ extension of existing water supply schemes in ward Nos.10 and 11, based on the conceptual urban plan, field assessment and consultation with municipal officials and other stakeholders, two water supply schemes are proposed; one to serve areas of Wards 3, 4 and 5 and another to serve areas of Wards 6 and 7. O&M arrangements for this new scheme would be similar to the present schemes with a WSUC.

Sanitation and Wastewater

186. A detail study is required to determine the appropriate solution to improve the poor wastewater management within the municipality. A phased wastewater management plan should be prepared in relation to proposed urban development plans following the approach of using appropriate technology by utilizing and upgrading the existing system.

187. It is anticipated that the most economic solution might be the installation of small-bore sewerage for the main commercial and high density residential areas. This system would collect the overflow from septic tanks which would be connected to a decentralized effluent treatment (DEWATS) plant.

188. With this option, on-site wastewater management improvements would also be required since property septic tanks would still be utilized. The main investment cost for this component would be the provision of a septage treatment plant. An anaerobic digestion technology is suggested, which generates biogas as well as produces hygienic quality compost fertilizer. This could be included as part of a bio-degradable component for solid waste management improvements.

189. Other costs would include the provision of sludge vacuum tankers, although these could be provided by the private sector, as is present practice, and the service paid for by the property owner. Operation of the septage treatment plant could be assisted by the sale of compost fertilizer and utilization of biogas.

190. Where applicable, the cost of operation and maintenance of the small-bore sewerage system and DEWATS could be incorporated into the water supply billing system. As a newly created municipality, presently with low population densities and no capacity to operate conventional sewerage treatment system this option is not considered.

Solid Waste Management

191. The ultimate is a ‘zero waste’ target. This should be achieved through practicing the concept of reduce, reuse and recycle. The focus is on waste prevention (preventing the generation and minimizing the waste that is being generated) as a first priority.

192. Household and commercial wastes should be simply segregated into two waste streams; bio-degradable (‘wet’ e.g. kitchen waste) and non-biodegradable (‘dry’ e.g. packaging). This simplifies waste collection, processing and disposal.

193. Integrated Waste Processing Sites (IWPS) incorporating the treatment of septage (see above) could be developed. These do not necessarily have to be in one location. Small IWPS could be scattered around the municipality depending of waste sources plus environmental and social acceptability.

194. These sites could employ existing community level 'rag-pickers' to organise and process the two waste streams. The bio-degradable portion going to composting and the non-bio-degradable segregated into paper, plastics, glass etc. for recovery and re-cycling. Only the by-products (reject waste) would be transferred to the final disposal (engineered landfill) site.

195. Gradual improvement in waste management with associated public awareness, education and enforcement of law is suggested for the planned transformation from open dumps to sanitary landfills.

196. Based on field visits, there is no opportunity for a sub-regional shared landfill site with other project municipalities as this municipality is isolated by a wildlife reserve and forest areas and would be uneconomic to transport small amounts of waste over a long distance.

197. One site for MSW disposal has been identified within municipal boundary is less than 1km far from East-West Highway seems to be technically, socially and environmentally acceptable if land use issues are resolved.

Urban Roads and Surface Water Drainage

198. There are a few newly constructed roads within the municipality but these have not been constructed as per urban road standards (two lane road 7.5m to 10m pavement width) with storm water drainage and footpaths on each side of road. Almost all municipal roads within Jhalari Pipaladi need to be improved and upgraded. Through stakeholder's consultation, DTMP and field assessment, a total of nearly 31km of urban roads were identified as important urban networks in the municipality.

199. However, only 8km of high important roads have been prioritized for possible inclusion in the project based on the regional economic development vision and conceptual urban development plan and field assessment with municipal officers.

Urban Development Facilities

200. The primary requirement is the preparation of a comprehensive urban development structure plan. This structure plan should propose growth areas for housing, commercial, industry, recreation, etc. It should also indicate suitable locations for other civic amenities such as water supply schemes, waste management, treatment and disposal sites, etc.

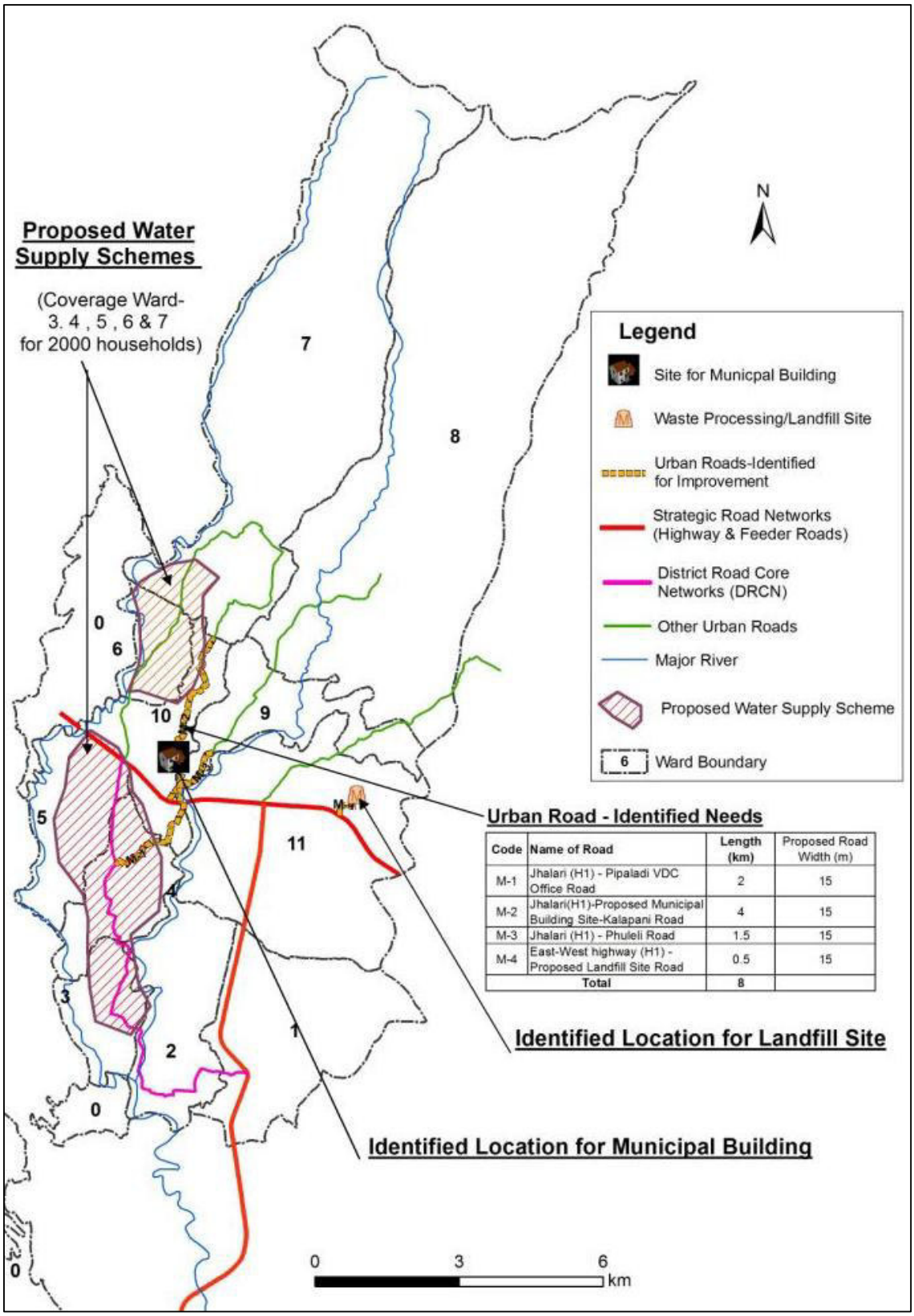
201. However, as a recently formed municipality the most important requirement is a Municipal Building from which the municipality can operate.

202. The existing Jhalari VDC building site has been proposed for new municipal building, however additional land has to be acquired to develop other municipal services. The site is about 2km north from Jhalari Chowk on the East-West (H1) Highway connected by gravel/ earthen surfaced road which is included for upgrading.

Community Infrastructure

203. The proposed project will include an allocation for assisting poor and marginalized households to be provided with basic municipal infrastructure, such as, a safe water supply, sanitation, drainage and access. The exact interventions will be identified during detail design in association with the disadvantaged households and communities.

Figure 4-4: Jhalari Pipaldai – Identified Priority Municipal Urban Infrastructure



Code	Name of Road	Length (km)	Proposed Road Width (m)
M-1	Jhalari (H1) - Pipaladi VDC Office Road	2	15
M-2	Jhalari(H1)-Proposed Municipal Building Site-Kalapani Road	4	15
M-3	Jhalari (H1) - Phuleli Road	1.5	15
M-4	East-West highway (H1) - Proposed Landfill Site Road	0.5	15
Total		8	

5 Social and Environmental Safeguards

[Note: This section to be read in conjunction with Discussion Note No.5 – Social and Environmental Safeguards].

