

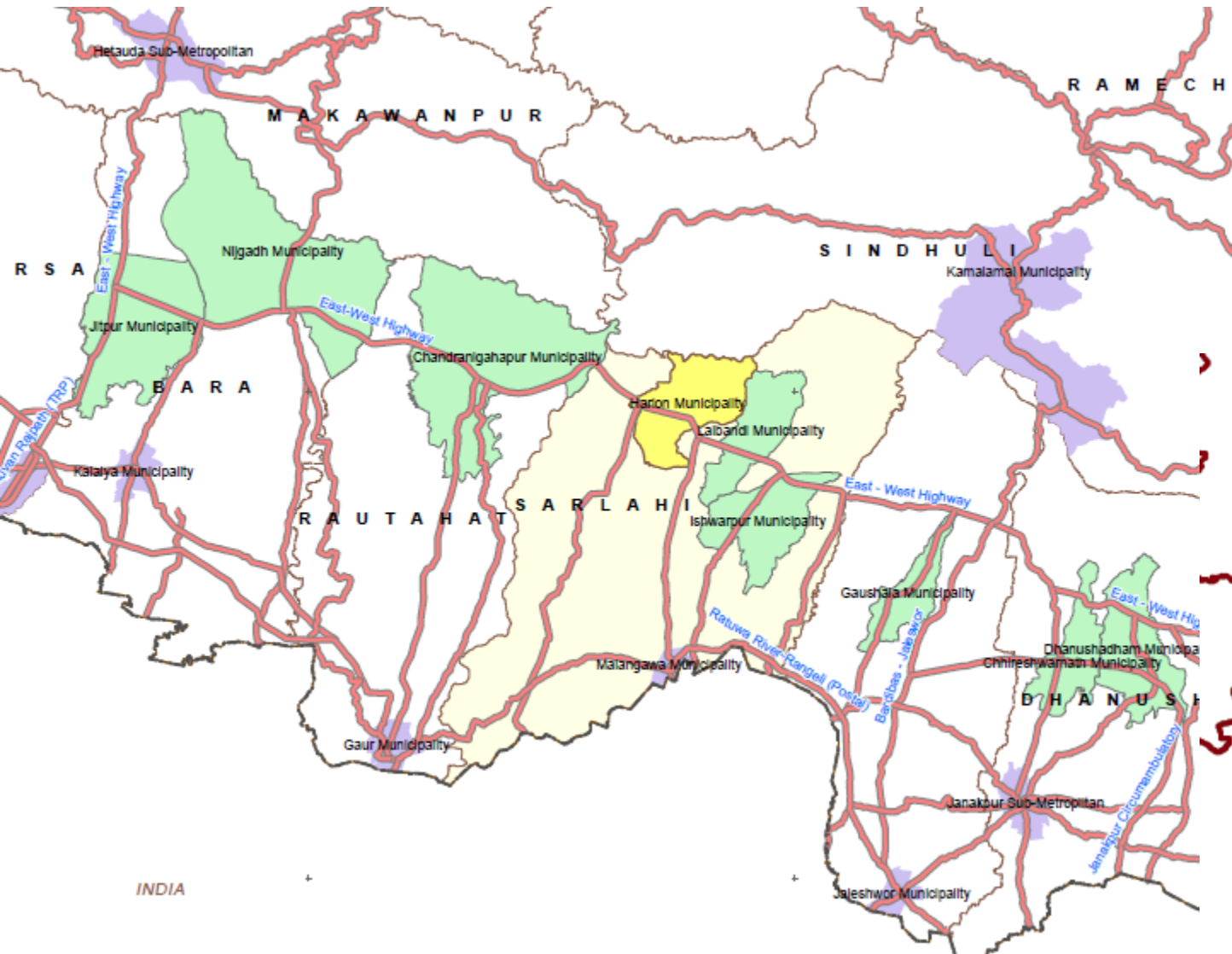
A PRESENTATION ON MUNICIPAL TRANSPORT MASTER PLAN

OF
HARION MUNICIPALITY
Sarlahi

NEST (P.) Ltd



Location Map



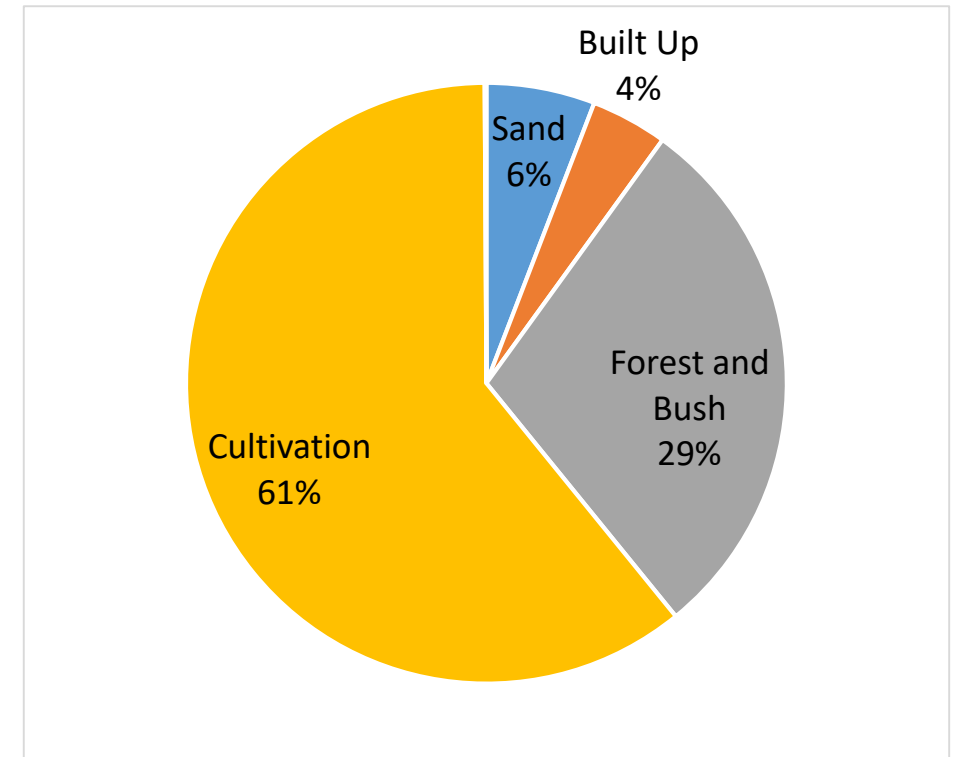
Sarlahi District
Area: 86.12 sq. km
42,783 Population (Census 2068)



Municipality Profile:

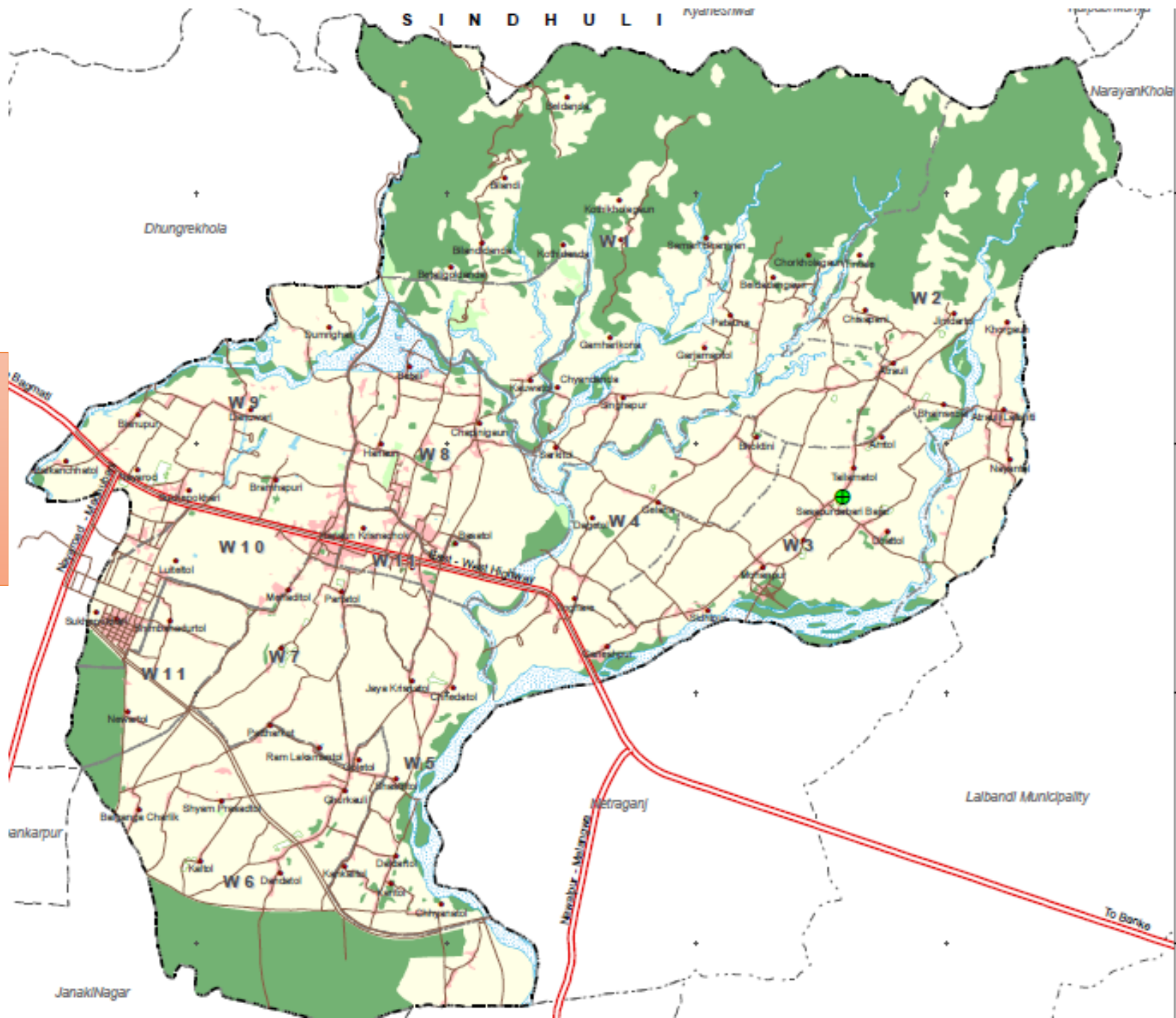
Population Density: 497 people per sq. km,
Lower than the overall population density of
Sarlahi district (612 people/ sq.km.)