5.1 Scope

204. This section provides a short description of the environmental situation in the project area, a first preliminary environmental and social screening of proposed sub-projects, and indications on environmental and social safeguards applicable for project implementation.

205. The Environmental and Resettlement Framework to be applied for components under this project is provided in Discussion Note No.5.

5.2 Prevailing Situation

5.2.1 Short Description of the Environment

206. The description focuses on aspects which will be of relevance in the Project; i.e. on aspects which could or will be affected by components that will be proposed for further development and implementation.

207. It should be noted that the project components are expected to have mainly positive effects on the existing environmental and socio-economic situation of the project area. Negative effects could result, mainly in localised and temporary ways, during construction of specific components. Both, **positive as well as negative effects will be assessed**, and mitigation measures proposed and implemented, where required.

Climate

208. The most important aspect of climate is precipitation. The area is characterised by a dry season lasting from October to April and a rainy season from May to September. In higher areas of the region, at least some of the precipitation falls as snow; however, in the Terai temperatures do not normally drop below freezing. Climate is not a part of the environment which will be affected in any way by the project. However, the region can - and most probably will - be affected by climate change effects.

Water Quality

209. Problems could arise mainly with respect to drinking water (ground water contaminated with arsenic; natural contamination which seems to occur at least in some parts of the project area). On the other hand, the lack of waste water treatment could (and probably does) lead to a contamination of surface as well as of ground water. The project is expected to contribute to an improvement of the situation concerning water quality, by contributing to improvements in waste water and solid waste management and drainage. Negative impacts of any sub-projects on water quality, especially also during construction, will have to be prevented.

Rivers

210. The rivers are the main dynamic and forming element in the landscape of the project area. They flow more or less parallel to each other through the plain, in a generally southerly direction, towards the Indian border. Since they all come from mountainous, erosion prone areas, they carry a heavy sediment load. This leads to very wide river beds

as soon as they enter the plain, in which the rivers show a braided pattern, meaning that, at least during the dry season, they split into several smaller and larger channels. These channels are rather instable due to shifting masses of sediments during the rainy season. At the edge of the river beds, erosion occurs, and the river bed, as such, can actually shift. During exceptionally high flows, the water level will rise above the river banks and can flood large proportions of the adjacent floodplains. The only parts of the Terai which are not subject to at least occasional flooding are the low ridges between the floodplains of the rivers; these are mainly covered with forest. The floodplains in the area are all used for agriculture, and all the settlements are located within them. This means that all the settlements as well as the agricultural areas are under threat from fluvial (river) flooding.

Soils

211. Alluvial soils in the floodplains are fertile. Soils on higher grounds, on the low ridges covered by forest are presumably rather shallow and less fertile. Erosion, except along the river banks, is not a major problem in the area.

Vegetation

212. Originally, the floodplains in the project area were probably covered with different types of forest, grassland and wetlands, depending on their elevation above normal river high water levels. This can now only be seen in Shukla Phanta Wildlife Reserve. The slightly higher lying areas are covered mostly with Sal forest, which is the dominant forest type, and which also seems to be a largely natural habitat. Although there are large forested areas (62% of Kailali District reported to be forest), encroachment on forest is an increasingly serious problem.

Fauna

213. Fauna is abundant in the Wildlife Conservation area. The remaining wetlands are rich in bird life. The forested areas are presumably the habitat of a variety of wildlife, but no information was available on this. Direct impacts of sub-projects on wildlife are not anticipated; however, impacts on natural habitats (see above) will have to be prevented.

Protected Areas

214. There is one major protected area in the study area, the Shukla Phanta Wildlife Reserve. It covers most of the southern part of Kanchanpur district. The northern part of the reserve is covered mainly with Sal forest, with some riparian forest along the rivers, while the southern part is grassland and wetlands. Two of the municipalities chosen for this project, Bheemdatt and Jahlari-Pipalati, are located in the immediate vicinity of Shukla Phanta Wildlife Reserve. It is not anticipated that the Project will propose any subprojects which will directly affect Shukla Phanta Wildlife Reserve. On the other hand, components such as solid waste management, drainage and wastewater treatment could have important indirect positive effects on the reserve.

5.2.2 Population

Indigenous Peoples

215. There is one group of indigenous peoples living in the area, the Tharu; they are split into two subgroups, the Rana Tharu and the Dagura Tharu. They are the original inhabitants of this part of Terai. In recent times, they have been more and more marginalised by migrants to the area who took over most of the land. It is not anticipated that the project will

propose any large scale sub-projects for implementation which could have significant effects on indigenous peoples.

Vulnerable Groups

216. One group of the population has to be considered as vulnerable: the so-called Freed Kamaiya; they were formerly bonded labourers who lived and worked on lands owned by landlords. They were "freed" about 15 years ago; however, no provisions were granted to them to provide a livelihood. Kamaiya are mainly Tharu. Whenever a project activity will affect vulnerable persons in any way, special efforts will have to be made in case compensation is required. If possible, such project components should contribute to improve the situation of vulnerable people.

5.2.3 Land Use

217. In a very general way, the following land use types can be distinguished in the Project area:

- Agriculture: this is the most important land use type in the Terai. The major parts of the river floodplains have been converted to agriculturally used land.
- Settlements: mostly also located within the floodplains; expansion of settlements encroaches on agricultural land, and the unplanned and rather haphazard way in which this happens occupies considerable areas of formerly agricultural land.
- Forest: this is mostly Sal forest on slightly higher ground; only comparatively small areas of riverine forest along rivers remain. Encroachment of forest happens, but seemingly not to the extent as it takes place on agricultural land.
- Wetlands: large areas of wetland are left only in the Shukla Phanta Wildlife Reserve; outside of it, there are still some wetland areas (lakes and swamps), but of much smaller dimensions.
- Rivers: the river beds occupy a considerable part of the Terai. Due to the high river dynamics, direct use of these areas by the human population is restricted to exploitation of sand and gravel as construction materials.

5.2.4 Economy

Agriculture

218. Agriculture is the most important economic activity of the area. The soils in the Terai are fertile, and climate allows for at least two harvests per year (typically wheat in the dry and rice in the wet season). A threat to agriculture, as mentioned above, is the increasing occupation of fertile land by the expanding settlements. A niche area for agricultural production could be the collection and processing (and possibly cultivation) of medicinal herbs.

Forestry

219. According to information received from the Kailali District Forest Office, 62% (205,000 ha) of Kailali District is forest; in the plain and the lower part of the hill zone, this is Sal (Shorea robusta) forest, in the hills predominately pine (Pinus roxburghii) forest, with an intermediate zone of mixed forest between the two; only small parts of riverine forest along rivers remain. Forests are legally protected, but some encroachment still occurs.

Tourism

220. Tourism is not yet well developed in the project area (or in the entire FWDR), but efforts for developing it are under way. One difficulty is certainly the general lack of suitable tourist infrastructure (e.g. hotels are available only in the larger towns). One other problem of the area, which affects not only tourism, is the difficulty of access (regional airport in Dhangadhi; problematic border crossings to and from India in Dhangadhi and Bheemdatt).

Physical Cultural Resources

221. The main physical cultural resources identified during the project preparation are a number of sites of religious importance, namely:

- Two temples in Bheemdatt, which are an important sites for Hindus (mainly from India), together with one other temple in nearby India and one or two more in FWDR.
- One temple and related structures, presently under construction in Dhangadhi. Besides the large lingam structure (Rameshworam Jyotirlinga) under construction, a congress centre, a botanical garden especially for plants with religious importance and a number of other buildings are planned on this site.
- One complex of several temples and related structures near Attariya Municipality.

222. Besides these sites with religious meaning, there is one other structure near Bheemdatt, which is very impressive: the pedestrian suspended bridge spanning the Mahakali Nadi, which connects the only part of Nepal lying west of this river with the rest of the country. It is over 4km long, crossing the river bed in 8 large spans.

5.3 Proposed Project Components

223. A number of project components have been identified during project preparation as indicated in Table 5-1 (see also Chapter 4).

Table 5-1: Main project types proposed

Project type	Attariya	Bheemdatt	Dhangadhi	Jhalari Pipaladi
1. Water supply	+	+	+	+
2. Waste water				
a. on site	+	+	+	+
b. Sewerage / DEWAT	+	+	+	+
3. Solid waste	+	+	+	+
4. Roads and drainage	+	+	+	+
5. Municipal facilities	+	+	+	+
6. Community infrastructure	+	+	+	+

5.4 Rapid Safeguards Screening of Proposed Sub-Projects

224. Table 5-2 summarises the results of the preliminary environmental and social screening and gives indications on activities required during detailed design and project implementation.

Table 5-2: Main sub-project types and anticipated impacts

No.	Sub-projects	Expected impacts	Comments
1	Drinking water supply • boreholes • processing and storage • distribution network	Will have beneficial effects by providing good quality drinking water. Main concerns: • water quality (natural arsenic contamination risk in the area) • land needed for plant and boreholes • potential impact during construction, e.g. of the distribution grid: damage to land and/or crops	Negative impacts are expected to be minor and easy to be mitigated. Category B projects, IEE required. The concerns mentioned here have to be addressed, mainly concerning water quality (monitoring required) and impacts on land or assets (compensation required).
2	Waste water treatment • on-site (septage treatment plants) • sewers and DEWATs	Will have beneficial effects on the environment by reducing the risk of water and soil contamination (public health problem). Main concerns: • land required for septage treatment plants and possibly for treatment ponds • quality of output (treated waste water, compost, biogas) • risk of flooding of sites	Septage treatment plants are most likely to be categorised as B projects, IEE required. Sewers and DEWATs are small local structures with very little if any negative impact, Category C. Still, any impacts, as e.g. land requirement for treatment ponds, will have to be addressed according to safeguards principles.
3	Solid waste management • Solid waste disposal sites	Will have overall beneficial effects by bringing a solution to the waste management problems clearly visible now (insufficient collection of waste, unsuitable waste disposal leading to contamination of land and water and to public health problems). Main concerns: • land required for waste disposal sites • risk of flooding • risk of contaminating surface and ground water by seepage from disposal sites • permanently closing of site once it is full. See comments on sites in DN5 Annex A.	Category B projects, IEE required. Of special concern, given the situation of the project area, is the flood risk. This will have to be addressed during detailed planning, and suitable structural measures to be taken for flood protection. Likewise, drainage and treatment of drainage water is an issue. Permanent closing of filled sites by impervious clay layer and topsoil, to make land available for other uses (agriculture or forestry; sites probably not suitable for housing).

No.	Sub-projects	Expected impacts	Comments
4	Road upgrading • widening existing roads • blacktopping • drainage • footpaths along roads • in specific cases possibly realignment of road • street lighting	Will improve the situation in settlement by providing more space for traffic, drainage, increased safety for pedestrians (footpaths/ street lights), and reduction of problems caused by dust and mud. Main concerns: • land acquisition for widening or realigning roads • reclaiming of existing, but not used ROW: conflicts with encroachers • impacts during construction	Category B projects, IEE required; small local interventions probably C. Land will have to be acquired according to rules. If squatters or other land users without a title will be affected, compensation will have to be provided according to ADB safeguards principles. Construction will have to be carried out with the aim of minimising nuisances. Any temporary occupation of land, and any damage to land, assets or structures caused by construction activities, will have to be compensated.
5	Municipal infrastructure • municipal buildings • bus parks • other smaller interventions (e.g. contributing to improvement of sites with a potential for tourism)	Municipal buildings and other small interventions will improve the situation for the municipality, and will have very little if any negative impacts. Bus parks will help improving the situation concerning public transport. Negative impacts can be: • land requirements • noise due to increased traffic • need for upgrading or new construction of access roads	Municipal buildings and other smaller interventions: Category C. Bus parks Category B, IEE required. In case road construction or upgrading is required, this will have to be addressed as under No. 4 above.

225. One additional group of sub-projects are summarised as community infrastructure. These are small local structures of different kinds, mainly aiming at improving the situation of individual vulnerable HHs or of groups of vulnerable HH and can comprise improvements in the drinking water supply, sanitation, access, etc. These are very small interventions with very limited, if any, negative impacts.

226. As a major conclusion from a rapid screening the following can be said:

- None of the proposed sub-projects is considered as being a Category A project, i.e. being of a type or size that would require a full-fledged ESIA; one very important point is that, while land will be required for implementing the project, and in a few cases (mainly in the case of a realignment of a road instead of just upgrading it along the existing track) it cannot be excluded that a few houses will have to be removed, none of the components as proposed now will cause any major resettlement.
- Some components are considered as being Category B projects, where some E&S impacts are likely to arise, which however are of a rather low magnitude and can easily be compensated. These are mainly water supply systems, septage treatment systems, solid waste disposal sites and major road upgrading schemes. For these types of sub-projects, an IEE will have to be prepared.

- Some schemes or project components are considered as causing no or such minor impacts that no formal E&S assessment is required; still, even in such cases any such issue encountered (most importantly: acquisition of land or temporary occupation of land, potentially causing damage to structures or crops) would have to be addressed.

5.5 Observations on Some Specific E&S Issues

227. **Regional Planning:** It is recommended to prepare a comprehensive land zoning and land use planning for the municipalities or the districts, for channelling future development. Such a plan would have to define, besides forest land, also agricultural land which is not available for construction, and would have to set aside land for the development of the settlements, potentially also identifying industrial areas etc. One basis for such overarching planning includes the preparation of a risk map, which in the case of the two districts in question would mainly identify risks of flooding. Flooding, including the fact that rivers can occasionally shift their beds, is a major risk in this area and should be taken into consideration in all development plans. It would also have to consider changing (mostly: increasing) risks brought about by the effects of climate change (see below).

228. **Wetlands:** ADB safeguards specify that a project should not significantly convert or degrade a natural habitat. Wetlands are mentioned as an example, and wetlands are usually considered as valuable natural habitats. However, in the case of the four municipalities involved, it has to be seen clearly that they are located entirely or predominantly in river floodplains, i.e. in wetlands. In addition to that, any small depression, be it of natural origin (e.g. an ancient river bed) or manmade (e.g. an abandoned clay pit for brick manufacturing) will immediately accumulate water and will be transformed into a wetland. For this reason, it has to be considered that "not affecting wetlands" cannot be an absolute rule here. Careful planning, implementation and operation will be required in any case, but the conversion of some parts of wetlands will have to be accepted.

229. **Squatters, Vulnerable HHs:** Whenever a project activity might affect vulnerable persons, the principles as set forth in the GESI (Gender Equality and Social Inclusion) framework is applicable (see DN#2).

230. **Climate Change:** Climate change can bring an increase or a decrease in rainfall, depending on the specific situation of an area. However, one phenomenon that is already happening, and that is likely to affect the four municipalities, among others, is the accelerated melting of glaciers. This leads to an increase in river discharge, as least as long as glaciers are still in place. This, together with normal rainfall, more precipitation in higher areas falling as rain rather than as snow, and earlier snow melt, can lead to an increased risk of floods, and also floods earlier in the year than occurred in the past. These risks should be considered in future planning in the region.

231. **Environmental Management:** Presently, none of the four municipalities has any institutional structure or capacity for dealing with environmental issues. However, problems are many and increasing. The municipalities should consider to create a specific Environmental Department, for which capacity building programs might be required.

5.6 Safeguards Implementation Framework

232. ADB safeguards require the preparation of an Environmental Assessment and Review Framework and a Resettlement Framework. These frameworks are summarised here and elaborated in Discussion Note No.5.

233. A number of conditions will have to be fulfilled /steps will have to be implemented for the development of schemes under this Project:

- Legal compliance: applicable laws (for the protection of the environment, for land acquisition, etc.) will have to be followed. For ADB-funded projects, this includes the provisions made in ADB's Safeguard Policy Statement.
- A grievance redress mechanism will have to be put in place. PIU will be the main responsible body for handling grievances, and it will also be responsible for informing the affected population of their rights to grievance and the mechanisms to be followed.
- A public participation process will be required for all project schemes, including meaningful consultation of all stakeholders.
- Environmental assessment will have to be done for each scheme (with the possible exception of schemes classified as Category C, i.e. schemes without a risk of negative environmental impacts). Given the fact that most shemes are identified as Category B (schemes with limited risk of environmental impacts, or impacts that can easily be mitigated), full-fledged EIAs will not be required, however, IEEs will have to be prepared.
- For each scheme, an EMP (Environmental Management Plan) will be required, which will describe the rules for environmental protection which will have to be followed, and the measures to be taken, in project implementation and operation. Of special importance here will be the EH&S (Environment, Health and Safety) measures to be taken during construction.
- Social impacts of the project will have to be identified; these can be mainly involuntary acquisition of land, or lost access to resources. All such impacts will have to be compensated. It is important that compensation will have to be made before the project can actually start.
- Monitoring of environmental and social issues will have to be done.

234. These points are described in more detail in the Environmental Assessment and Review Framework (EARF) and the Resettlement Framework (RF) in DN#5.

6 Municipal Governance and Financial Management

[Note: This section to be read in conjunction with Discussion Note No.6 – Municipal Governance and Financial Management].

6.1 Summary Highlights on Municipal Finance:

235. Municipal finances are identified as one of the major areas for intervention within the priority sector of municipal management in Nepal. Furthermore, fiscal decentralization, which includes the strengthening of financial income (Own Source Revenues) of Municipal Bodies, can be considered as the backbone of the decentralization process.

236. Although the legal framework through the Local Self Governance Act (LSGA) was provided almost 15 years ago, fiscal decentralization has not taken place or has been very slow. Most of Nepalese municipalities are still weak and highly dependent on revenue transfers from central government. Municipal bodies are facing a peculiar situation where the demand of "urban services" has been rising due to rapid growth of urbanization,[4] but the supply side is restricted because local revenue resources have been declining.