Ward	Population	Area (Sq. Km)	Population Density (Persons/Sq.km)	Built up Area (sq.km.)	Usable Area (sq.km)
1	3,470	22.94	152	0.21	8.83
2	3,001	10.61	283	0.2	5.37
3	3,211	6.43	500	0.24	5.23
4	3,186	5.78	551	0.21	4.83
5	3,670	4.97	739	0.24	3.96
6	3,371	10.57	320	0.35	6.64
7	2,524	3.38	747	0.15	3.33
8	4,901	5.1	961	0.5	4.05
9	3,675	9.9	372	0.58	8.07
10	4,543	2.69	1,691	0.44	2.52
11	7,231	3.77	1,921	0.39	2.99

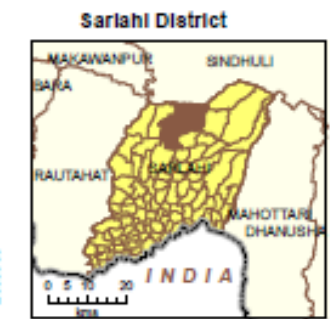
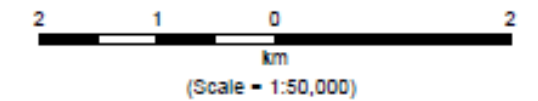


Forest (29%) and
Cultivation area (61%)

LAND USE MAP:



Municipal Transport Master Plan (MTMP) Land Use Map



- Legend**
- Ward boundary
 - Municipal boundary
 - VDC boundary
 - District boundary
- Landcover**
- Barren Land
 - Built Up
 - Bush
 - Cliff
 - Cultivation
 - Forest
 - Nursery and Orchard
 - Waterbody
 - Sand
 - Road Network
 - Strategic Road Network

Coordinate System: Modified UTM 87
Projection: Transverse Mercator
Datum: Everest Adj 1937
false easting: 500,000.0000
false northing: 0.0000
central meridian: 87.0000
scale factor: 0.9999
latitude of origin: 0.0000
Units: Meter

WHAT IS ON MTMP

Process of Identification, classification and prioritization of roads within municipality; construction, upgrading, maintenance and rehabilitation of prioritized roads on the basis of approved criteria with calculation of financial budget.

- Prepare the Municipality Inventory Map(MIM) of all road networks.
- Prepare Indicative Development Potential Map (IDPM).
- Finalise visionary city development plan
- Identify and prioritize the interventions based on mobility and accessibility situation.
- Scoring criteria development and its approval from Municipality.
- Prepare the Perspective Plan of transport services and facilities (Municipal Transport Perspective Plan)
- Prepare physical and financial implementation plan of roads for the MTMP period.
- Prepare five years Municipal transport master plan (MTMP).

Methodological Steps:

1. Secondary data Collection
2. Orientation and MRCC Formulation
3. Primary Data Collection
 - Road Inventory Survey
 - Ward Demand Form
 - HH Survey
 - Classified Vehicle Count
 - Municipal Budget
4. Preparation of Different Types of Maps
5. Formulation of Road Hierarchy
6. Field Data Analysis & Field Report Presentation
7. Analysis and Financial Calculation
8. Draft Report Presentation
9. Final Report

मिति: २०७२/०५/०५ गते

नगरपालिकाको नगर यातायात गुरुयोजनाका लागि घरधुरी सर्वेक्षण

प्रश्नावली संख्या: _____

प्रश्न पत्र भरनेको नाम: हरिबन्धु

१. तपाईंको घरको (हाल बसोबास गरिरहेको स्थान) विवरण सिद्धिपुर (टोल/बस्तीको नाम) वडा नं: ३

२. तपाईंको परिवारमा कति सवारी साधन छन्? (निज सवारी साधन मध्येको खण्डमा X लेख्नुहोस्) कार: X मोटरसाइकल: १ साइकल: X अन्य: X

३. तपाईंको घरदेखि नजिकको बस स्टप सम्म पुग्न लाग्ने समय: करिब १५ मिनेट (न्यूनतम/अधिक)

४. तपाईंको परिवारको मासिक कूल आम्दानी कति हुन्छ (हजारमा)? ☐ २० भन्दा कम ☐ २० देखि ३० सम्म ☒ ३० देखि ४० सम्म ☐ ४० देखि ६० सम्म ☐ ६० भन्दा बढि

५. यात्रा विवरण तालिका

सदस्य	उमेर	लिंग (M/F)	बैथारिक स्थिति (Y/N)	शिक्षा (क)	पेशा (ख)	यात्रा तय गरेको ठाउँ (पहिलो)			यात्रा तय गरेको ठाउँ (दोस्रो, यदि गरेको भए मात्र)			घर फर्कदा			
						टोलको नाम	वडा नं	यात्राको उद्देश्य (घ)	टोलको नाम	वडा नं	यात्राको उद्देश्य (घ)	यात्रा गर्ने लगेको समय (मिनेट)	सवारी साधन (ग)	यात्रा गर्ने लगेको समय (मिनेट)	
१	४०	F	Y	५	५५			५	५	५					
२	४०	F	Y	५	५५			५	५	५					
३	३५	M	Y	४	४५	सिद्धिपुर		५	५	५					
४	३५	F	Y	३	३५	सिद्धिपुर		५	५	५					
५	३३	M	Y	३	३५	सिद्धिपुर		५	५	५					
६	२५	F	Y	१	१५	सिद्धिपुर/सिद्धिपुर/सिद्धिपुर		५	५	५					
७	२	M	Y												

शिक्षा (क)

१. स्कूल
२. १०+२
३. स्नातक
४. उच्चशिक्षा
५. साधार
६. निरक्षर

पेशा (ख)