237. The main weaknesses in the present municipal administration system are due to; inefficient urban management; poor revenue/expenditure planning; lack of periodical revision of municipal tax/rates and user charges; poor information systems and inappropriate accounting. Many municipalities in the country, particularly small and medium size are poorly staffed where staff responsibilities or terms of references are unclear and often fragmented.

238. To avoid the fiscal crisis of the municipalities, the first step is to properly supplement local revenues by inter-governmental fiscal transfers – without undesirably reducing the local efforts to collect their own source revenues through "Integrated Property Tax", Business / Professional Tax and other available revenues sources.

239. In this context, the 4 Project municipalities are utilizing their maximum efforts in collecting the direct taxes or own source revenue – initiation of tax education program can be considered one of the positive steps towards maximization of their efforts in revenue collection. The second step is to permit local bodies (especially municipalities) to levy their own broad-based taxes. However, this requires intensive discussion with central government concerned ministries and local authorities.

240. Thus, the financial management of the four municipalities varies considerably in relation to their size and establishment year. However, efforts on maximizing "own source revenue" have already been initiated – which can be considered as positive efforts from the local government officials of these four municipalities. A detailed long term work plan is required to ensure financial improvement of these four municipalities.

6.2 Municipal Financial Management Assessment

241. The financial management of the four project municipalities were assessed in detail; responses are provided in DN#6: Municipal Governance and Financial Management. A comparative scoring assessment of the financial management maturity of the 4 project municipalities is presented in **Table 6-1**.

[4] On 2nd December 2014 – Government of Nepal, declared 61 new municipalities with altogether 191 in number: including 1 Metropolitan City, 11 Sub-Metropolitan City and rest 179 as Municipality.

Table 6-1: Municipal Financial Management Comparative Maturity Rating

	Municipality	Attariya		Bheemdatt		Dhangadhi		Jhalari Pipaladi	
1. Accounting and Financial Reporting (Total 20 points)		**Assigned**	**Score**	**Assigned**	**Score**	**Assigned**	**Score**	**Assigned**	**Score**
a.	Accrual Basis of Accounting applied	2	1	2	1	2	1	2	0
b.	Computerized FMIS	4	2	4	2	4	3	4	0
c.	Monthly financial statements can be closed within 15 – 30 days	4	4	4	4	4	4	4	2
d.	Financial statement prepared in accordance with acceptable financial framework	4	2	4	4	4	4	4	2
e.	Qualified Chartered Accountant in the Accounts Department	4	2	4	2	4	3	4	0
f.	Financial Management & Accounting Manual in place	2	2	2	2	2	2	2	1
2. Budgeting and Financial Sustainability (Total 20 points)									
a.	Bottom-up budgeting on annual basis with variance analysis	5	3	5	4	5	4	5	2
b.	Long term and short term budgets prepared	5	2	5	2	5	4	5	1
c.	Adequate Budget Allocation/ Releases	5	3	5	3	5	4	5	1
d.	Absorption Capacity	5	2	5	3	5	4	5	3
3. Internal Audit (Total 15 points)									
a.	Existence of an effective IA Department	3	0	3	1	3	2	3	0
b.	Internal Audit Reports to Audit Committee (at least 2x a year)	3	1	3	2	3	3	3	0
c.	Qualified IA department heads	3		3	1	3	3	3	0
d.	Risk based Internal Audit Manual	3	2	3	2	3	2	3	1
e.	Evidence that IA Reports are taken seriously / followed up on	3	2	3	2	3	2	3	0
4. External Audit (Total 15 points)									
a.	Audited financial statements issued within 6-9 months of fiscal year end	5	2	5	5	5	5	5	0
b.	Competent independent external auditor	5	3	5	5	5	5	5	0
c.	Limited audit observations / no serious issue repeated for more than 2 years	5	2	5	4	5	4	5	0
5. Internal Controls (Total 20 points)									
a.	IC commensurate to business (as assessed by auditor or ADB)	10	3	10	5	10	7	10	0
b.	Fixed Assets Register in place	5	3	5	4	5	4	5	2
d.	Adequately trained Staff in place (limited vacancies, low turnover OR adequate experience / qualifications)	5	3	5	3	5	4	5	0
6. Governance / Tone at the top (Total 10 points)									
a.	No alleged reports of misconduct in the media	5	2	5	4	5	4	5	3
b.	Active and effective Governing Body/ Chief Executive	5	1	5	3	5	3	5	2
	TOTAL	**100**	**47**	**100**	**68**	**100**	**81**	**100**	**20**

Scoring Guidelines: (i) Many are subjective and professional judgment to be exercised (ii) Overall Rating : 0-40% = High Risk, 40 – 60% = Substantial Risk, 60% – 75 % = Moderate, 75% – 100% = Low, (iii) For low risk, at a minimum must meet criteria's 1b, 1d, 2b, 4b, and 5a, else automatically at least moderate

6.3 Municipality Capacity Building and Training Needs Assessment

6.3.1 Institutional Capacity for Municipal Infrastructure

Existing Situation

242. None of the four project municipalities have adequate human resources to effectively and efficiently manage municipal infrastructure services that they provide to their citizens. Although, the two larger municipalities of Bheemdatt and Dhangadhi which have been established for many years, do a very good job considering their low financial budgets and staffing levels. However, the two municipalities that have recently been established, Attariya and Jhalari Pipaladi, still have to recruit staff and develop their management structures.

243. Although water supply is one of the basic urban infrastructures to be provided by a municipality, none of the project municipalities are directly involved in the delivery of this urban service. Piped water in Bheemdatt and Dhangadhi is provided in the main city areas by NWSC. Unfortunately, neither NWSC branch office has sufficient trained and competent technical staff.

244. There are also piped water supply schemes in all four municipalities that are managed and operated by water supply user committees (WSUC). Institutionally, these are headed by a chairperson elected by the water users. Although the WSUC receive technical assistance from the MoUD water supply and sanitation division office (WSSDO), the WSUCs have no in-house trained technical staff available to operate and maintain the water supply infrastructure regularly on a day-to-day basis.

Recommended Institutional Arrangements for Municipal Infrastructure

245. Each municipality should have, in the medium to long term, in-house capability to independently develop, operate and maintain their infrastructure. The municipality should have planned asset management programs with the necessary resources and capacity to operate and maintain the municipal services provided.

246. Due to the nature of urban infrastructure services to be provided by the municipality, different divisions/ sections/ units should be established to operation and maintain the smooth delivery of each municipal infrastructure service. Competent technical staff in each division/ section must be recruited with clear job descriptions.

247. For the proposed expansion of the city water supply, DSC should evaluate different operational and management modalities and make recommendations. Currently, WSUC is one of the better models for water supply operation and management in many towns in Nepal. However, the existing institutional arrangement should be strengthened with recruitment of competent technical staff to ensure sustainable operation and maintenance.

248. The Institutional Development Consultant (IDC) to be engaged through the Project (see Discussion Note #7) will provide further analysis of municipal infrastructure management requirements and provide or arrange training as appropriate.

6.3.2 Financial Management Training Needs

249. The present human resources in each of the four project municipalities and their skills were assessed in order to idenify gaps in staff levels and needs for training. Issues assessed included: a) staffing pattern; b) preparation of annual budgeting and planning; c) existing accounting system; d) accrual accounting system (AAS); e) enhancing municipal own source revenue; f) inventory/ stock management; and g) internal audit.

250. A summary of the financial management training needs assessment is provided in **Table 6-2**. Brief Action Plans for improving municipal financial management in each of the 4 municipalities are provided in **DN No.6: Annex 6-F**.

Table 6-2: Municipality Financial Management Trainings Needs

Attariya • Revenue and Accounting Software Operation • Vital Registration Software Operation • Concept of Accrual Accounting System • Assets Valuation • Liabilities Identification (gratuity, leave encashment) • Preparation of first opening balance-sheet • Improved collection method of tax and non-tax revenue	**Bheemdatt** • Municipal Revenue Mobilization • Integrated Property Tax – focus on modified way of collection and coverage • Accounting Training – How to prepare Balance Sheet (considering new accounting system – accrual accounting) • Store Management – Inventory Management • Internal Auditing – How to improve it in implementation (area of intervention, new method of auditing- concept clarity) • Financial Report Writing – improved way of software application • Integration of existing IT with new upcoming improved software • Better use of existing regional learning center human resources in different training of municipal management and development
Dhangadhi • Municipal Revenue Mobilization • Integrated Property Tax – focus on modified way of collection and coverage • Accounting Training – How to prepare Balance Sheet (considering new accounting system – accrual accounting) • Store Management – Inventory Management • Internal Auditing – How to improve it in implementation (area of intervention, new method of auditing- concept clarity) • Financial Report Writing – improved way of software application • Integration of existing IT with new upcoming improved software • Better use of existing regional learning center human resources in different training of municipal management and development	**Jhalari Pipaladi** • Collection procedure of tax and non-tax revenue of municipality • Vital Registration – how to perform • Software Operation of Vital Registration • Revenue (IPT) and Business Tax and Accounting Software Operation • Concept of Accrual Accounting System • Assets Valuation • Liabilities Identification (staff gratuity) • Preparation of first opening balance-sheet

7 Implementation Arrangements

[Note: This section to be read in conjunction with Discussion Note No.7 – Project Management and Implementation Arrangements].

7.1 Project Management

7.1.1 Executing Agency

251. The executing agency will be MOUD, working through its Department of Urban Development and Building Construction (DUDBC). It will be responsible for overall strategic guidance, technical supervision, project execution, and ensuring compliance with loan covenants.

7.1.2 Project Steering Committee

252. At the central level, a project steering committee (PSC) will be established to be chaired by the secretary of MOUD.

7.1.3 Project Coordination Office

253. The DUDBC has established a Project Coordination Office (PCO), led by a full-time Project Director to execute urban projects; he/she will have no other duties within the DUDBC or elsewhere. The Project Director, supported by the PCO, a Project Deputy Director and Project Management Consultant (PMC), will: (i) coordinate all activities under the Project; and (ii) will be responsible for overall project implementation, monitoring, and supervision, ensuring that gender and inclusion issues are addressed substantively in the project cycle.

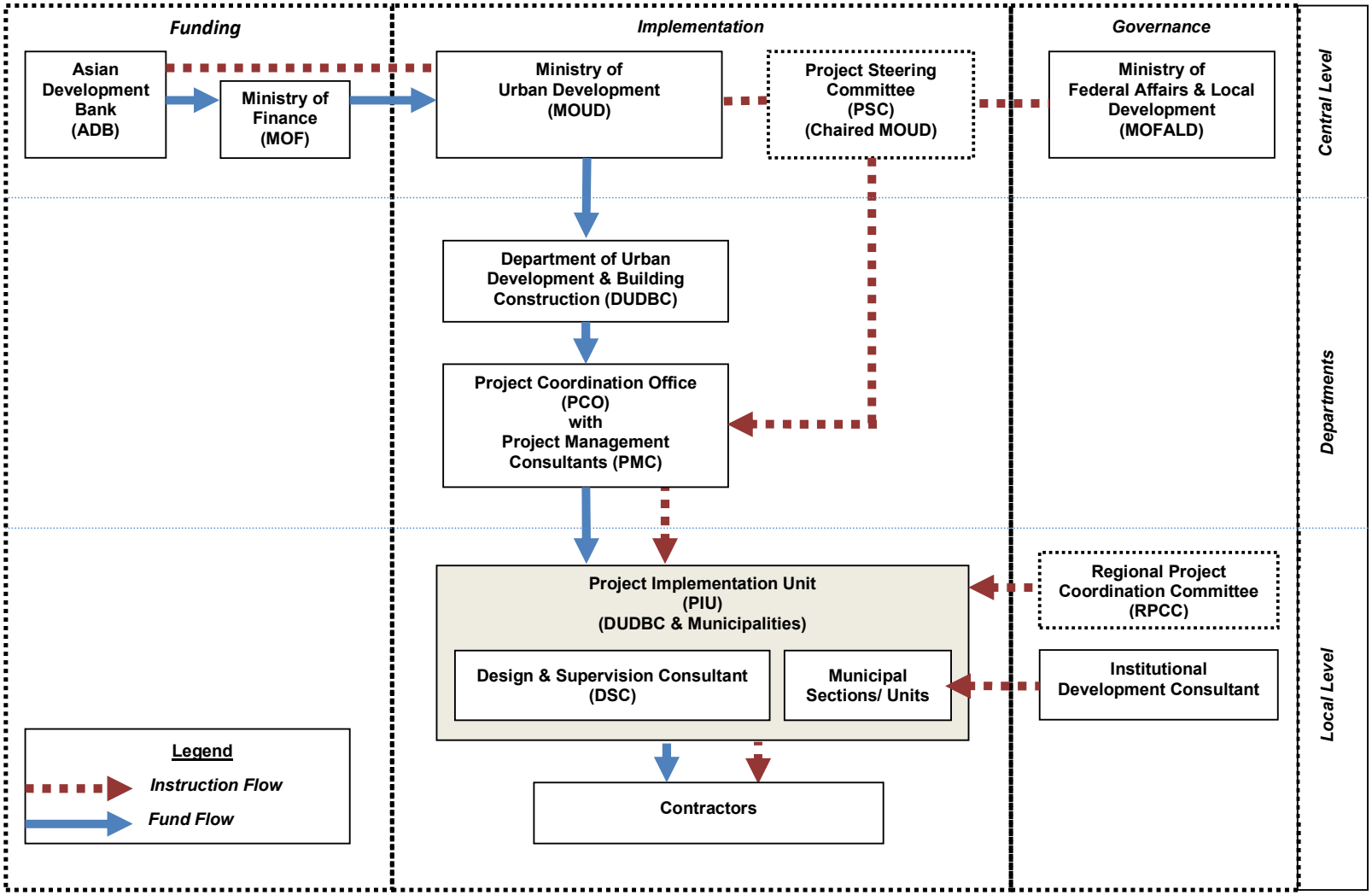
7.1.4 Project Implementation Unit

254. A PIU will be established in the DUDBC Kailali Divisional Office (KDO) in Dhangadhi in association with the project municipalities' sections and units. The responsibilities of the PIU include: (i) carrying out detailed surveys, planning, investigations and engineering designs of municipal infrastructure components; (ii) tendering, evaluating bids and awarding works, contract administration, supervision and quality control; (iii) measuring works carried out by the contractors and certifying payments; (iv) conducting public awareness campaigns and participation programs, (v) preparing and implementing resettlement plans; (vi) carrying out environmental assessments and management plans; (vii) ensuring project municipality compliance with loan covenants; and (viii) preparing monthly reports. The Design Supervision Consultant (DSC) supports the PIU in all the aforesaid activities.

7.1.5 Regional Project Coordination Committee

255. A Regional Project Coordination Committee (RPCC) will be established to coordinate regional aspects of project implementation between the project municipalities and development line agencies. **Figure 7-1** shows the proposed project management structure.

Figure 7-1: IUDP2 Project Implementation Arrangements



7.2 Project Implementation Support

7.2.1 Project Management Consultants

256. A Project Management Consultant (PMC) firm comprising international specialists and national experts will assist the PCO in project management activities including reviewing engineering designs, procurement, and implementation. The PMC will also assist the Project Coordination Office (PCO) and the Project Implementation Unit (PIU) in project formulation, management, monitoring and evaluation, financial and environmental management aspects, public relations and awareness, training and capacity building, and institutional development/strengthening ensuring that the language and messages are gender sensitive and appropriate for women, poor and excluded groups.

7.2.2 Design and Supervision Consultants

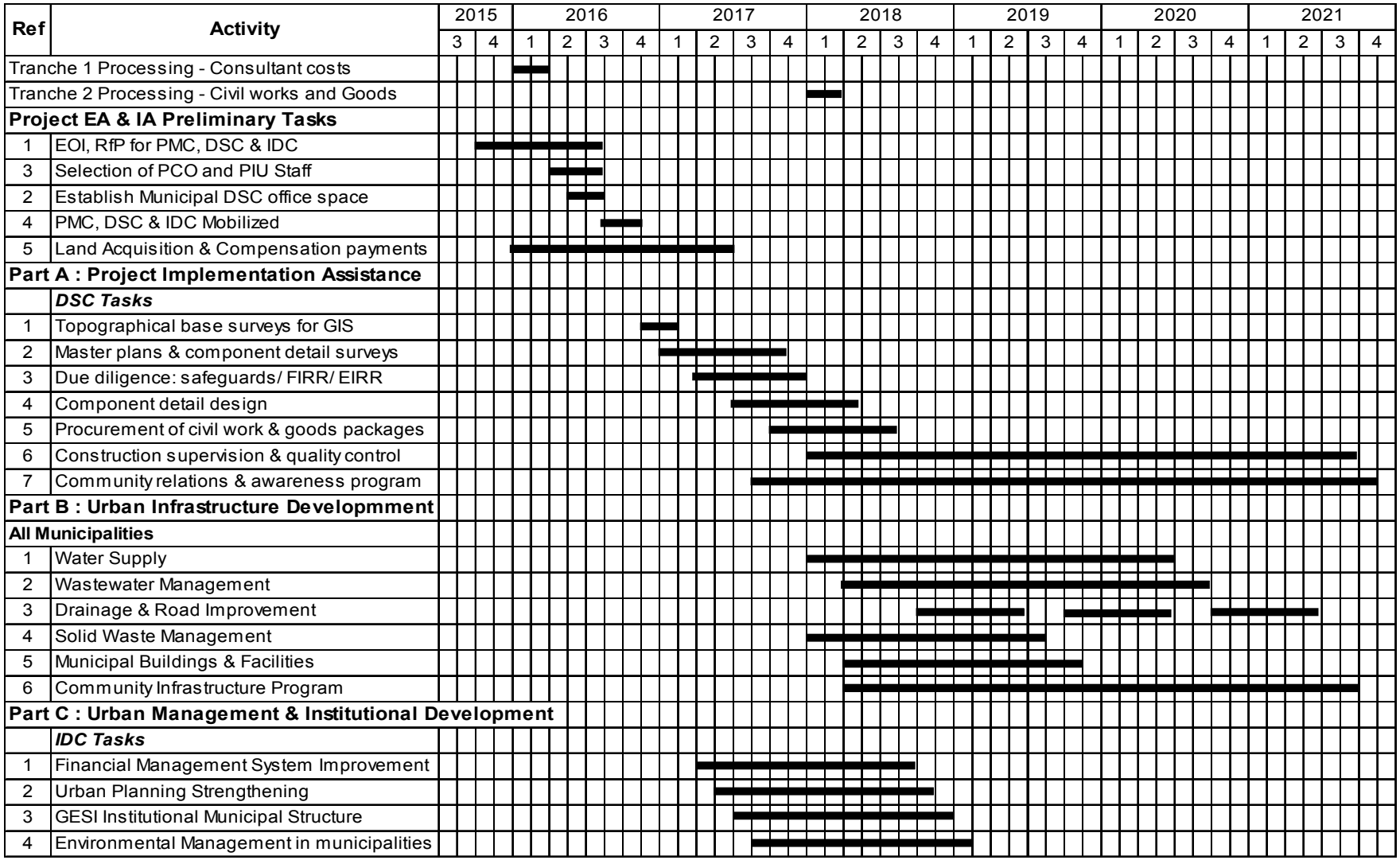
257. Design and Supervision Consultant (DSC) firm will support the PIU. The objectives of the DSC is in project formulation and management; preparing urban development plans; undertaking financial and economic due diligence; determining social and environmental risks and preparing safeguard management plans including monitoring and evaluation; project financial management aspects plus public relations and awareness.