१. विचारार्थ
२. नागरिक
३. कृषि
४. व्यापार व्यवसाय
५. बेरोजगार
६. अन्य

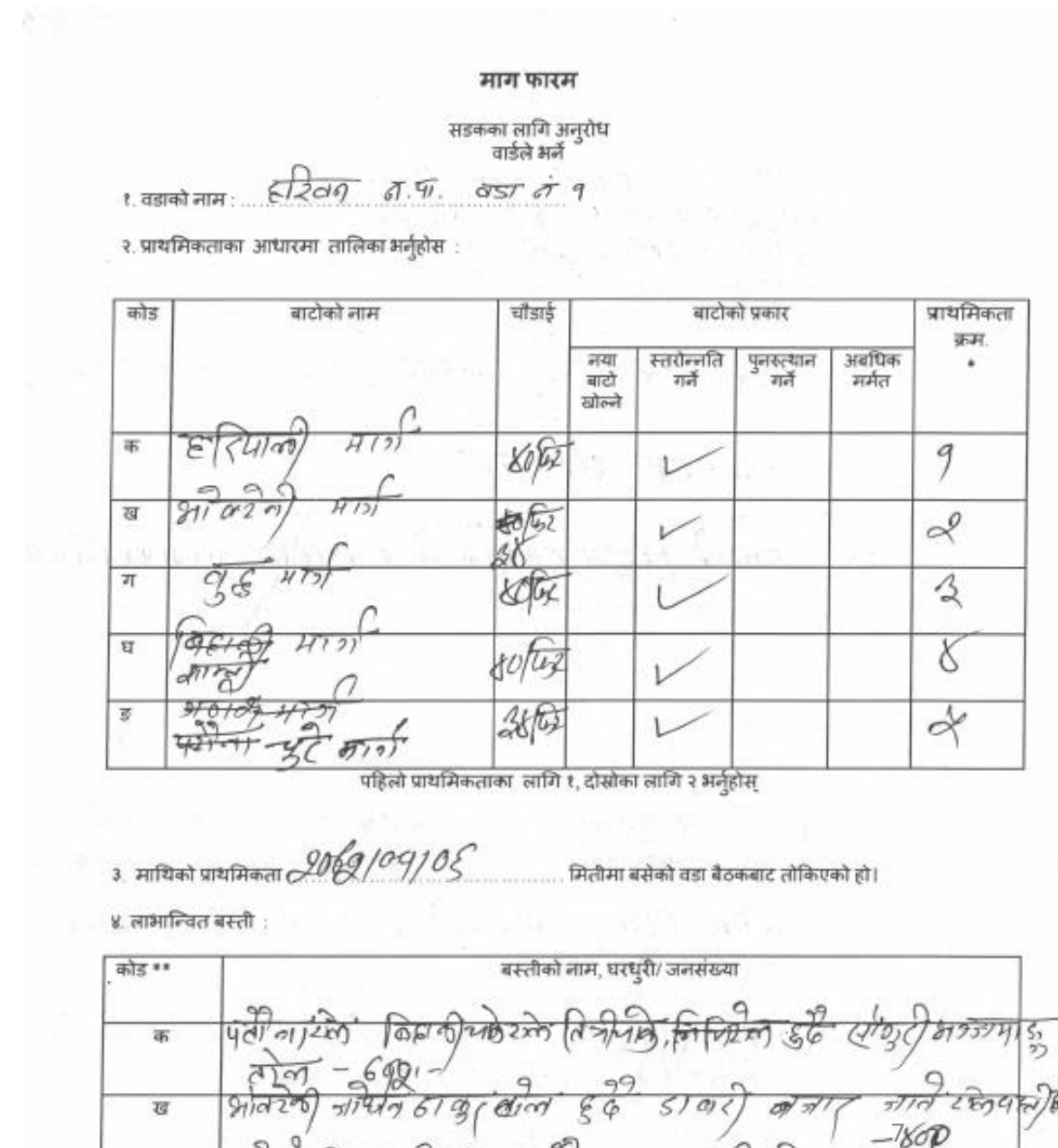
सवारी साधन (ग)

१. बस/मिनिबस/टेम्पो
२. कार/ट्याक्सी
३. मोटरसाइकल
४. साइकल/रिक्सा
५. पैदल
६. अन्य

यात्राको उद्देश्य (घ)

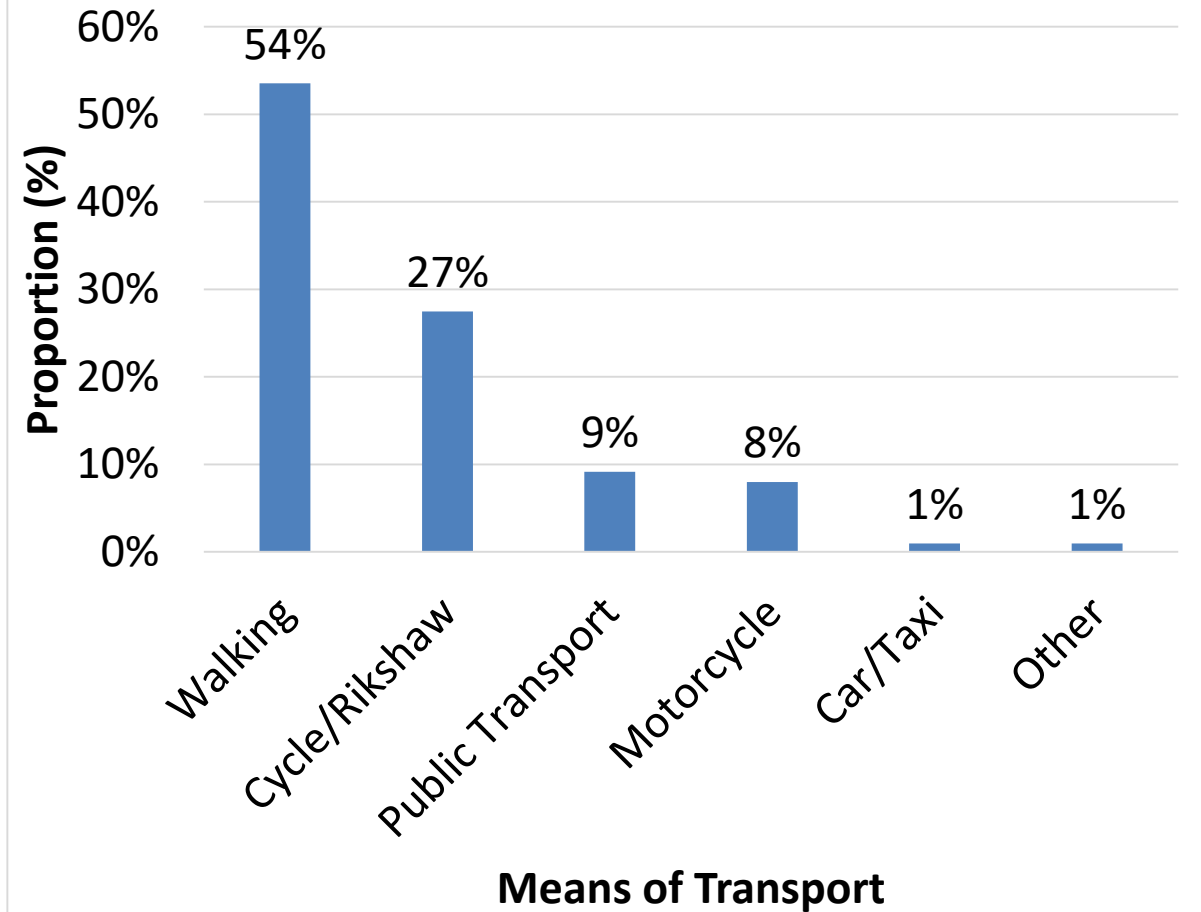
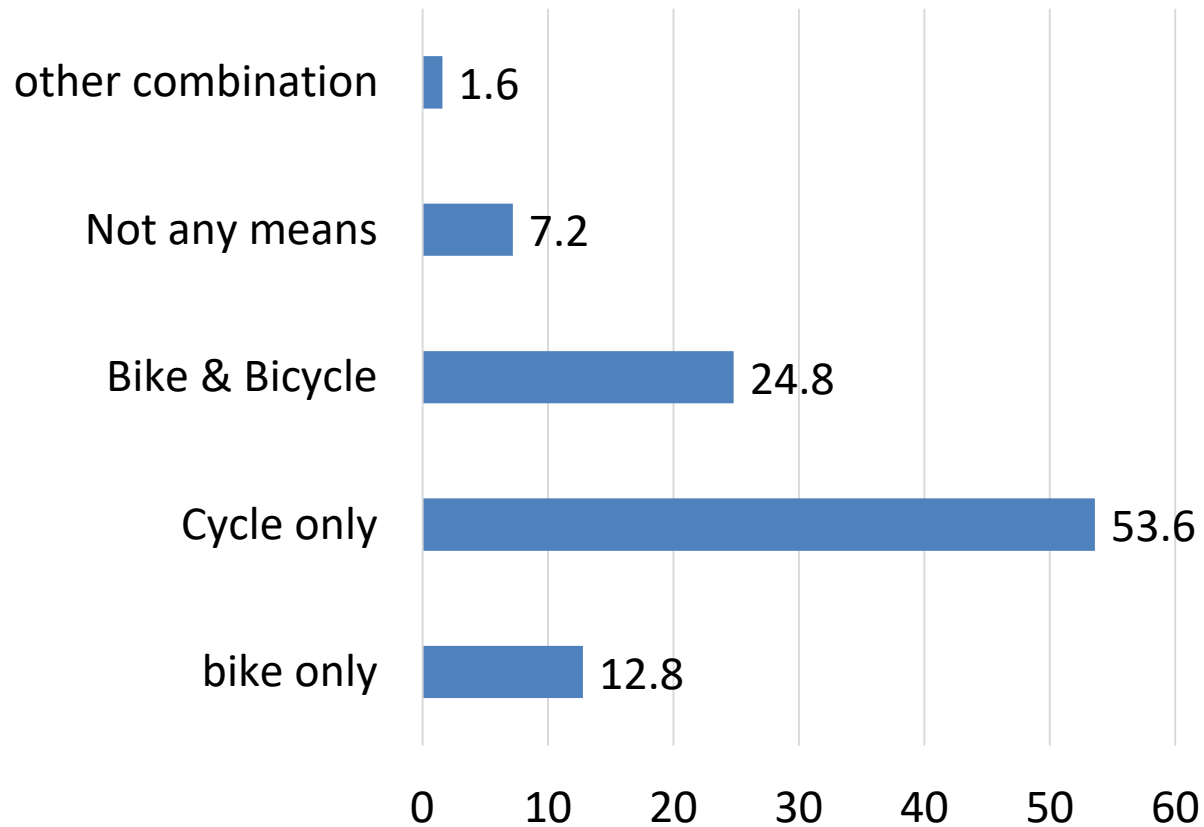
१. अफिस जानको लागि
२. पढ्न जानको लागि
३. फिमिलेसका लागि
४. मनोरन्जन/सामाजिक कार्यका लागि
५. व्यापार/व्यवसायका लागि
६. खेलमा काम गर्न