7.2.3 Institutional Development Consultants

258. A consulting firm with international and national consultants or institutions will be engaged to strengthen the capacity of Attariya, Bheemdatt, Dhangadhi, and Jhalari Pipaladi municipalities for improved urban planning, municipal asset and financial management, GESI responsive urban service delivery and environmental management.

259. The timeline for the recruitment of the consultants is indicated in the Project Implementation Schedule provided in **Figure 7-2**. The time intervals are subject to efficient evaluation and processing of various review periods. The request for Expressions of Interest (EOI) and Terms of Reference (TOR) for the PMC, DSC and IDC are provided in DN#7, Annexes 7-A, 7-B and 7-C.

Figure 7-2: Project Implementation Schedule



8 Outline of Proposed Project and Next Steps

8.1 Project Objective

260. From the diverse and intense response received from the numerous stakeholder meetings and discussions it is clear that there is an urgent need to improve the quality of life for the population of the selected municipalities and subsequently of the region as a whole. This is primarily seen to be achieved through laying the foundation now for economic development and planned urbanization. With political will and leadership, planned urbanization is feasible at this stage of the municipalities' development.

261. Economic development essentially requires facilitating the flow of goods and services through improved connectivity, in particular with India, to increase the agro-industrial and commercial potential of the region. Linked with this, planned urbanization would include improved land management and enabling environment following a participatory vision.

262. With the anticipated economic activity and resultant population in-migration urban services and facilities would require to be enhanced and expanded supported by improved governance and resilience.

263. **Table 8-1** illustrates the types of interventions required to meet the regional development objective. Many of the larger and regional identified 'non-project' investments would need to be supported by other Government agencies. **Attachment 3** provides a Data Sheet for the priority urban infrastructure components for each municipality identified for inclusion in the IUDP2.

Table 8-1: Development Interventions

Theme	Economic Development & Sustainable Urbanization	Connectivity	Quality of Life
Potential project interventions (Municipal)	Participatory vision Land use plans Land pooling Municipality offices Improved management of municipal assets and finance	Municipal roads Small bridges Regional bus park	Improving access to and quality of urban services - water supply - sanitation - drainage - waste management Public amenities - cycle ways - street lighting - landscaping & planting
Non project interventions (Other agencies & Regional)	Industrial zone / cold storage Special economic zone (SEZ) Inland clearance depot (ICD) Tourist development and tourist information centers Far Western University for Agriculture and Forestry	Public transport DoR Highways AH-02 Bridge over the Mahakali River Airport expansion for cargo and new routes	Recreation and sports facilities Specialist teaching hospital Hazardous waste treatment and disposal site(s)

8.2 Estimated Project Cost

8.2.1 Project Cost Allocation

264. The proposed project envelope is estimated $115 million[5] (inclusive of taxes and duties). Government has requested ADB for a loan of up to $70 million from the ADB's Special Funds resources. The Ministry of Urban Development (MOUD) and ADB will help identify co-financing for an amount of $24 million during the loan processing based on the agreed project scope. Government financing is estimated at $15 million and will be firmed up during loan processing. In addition, it had been intended that municipalities and beneficiaries would be requested to contribute an estimated $6 million to the project cost.

8.2.2 Indicative Design Costs

265. Based on project financing constraints **Table 8-2** indicates the proposed fund allocation for the urban sectors in each municipality focusing on the priority core urban zones. Allowances for contingencies, tax, interest, etc. and implementation assistance (e.g. PMC/ DSC/ IDC etc.) in relation to the proposed project funds are also indicated.

Table 8-2: Indicative Project Financing Allocation

Sector \ Town	Attariya	Bheemdatt	Dhangadhi	Jhalari Pipladi	Total	$ million	%
Water Supply	400	450	420	400	1,670	16.70	15%
Wastewater Management	178	595	505	143	1,421	14.21	12%
Solid Waste Management	373	370	323	217	1,283	12.83	11%
Municipal Roads and Drainage	800	1,440	1,360	320	3,920	39.20	34%
Municipal Facilities	240	10	157	70	477	4.77	4%
Community Infrastructure	20	25	25	15	85	0.85	1%
Infrastructure Totals	**2,000**	**2,900**	**2,800**	**1,150**	**8,850**	**88.50**	**77%**
Contingencies, tax, interest, etc.	400	580	560	230	1,770	17.70	15%
Implementation Assistance**	200	290	280	115	885	8.85	8%
Total Costs	**2,600**	**3,770**	**3,640**	**1,495**	**11,505**	**115.05**	**100%**

** Includes Consulting Services, Institutional Strengthening, Capacity Building, Social/Environmental Safeguards and Awareness Campaigns

[5] ADB Concept Paper. Project umber 47252. Nepal: Far Western Region Urban Development Project. December 2014.

8.3 Key Issues and Next Steps for Ministry of Urban Development

266. This section summarizes the key decisions/ action required by GON, and specifically by MOUD, in reasonable time in order for the project to move forward successfully.

Regional Economic and Urban Development Vision

267. The concepts and prospects set out in Discussion Note No.1 for preparing a Regional Economic and Urban Development Vision need to be carefully reviewed and discussed. The 'Vision' needs to be refined and agreed. The Vision requires a high level government 'owner' so that it will provide the foundation for the future economic development of the region and more specifically for the four project municipalities.

Project Scope

268. Final selection of project components, which are subject to environmental and social safeguards and issues of land availability or acquisition, will be undertaken by the DSC in association with the municipal stakeholders. The selected project components should support the anticipated or desired municipal urban development growth patterns. The concept urban development plans provided in the report need to be reviewed and approved.

Land Acquisition

269. Land acquisition always takes much longer than originally anticipated. Projects in the past have been severely delayed or components cancelled due to land acquisition problems.

270. Major issues to be resolved relate to identification and land acquisition for civic amenities and services, such as, municipal buildings; bus parks; water supply source development; and, municipal waste treatment and disposal sites.

271. An important factor in selecting road and access improvement schemes for inclusion in the project is the required 'right-of-way' (ROW). This is not just for the road carriageways but also service corridors for installing drainage and other infrastructure. It has to be determined whether adequate ROW is available or if property or land needs to be acquired.

272. The status of land requirements (August 2015) is provided in **Attachment 4**. As a priority, all 4 project municipalities should proceed with indentifying or confirming land ownership and preparing the necessary land acquisition/ transfer notices.

Social, GESI and Environmental Safeguards

273. If households or businesses would be negatively affected by the Project; whether socially, economically or environmentally mitigation measures based on these safeguards would have to be taken. Initial safeguard assessments indicate that none of the proposed project schemes exhibit any major problem. However, most do have some effect socially or environmentally. The DSC will be required to undertake detail assessments of each agreed scheme in adherence with the Social, GESI and Environmental safeguard frameworks prepared under the TA.

Project Consulting Services

274. As a priority, MoUD/DUDBC should proceed with finalizing the Terms of Reference (See DN#7 Annexes) for the PMC, DSC and IDC and proceed with advertising for expressions of interest (EOI) from consulting firms.

Preparation Activities for Detail Design

275. To reduce time required for detail design of project components, surveys and ground investigations can often be done as advance actions, before the DSC is mobilized. Such activities could include:

a. GPS control station surveys and digital map updating/ preparation of the municipalities.

b. Hydro-geological and geo-electrical resistivity surveys for assessing the potential for developing well-fields for water supply including exploratory bore-holes to test the water quality.

c. Soil investigations for agreed SLF / waste disposal sites.

d. Traffic surveys for traffic management of proposed bus stations/ vehicle parks.

Institutional Arrangements for Water Supply

276. Guidance is required on the preferred institutional arrangement for the medium-term responsibility for the provision and resultant operations and maintenance of the proposed water supply schemes. Presently water supply user committees have been proposed.

Municipal and Beneficiaries Contribution to Project Cost

277. The proposed Project funding envelope originally intended for municipalities and beneficiaries to be requested to contribute an estimated $6 million in total to the project cost. A decision from GoN is required to confirm whether this intention is still valid or needs to be changed.

Attachment 1: Design and Monitoring Framework (Draft)

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanism	Assumptions and Risks
Impact Regional Economic Development Improved quality of life of all citizens, including women, poor and the excluded, in the project municipalities through sustainable services	By 2021 Regional Economic Development Vision adopted at central level Strategies, Plans and Programs Prepared By 2027: Open defecation-free project municipalities Open dumping-free project municipalities Operating ratio improved from XX% to XX% in project municipalities % of women, poor and the excluded reporting improvement in quality of life	**For all indicators:** Annual reports of NPC, MoF and Budget Speech Project municipality reports MOFALD annual reports	**Assumptions** Government body accepts responsibility for Regional development Cross party Political commitment Improvements in urban services increases consumers' willingness to pay Municipalities in the FWRN remain a priority area for development for the government **Risks** Lack of willingness to increase tariffs and taxes to meet OPEX requirements
Outcome Increase in employment opportunities Increased access to improved urban services in project municipalities by 2022	By 2021 Construction of Bridge over Mahakali River starts Pancheswor and West Seti HP starts implementation Expansion of Dhangadhi Airport initiated 480,000 people (including xx% of women, xx% of poor and xx% of people from excluded social groups) in project municipalities have access to improved sanitation facilities 80% of municipal waste collected and non recyclable waste disposed of in landfill(s) Recycling and material recovery rate from MSW reached to 45% Water logging after heavy rains reduced to an average of 1 hours from 5 hours Water supply coverage increased to 36% of HHs (including xx%	**For all indicators:** Annual reports of MoF, DOR, MoI etc. MOUD annual reports Project municipality annual reports	**Assumptions** Support by Government for Regional development The central government provides necessary support and supervision Key municipal officials receiving training and involved in implementation remain in their positions **Risks** Extreme weather events exceed the design level

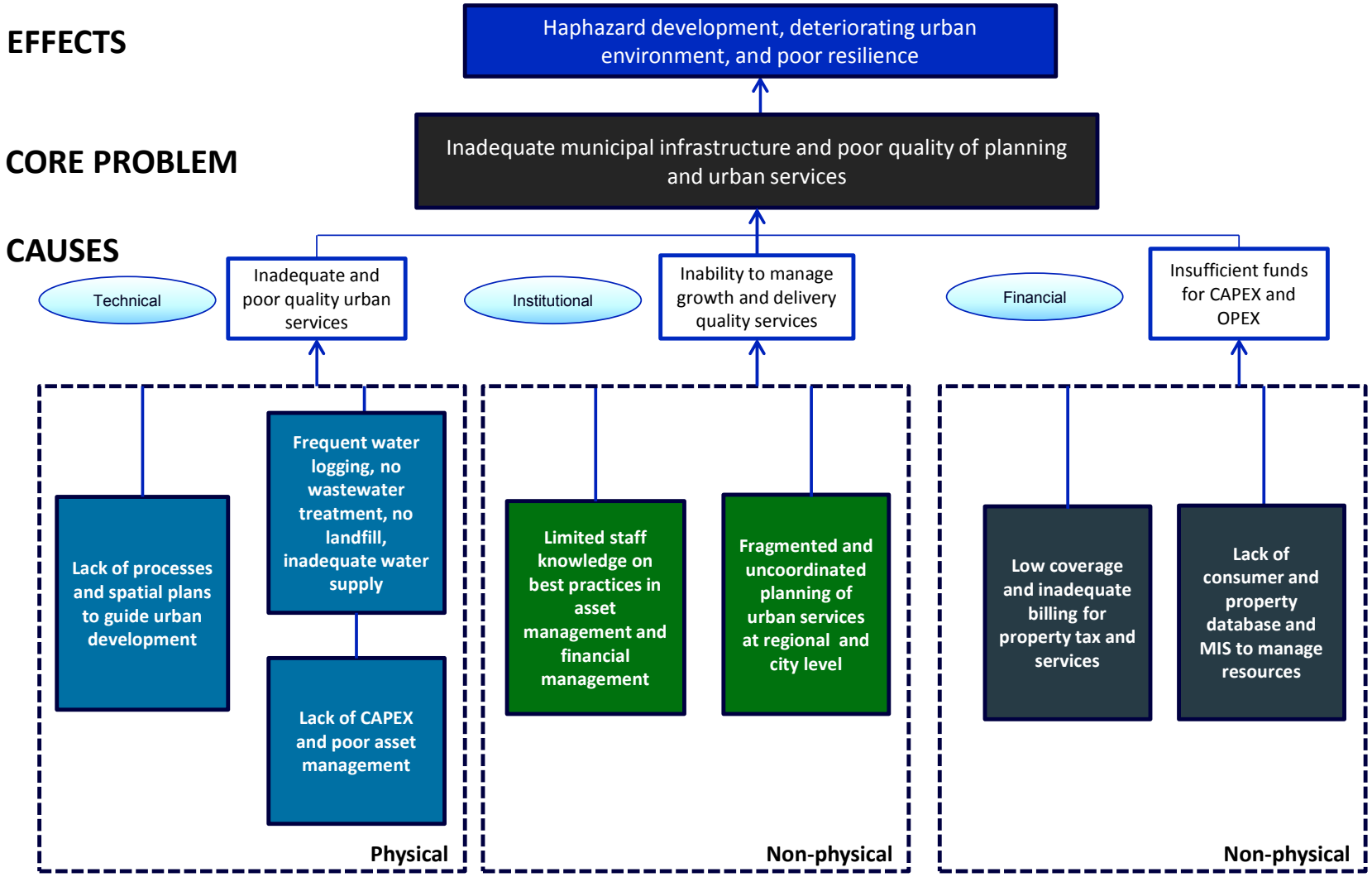
Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanism	Assumptions and Risks
	Dalit HH, xx% women headed HHs, xx% poor HHs and xx% Hhs of socially excluded groups) from 22% in 2015 Xx% roads, bicycle lanes and roads with street lights are in areas with higher population of excluded social groups		
Outputs 1. Urban infrastructure constructed and/ or upgraded in Attariya, Bheemdatt, Dhangadhi and Jhalari Pipaladi	By 2021: 10 Deep Tube wells and 140 km of water main constructed with 9000 additional households (with disaggregation) connected to piped water supply 4 wastewater management systems including septage treatment facilities constructed Regional or municipality-level resource recovery centers (landfills) handling a total of about 90 ton/day of waste for disposal and treatment developed with a 30+ year service life for regional landfill 16 km of storm water drains rehabilitated and 85 km of new drains constructed 98.5 km of roads constructed or improved 15 km of bicycle lanes created 60 km roads with street lights 2 Bus / Vehicle parking lots with public facilities created 2 new municipal offices	**For all indicators:** Municipality data compiled in project monitoring reports Sex and caste/ethnicity disaggregated baseline survey at project inception and annually	**Risks** There is continued absence of elected mayors and frequent transfer of Executive Officers in municipalities Local community opposes some facilities (e.g. landfills)
2. Improved and GESI responsive operational effectiveness of the municipalities of Attariya, Bheemdatt, Dhangadhi and Jhalari Pipaladi	Computerized accounting and billing and collection systems for integrated property tax, professional/business tax and other municipal major revenues and services in the project municipalities A total of 50 trainings conducted on urban planning, service delivery, municipal finance (emphasis on Revenue Improvement Action Plan – RIAP, new accounting system –	Reports issued by project municipalities, MOUD, MOFALD, LBFC (Local Body Fiscal Commission) and Municipal Association of Nepal (MuAN)	**Risks** There is a continued absence of elected mayors and frequent transfer of Executive Officers in municipalities Staff resistance encountered and/or low priority given in the project municipalities to new