Draft Report Presentation: 2072/03/22

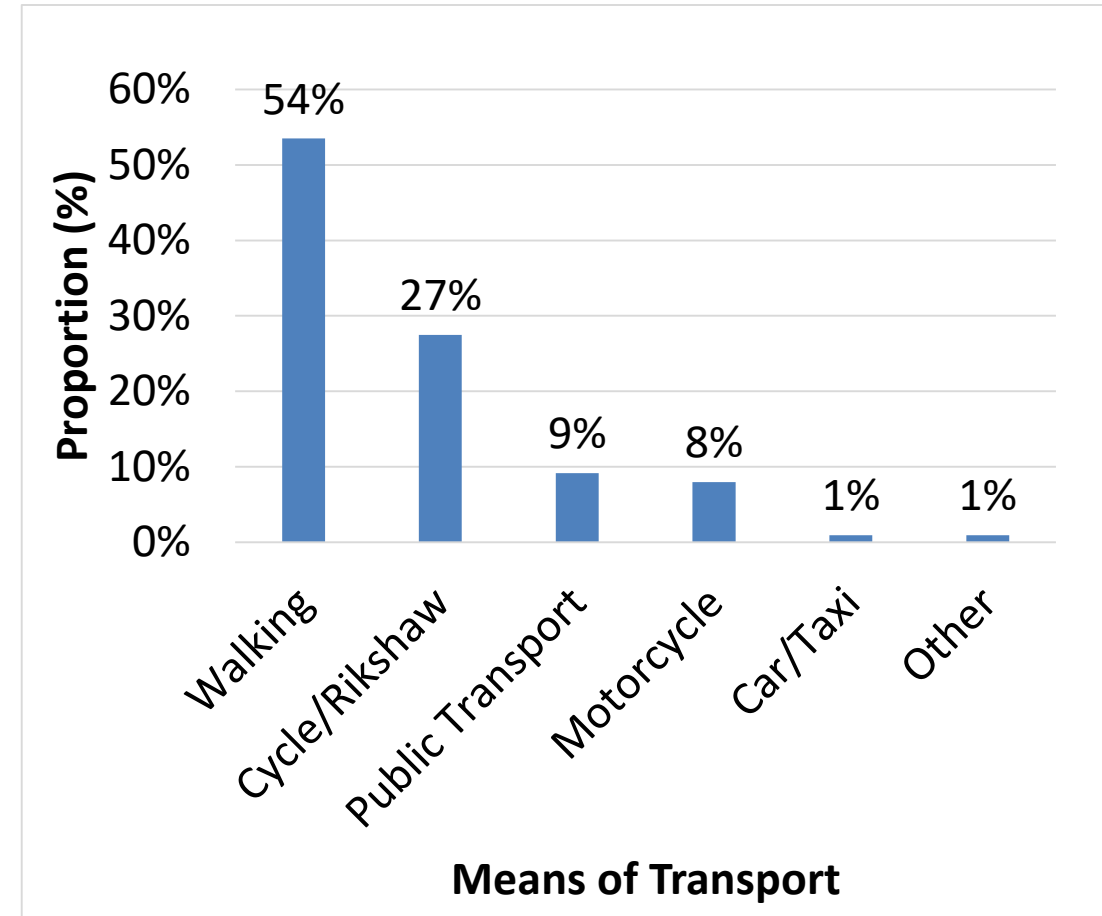
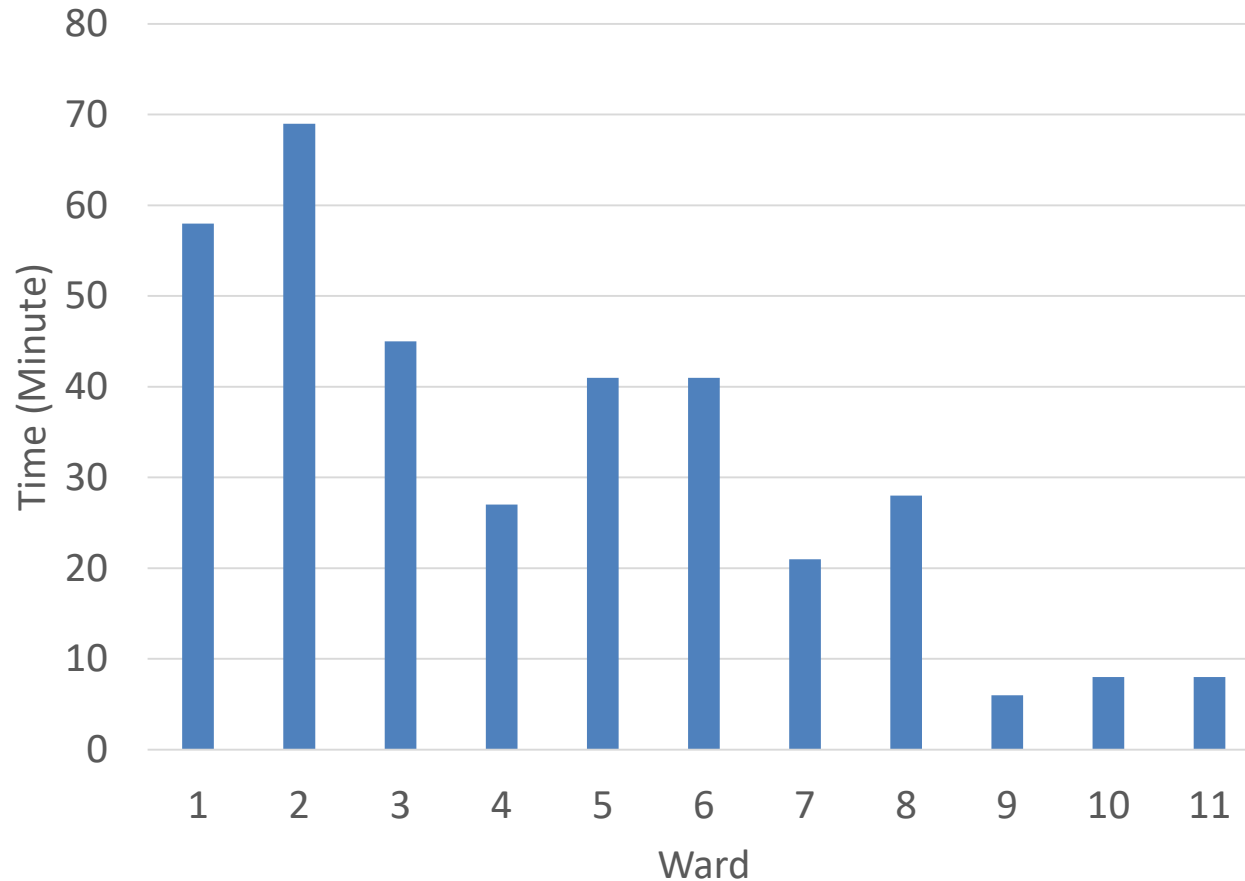


Trip Characteristics

Household with different vehicle proportion (%)



MOBILITY SCENARIO:



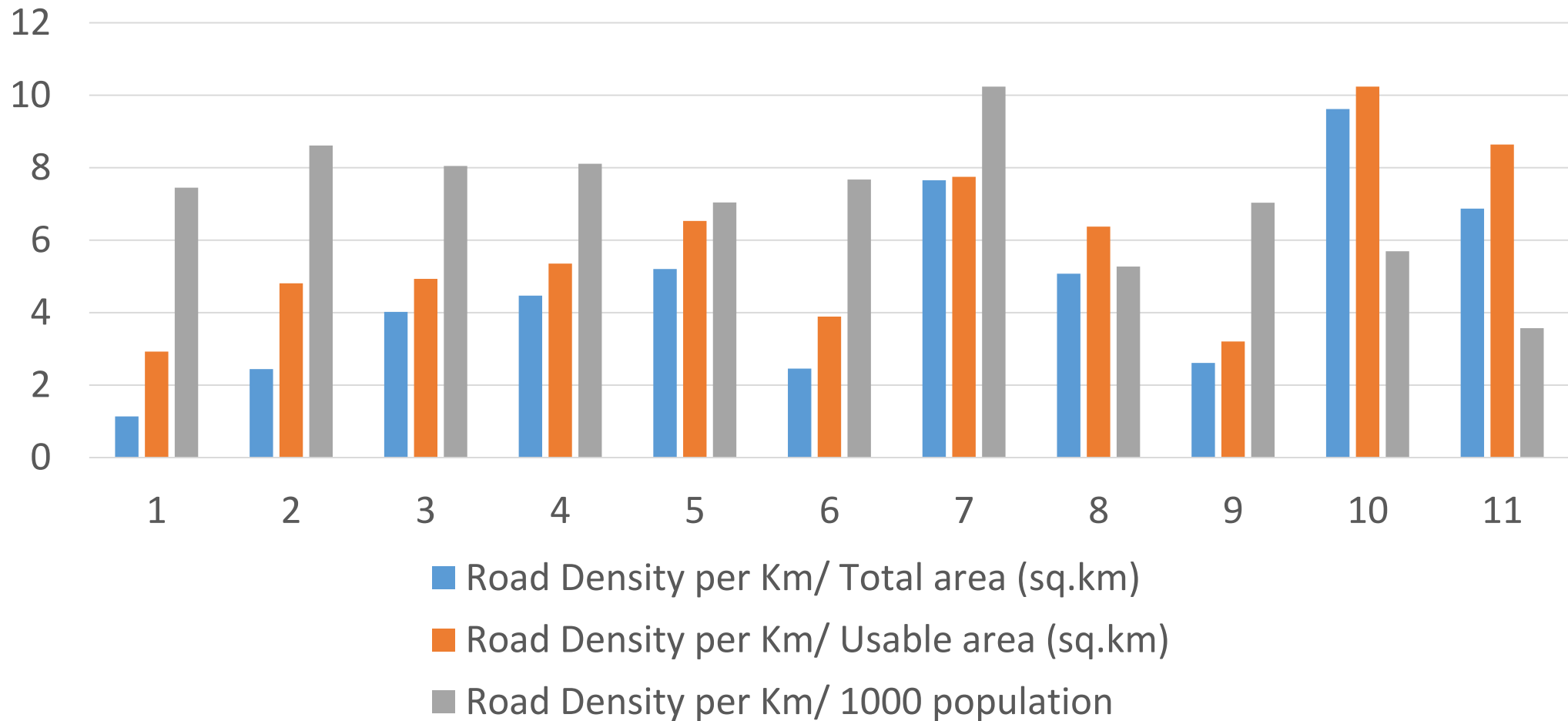
Major trip destination: Hariwan(27%), Nawalpur (5%), Sukepokhari (5%), Campus Tole, Dhurkauli, Patauna, Artauli, Nayaroad, Tinghare, Harion and bazartole.

Road Inventory:

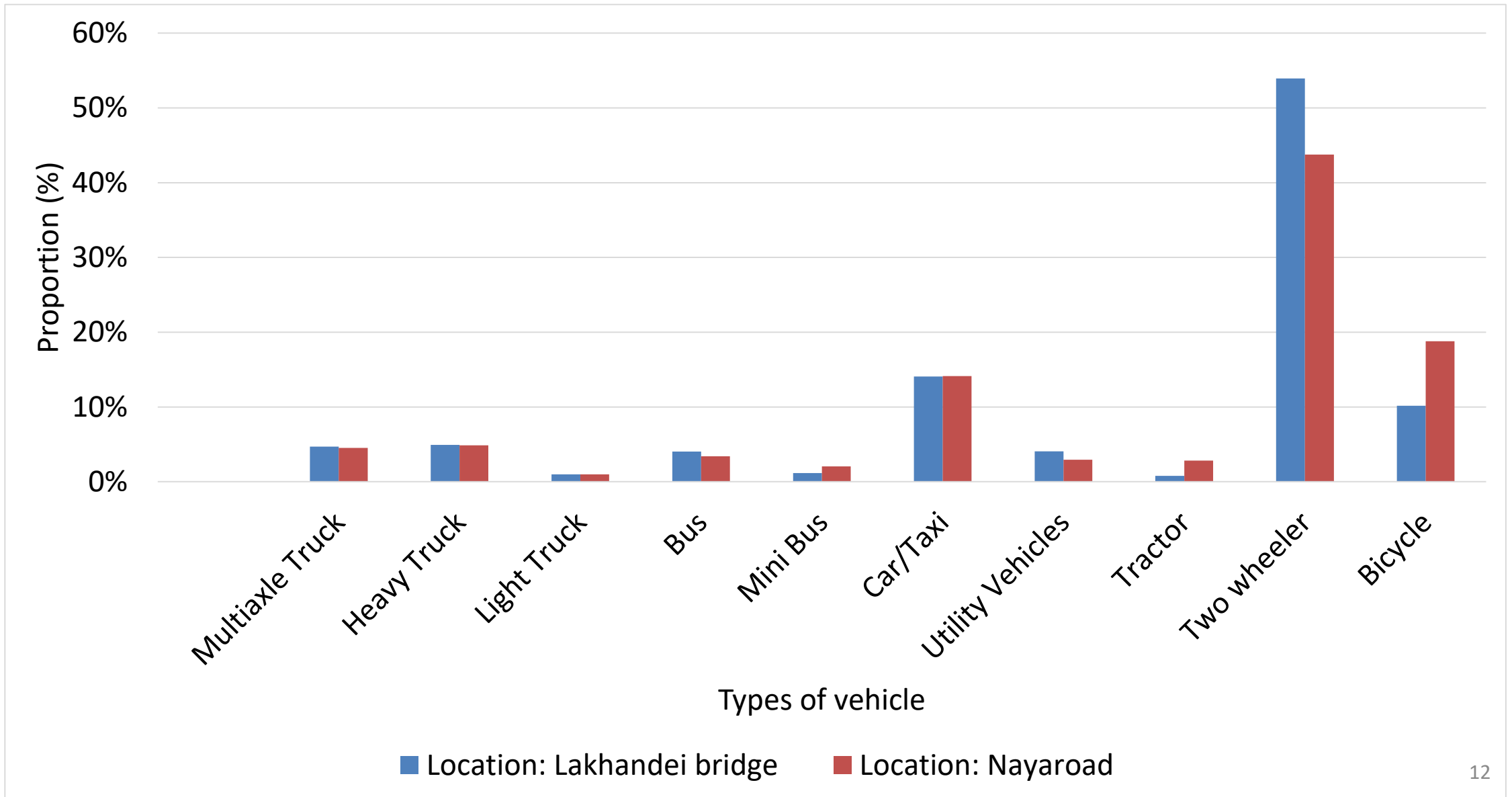
	Length of Road (Km)			
Ward	Earthen	Gravel	Metal	Total
1	0.148	25.701	-	25.850
2	1.185	13.888	-	15.074
3	1.938	14.874	-	16.813
4	2.351	12.680	1.521	16.552
5	-	16.472	-	16.472
6	0.007	31.647	-	31.654
7	0.746	9.618	-	10.364
8	1.267	19.370	-	20.637
9	-	24.773	1.680	26.452
10	-	14.051	1.866	15.917
11	0.112	14.218	2.475	16.805
Grand Total	7.754	197.294	7.542	212.59
(%)	3.65%	92.80%	3.55%	100.0%



Road Density:



Classified Vehicle Count Summary:



Visionary City Development Plan:

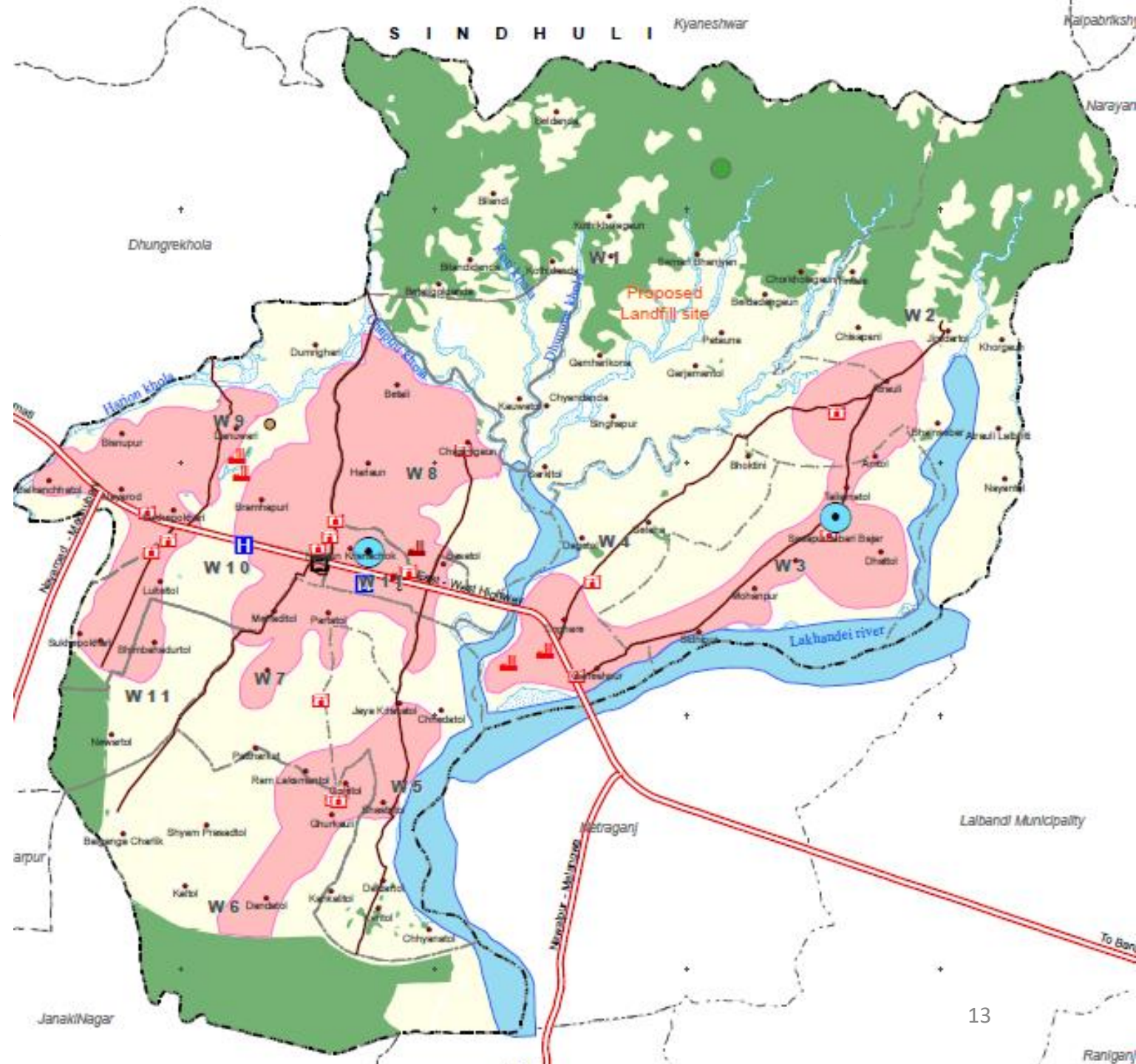
Can be developed as *service and educational hub* for entire district.