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanism	Assumptions and Risks
	municipal assets valuation etc), and GESI with at least 1000 participants (33% women) from MOUD and the municipality staff Planning and project implementation is guided by the GESI, MOUD-approved Land Use Plan, and the master plans for water supply, wastewater management, drainage, and solid waste management Municipal office buildings in Attariya and Jhalari Pipaladi constructed in a gender and disabled friendly manner and furnished. A GESI unit established/strengthened in all four municipalities Municipality rules, systems and processes reviewed and revised to integrate GESI in all 4 municipalities.		concepts and incorporation of GESI

Activities with Milestones	Inputs
1. Improved urban infrastructure constructed and/or upgraded in Attariya, Bheemdatt, Dhangadhi and Jhalari Pipaladi 1.1 Establish central and regional steering / coordinating committees (2015) 1.2 Identify land for regional and/or municipal landfills (2015) 1.3 Design approach for improving services in low-income communities (2016) 1.4. Award the DSC contract (Q1. 2016) 1.5 Undertake surveys and investigations (Q2. 2016) 1.6 Undertake public outreach programs (Q2. 2016) 1.7 Prepare municipality urban development plans (Q2. 2016) 1.8 Develop water supply, wastewater and solid waste management, roads and drainage master plans and capital investment plans (Q1. 2017) 1.9 Award civil works contracts (Q2. 2017) 1.10Complete physical works (Q2. 2021) **2. Improved operational effectiveness of the municipalities of Attariya, Bheemdatt, Dhangadhi and Jhalari Pipaladi** 2.1 Undertake capacity assessment of municipalities (2015) 2.2 Conduct trainings in urban planning, municipal finance, urban service delivery, asset management, GESI and environmental management (2016) 2.3 Develop and deliver training programs on GESI for municipal staff and PIU (2016) 2.4 Finalize asset management and land use plans in the municipalities (2017) 2.5 Computerize accounting, billing and collection systems in the municipalities (2017) 2.6 Launch community awareness campaign on reduce, reuse, recycle (2017) 2.6 Conduct awareness campaign for improving property tax payments (2018) 2.7 Complete property database and valuation (2019)	**Inputs** ADB : $70 million Cofinancier (TBD): $24 million Government: $15 million Municipalities and beneficiaries: $6 million

ADB = Asian Development Bank, DSC = design and supervision consultant, FHH = female headed household, FWRN = Far Western Region of Nepal, km = kilometers, GESI = gender equality and social inclusion, HHs = households, MLD = million liters per day, MOFALD = Ministry of Federal Affairs and Local Government, MOUD = Ministry of Urban Development, PIU = project implementation unit, SWM = solid waste management, TBD = to be determined, WWTP = wastewater treatment plant.
Sources: Government of Nepal, Asian Development Bank and TA estimates.

Attachment 2: Problem Tree for Municipalities in Far Western Region



CAPEX = capital expenditure, MIS = management information system, OPEX = operations expenditure

Source: World Bank. Urban Growth and Spatial Transition in Nepal: An Initial Assessment. Washington D.C.

Attachment 3: Data Sheet – Identified Priority Urban Infrastructure Components

Attariya

Sector	Description
Water Supply	Rehabilitation of existing in wards 2, 3, 4 & 13. Households 2,200 New Deep Tubewells/ Treatment/ OHT/ distribution Serving wards 5, 6 & 7. Households approx. 2,500
Wastewater Management	Improvements to existing on-site wastewater management New small bore sewerage and DEWATS site(s) Serving wards 3, 4 & 13. Households approx. 2,000
Solid Waste Management	Strategic waste prevention plus reduce, reuse and recycle. Integrated solid waste management (ISWM) system with landfill site Serving wards 2, 3, 4, 5, 6, 7, 11, 12 & 13. Households approx. 6,600
Roads and Drainage	In wards 2, 5, 6, 7, 10 & 12. Approx. length 20.0 km.
Municipality Facilities	1. Municipality building
	2. Bus park

Bheemdatt

Sector	Description
Water Supply	Rehabilitation of existing in wards 1, 2, 3, 4, 6, 7, 8, 9 & 18. HHs 5,400 New Deep Tubewells/ Treatment/ OHT/ distribution Serving wards 5, 8, 10, 11 & 17. Households approx. 2,500
Wastewater Management	Improvements to existing on-site wastewater management New small bore sewerage and DEWATS site(s) Serving wards 4, 6, & 18. Households approx. 2,000
Solid Waste Management	Strategic waste prevention plus reduce, reuse and recycle. Integrated solid waste management (ISWM) system with landfill site Serving wards 1 to 11 and 15 to 18. HHs approx. 10,700
Roads and Drainage	In wards 1, 3, 4, 8, 9, 10, 11, 12, 15, 16, 17 & 18. Approx. length 36.5km.
Municipality Facilities	1. Tourist Information Centre
	2. Cremation site

Dhangadhi

Sector	Description
Water Supply	Rehabilitation of existing in wards 1, 2, 3, 4, 7 & 8. HHs 6,500 New Deep Tubewells/ Treatment/ OHT/ distribution Serving wards 11 & 12. Households approx. 2,000
Wastewater Management	Improvements to existing on-site wastewater management New small bore sewerage and DEWATS site(s) Serving wards 1, 2, 3, 4, 5 & 8. Households approx. 3,000
Solid Waste Management	Strategic waste prevention plus reduce, reuse and recycle. Integrated solid waste management (ISWM) system with landfill site Serving wards 1, 2, 3, 4, 5, 8 & 13. HHs approx. 10,000
Roads and Drainage	In wards 1, 2, 3, 4, 5, 6, 8, 10, 12 & 13 Approx. length 34.0 km.
Municipality Facilities	1. Bus/ vehicle park
	2. Municipal building improvements
	3. Development of Jakhor Lake Area

Jhalari Pipaladi

Sector	Description
Water Supply	Rehabilitation of existing in wards 10 & 11. HHs 200 New Deep Tubewells/ Treatment/ OHT/ distribution Serving wards 3, 4, 5, 6 & 7. Households approx. 2,000
Wastewater Management	Improvements to existing on-site wastewater management New small bore sewerage and DEWATS site(s) Serving wards 10 & 11. Households approx. 400
Solid Waste Management	Strategic waste prevention plus reduce, reuse and recycle. Integrated solid waste management (ISWM) system with landfill site Serving wards 3, 4, 5, 6, 7, 9, 10 & 11. HHs approx. 3,400
Roads and Drainage	In wards 4, 9, 10 & 11. Approx. length 8.0 km.
Municipality Facilities	Municipality building

Attachment 4: Status of Land Requirements and Dependency (August 2015)

Attariya

Sector	Description	Dependency/ Remarks
Water Supply	Tubewells/ Treatment/ OHT	Hydro-geological survey
Wastewater Management	Small bore sewerage and DEWATS sites	Waste water management assessment/ master plan and topographical survey
Solid Waste Management	Final disposal site	**Site identified**. Ownership to be determined. Likely requires land transfer from Forest Department.
Roads and Drainage	Right-of-Way	Checking of land ownership records
Municipality Facilities	1. Municipality building	Alternative sites identified. **Owner of preferred site agrees to provide**. Municipality to confirm final site.
	2. Bus park	**Site identified.** Requires land transfer from Forest Department.

Bheemdatt

Sector	Description	Dependency/ Remarks
Water Supply	Tubewells/ Treatment/ OHT	Hydro-geological survey
Wastewater Management	Small bore sewerage and WWTP site	Waste water management assessment/ master plan and topographical survey
Solid Waste Management	Final disposal site	**Site identified**. Likely requires land transfer from Forest Department.
Roads and Drainage	Right-of-Way	Checking of land ownership records
Municipality Facilities	1. Tourist Information Centre	**Existing tourism board site**
	2. Cremation site	**Riverside site identified.** Government ownership to be verified.

Dhangadhi

Sector	Description	Dependency/ Remarks
Water Supply	Tubewells/ Treatment/ OHT	Hydro-geological survey
Wastewater Management	Small bore sewerage and WWTP site	**WWTP Site Identified.** Ownership to be determined. Waste water management assessment/ master plan and topographical survey.
Solid Waste Management	1. Sorting/ Transfer station 2. Final disposal site	**1. Municipal land** **2. Sites identified**. Ownership to be determined and municipality to finalize site (subject to safeguards clearance).
Roads and Drainage	Right-of-Way	Checking of land ownership records
Municipality Facilities	1. Bus/ vehicle park	Alternative sites. Urban development plan/ traffic surveys
	2. Municipal building improvements	**Existing Municipal land**
	3. Development of Jakhor Lake Area	**Government land**

Jhalari Pipaladi

Sector	Description	Dependency/ Remarks
Water Supply	Tubewells/ Treatment/ OHT	Hydro-geological survey
Wastewater Management	Small bore sewerage and DEWATS sites	Waste water management assessment/ master plan and topographical survey
Solid Waste Management	Final disposal site	**Site identified**. Requires land transfer from Forest Department.
Roads and Drainage	Right-of-Way	Checking of land ownership records
Municipality Facilities	Municipality building	**Municipal/ Government land.** Requires additional land. Municipality to secure land.