Industrial City: Indu-Shankar Chini Udhog Ltd (country's leading sugar industry) and Brijulal Chamal Udhog (Rice Mill) Hulas Ltd

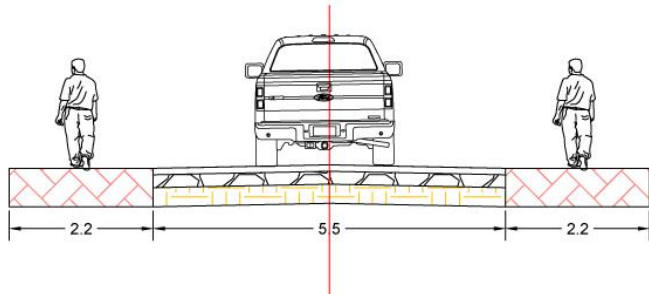
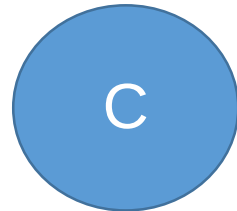
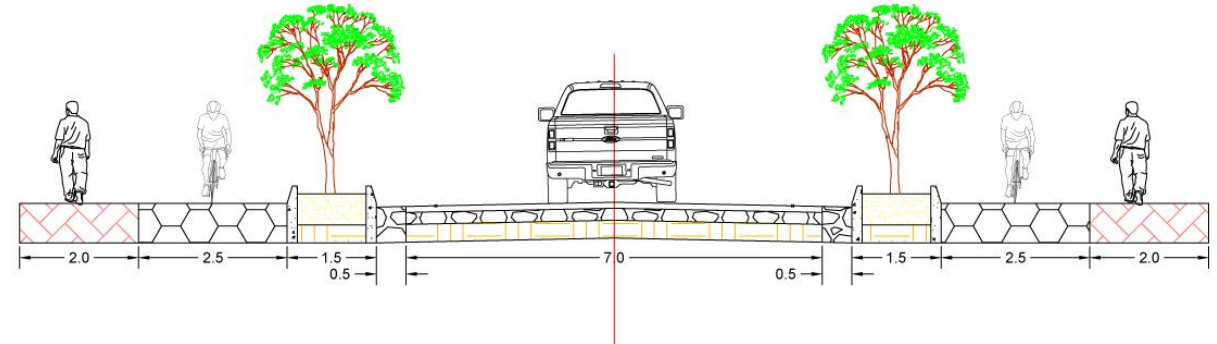
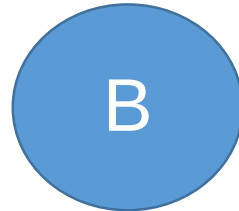
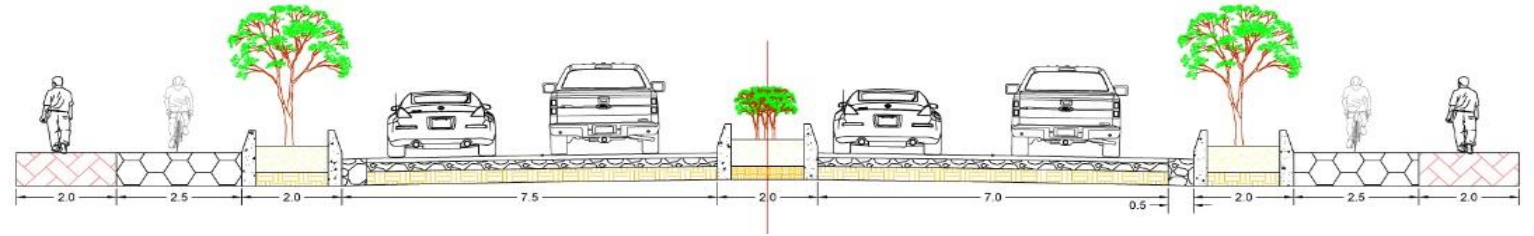
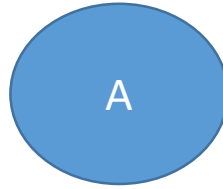
Famous for Kaligadh (कालिगढ़)

Tourism near Artouli

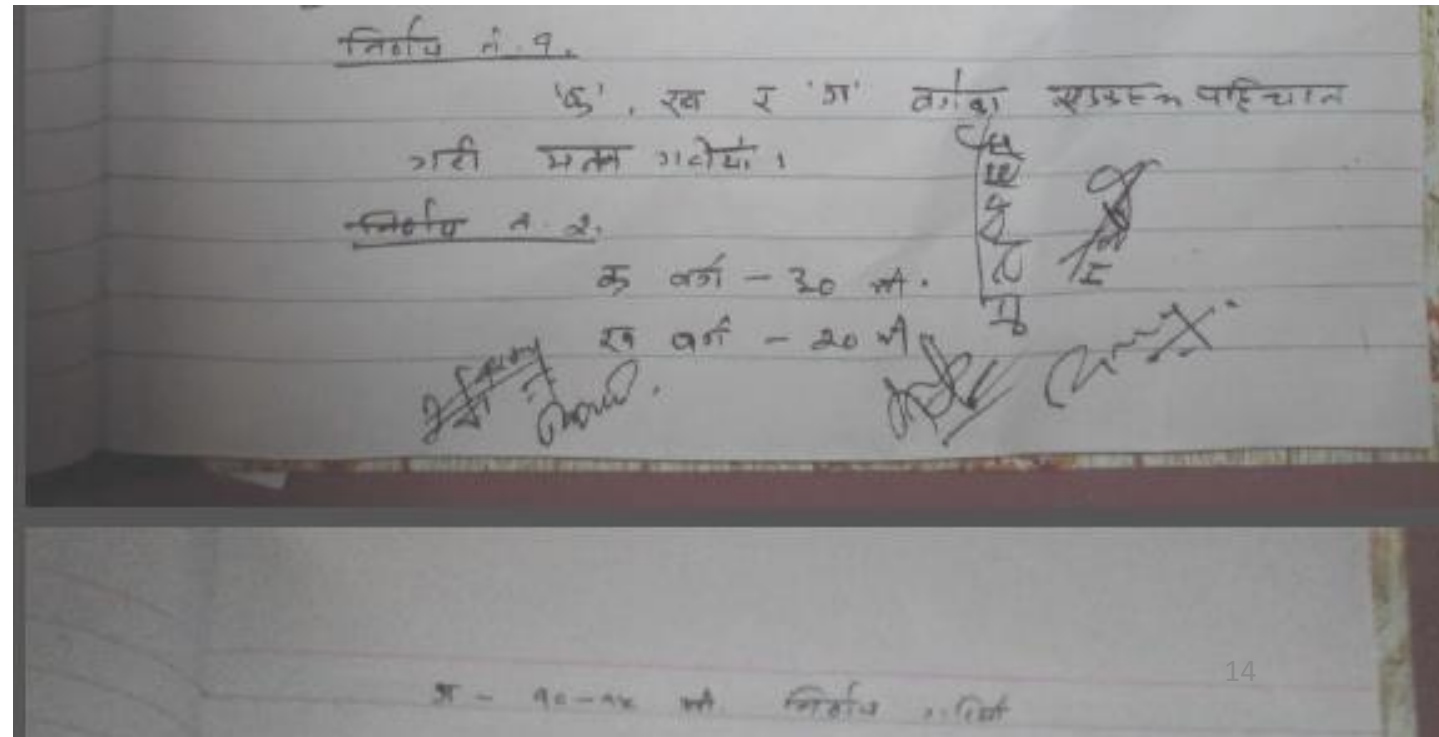
Ward 5, 6 and 7 has high agricultural value.



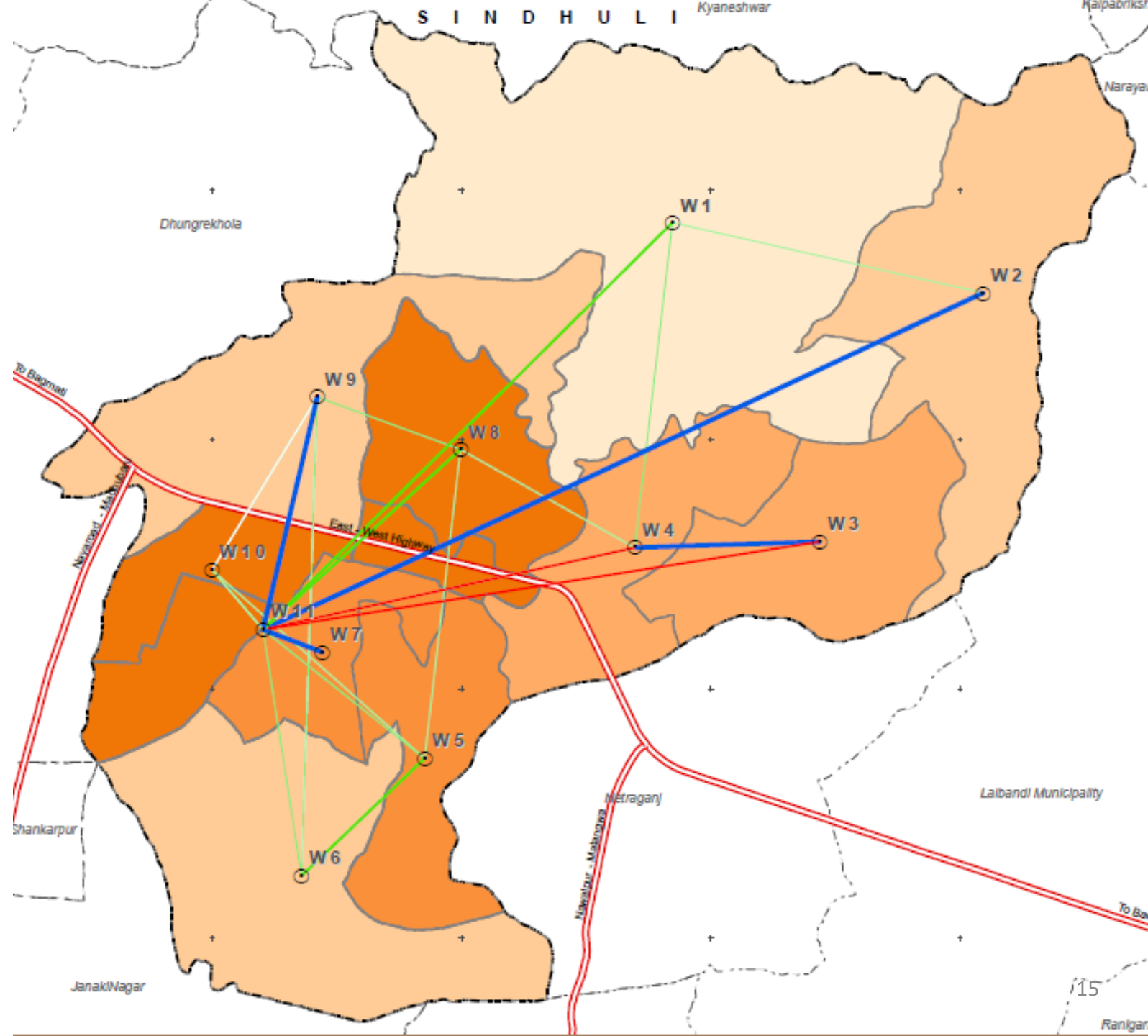
Road Hierarchy:



Class of road	Right of Way (m)	Setback distance (m)	Extra widening (m)
Class A	30	6	3
Class B	20	6	2.5
Class C	10	2	1.5
Class D	6	2	1



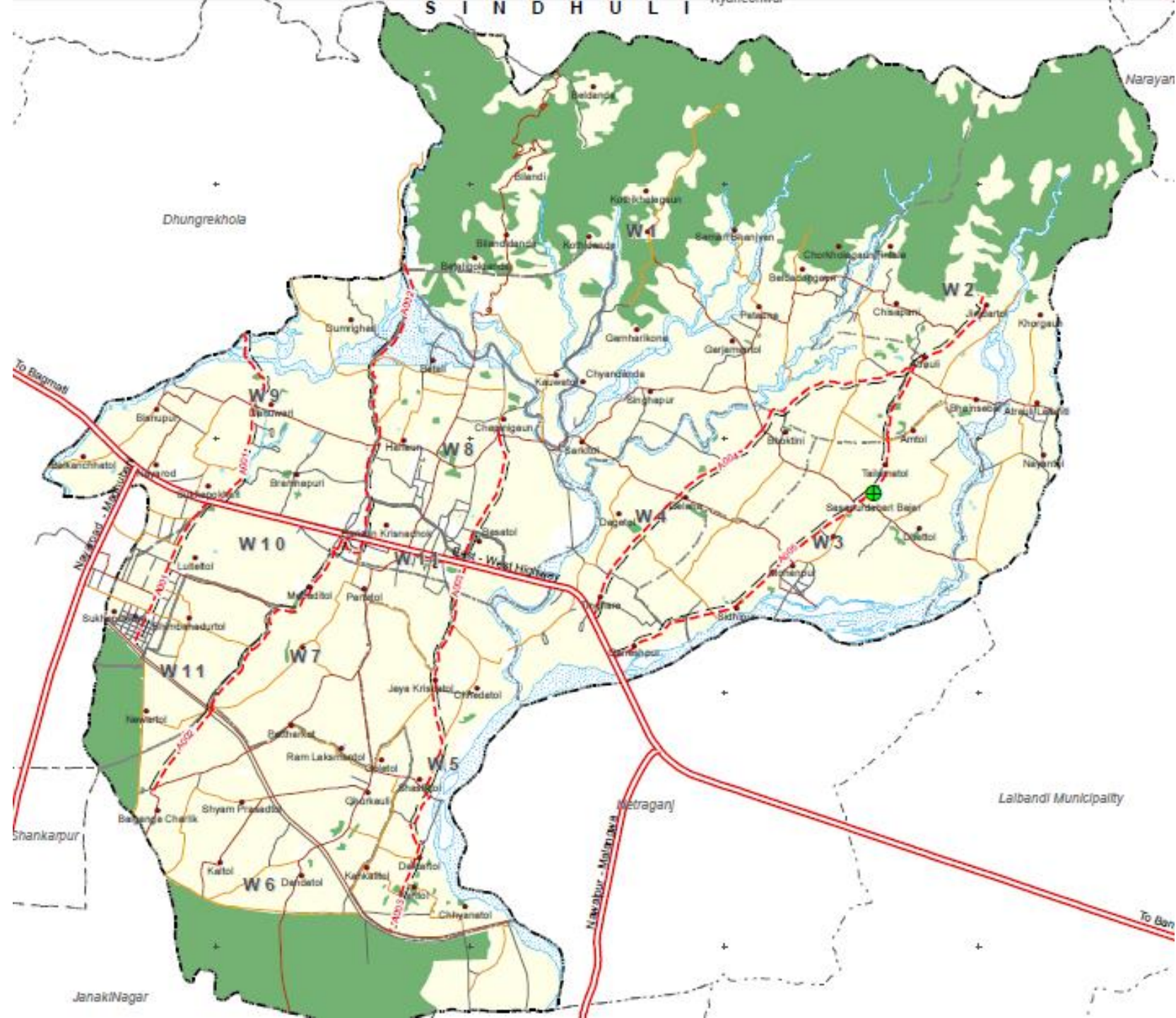
Desire Line:



Class A Roads:

SN	Municipal Code	Road Name	Wards Passed	Length (km)
1	19M02A001	Chaturbhujeshwor marga	9, 10	4.25
2	19M02A002	Bazar road	1, 6, 7, 8, 9, 10, 11	7.93
3	19M02A003	Pragati path marga	5, 6, 7, 8, 11	6.42
4	19M02A004	Shanti marga	1, 2, 4	5.13
5	19M02A005	Siddhartha marga	1, 2, 3, 4	6.6

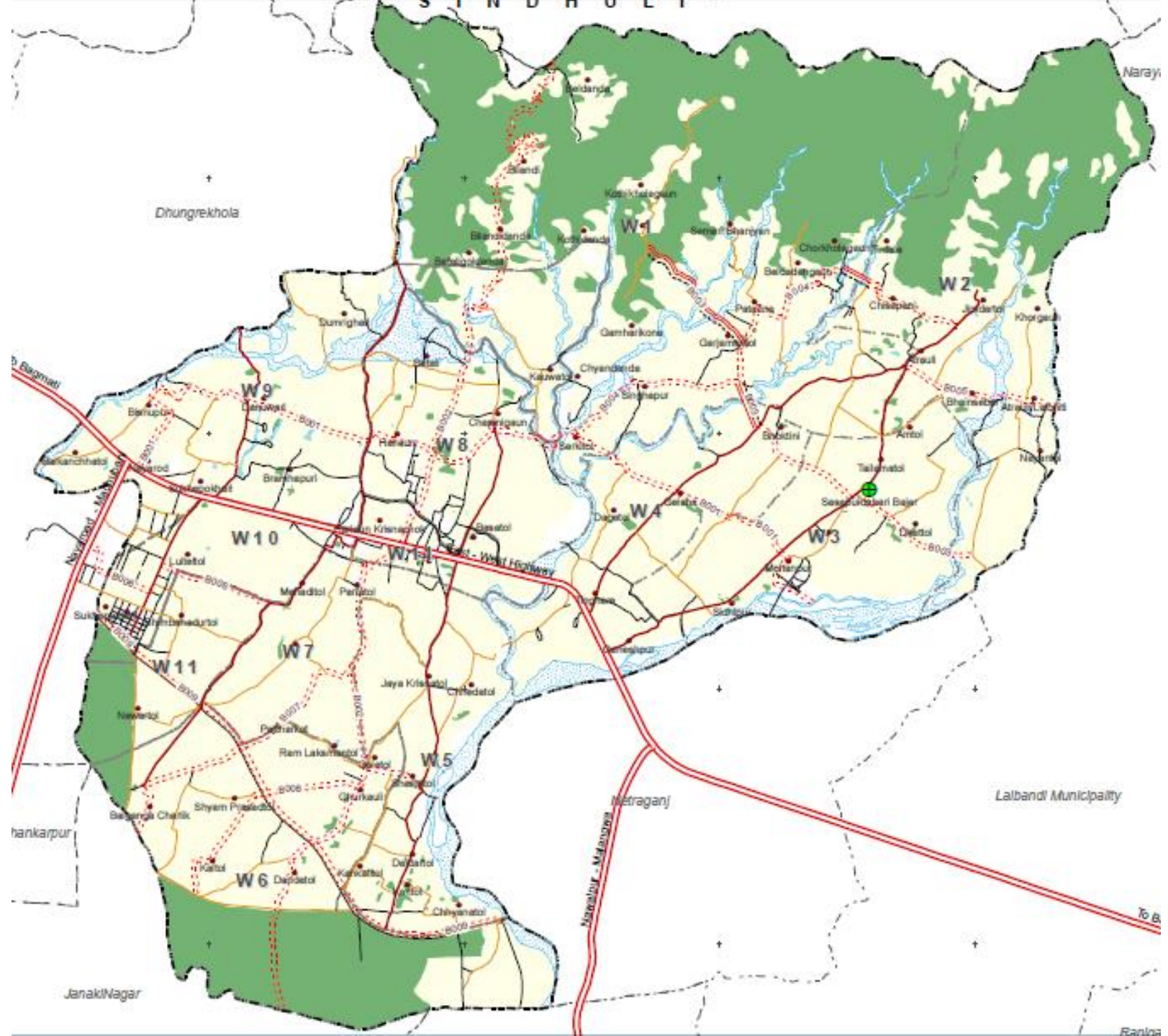
CLASS A ROADS



Class B roads

SN	Municipal Code	Road Name	Wards Pass	Length (km)
1	19M02B001	Bishnupur to Danuwari	1, 3, 4, 8, 9	10.92
2	19M02B002	Shanti Marga	1, 5, 6, 7, 8, 9, 11	14.55
3	19M02B003	Bhokteni marga	1, 2, 3, 4	5.75
4	19M02B004	Hariyali marga	1, 2	6.04
5	19M02B005	Shanti marga	2	1.91
6	19M02B006	Janaki marga	10, 11	1.89
7	19M02B007	Janaki marga	6, 7	3.66
8	19M02B008	Kopcheli marga	5, 6	3.46
9	19M02B009	Canal road	5, 6, 10	6.47

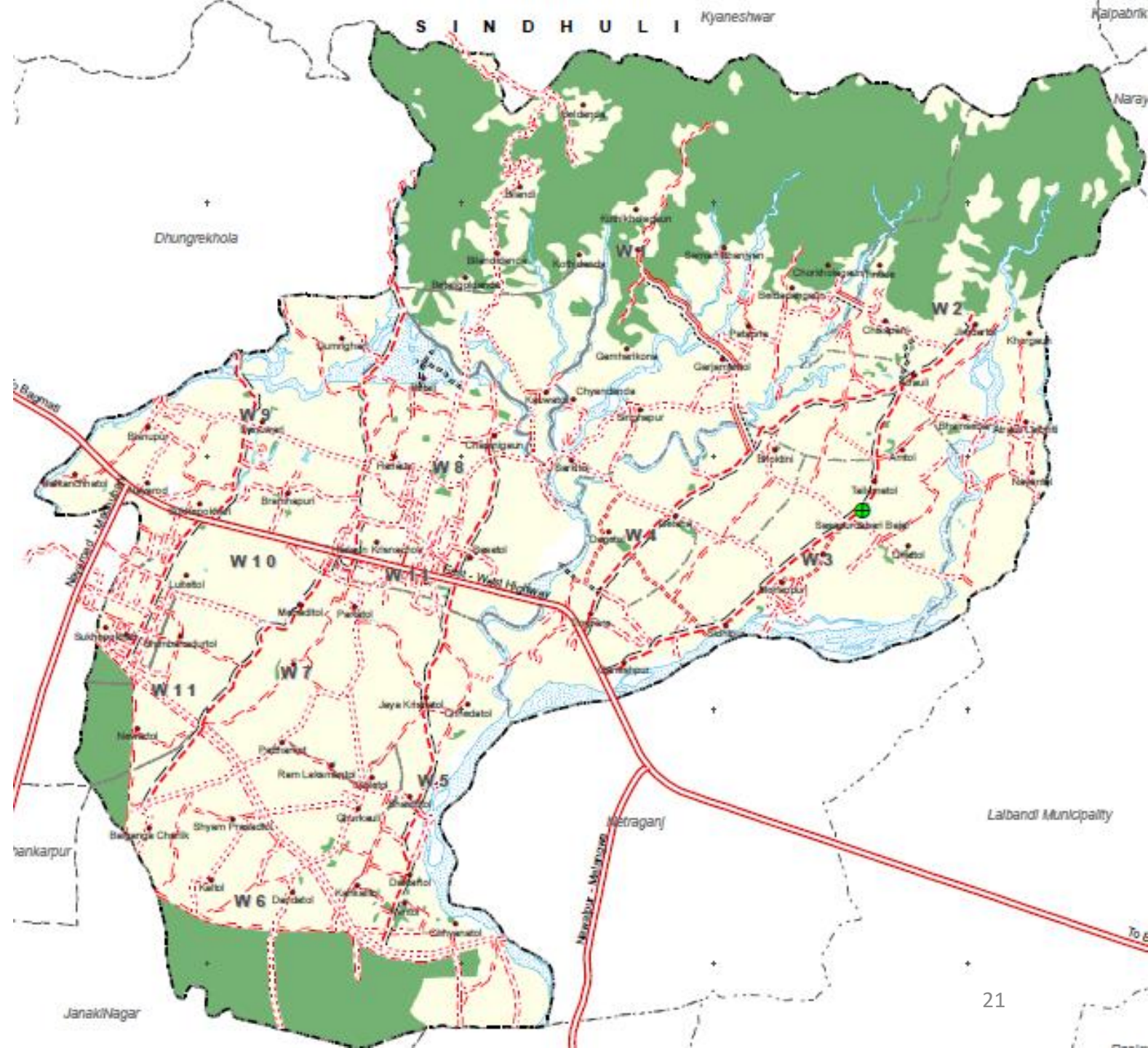
CLASS B ROADS:



Ward Specific Class A and B roads

Ward	Ward Specific Length (Km.)											
	1	2	3	4	5	6	7	8	9	10	11	Total
19M02A001									2.33	1.93		4.26
19M02A002	0.06					1.21	2.21	1.51	1.58	0.56	0.76	7.90
19M02A003					4.12		0.21	1.36			0.74	6.43
19M02A004	1.64	0.02		3.48								5.13
19M02A005	0.25	1.98	3.35	1.01								6.60
19M02B001	0.67		2.14	1.32				2.62	4.17			10.93
19M02B002	4.22				0.70	3.36	1.91	2.03	1.54		0.80	14.56
19M02B003	2.33	0.26	2.10	1.06								5.75
19M02B004	4.60	1.44										6.04
19M02B005		1.91										1.91
19M02B006							0.00			0.74	1.15	1.89
19M02B007						2.49	1.19					3.68
19M02B008					0.27	3.20						3.46
19M02B009					1.78	2.95				0.65	0.98	6.36

Consolidated MTPP Map



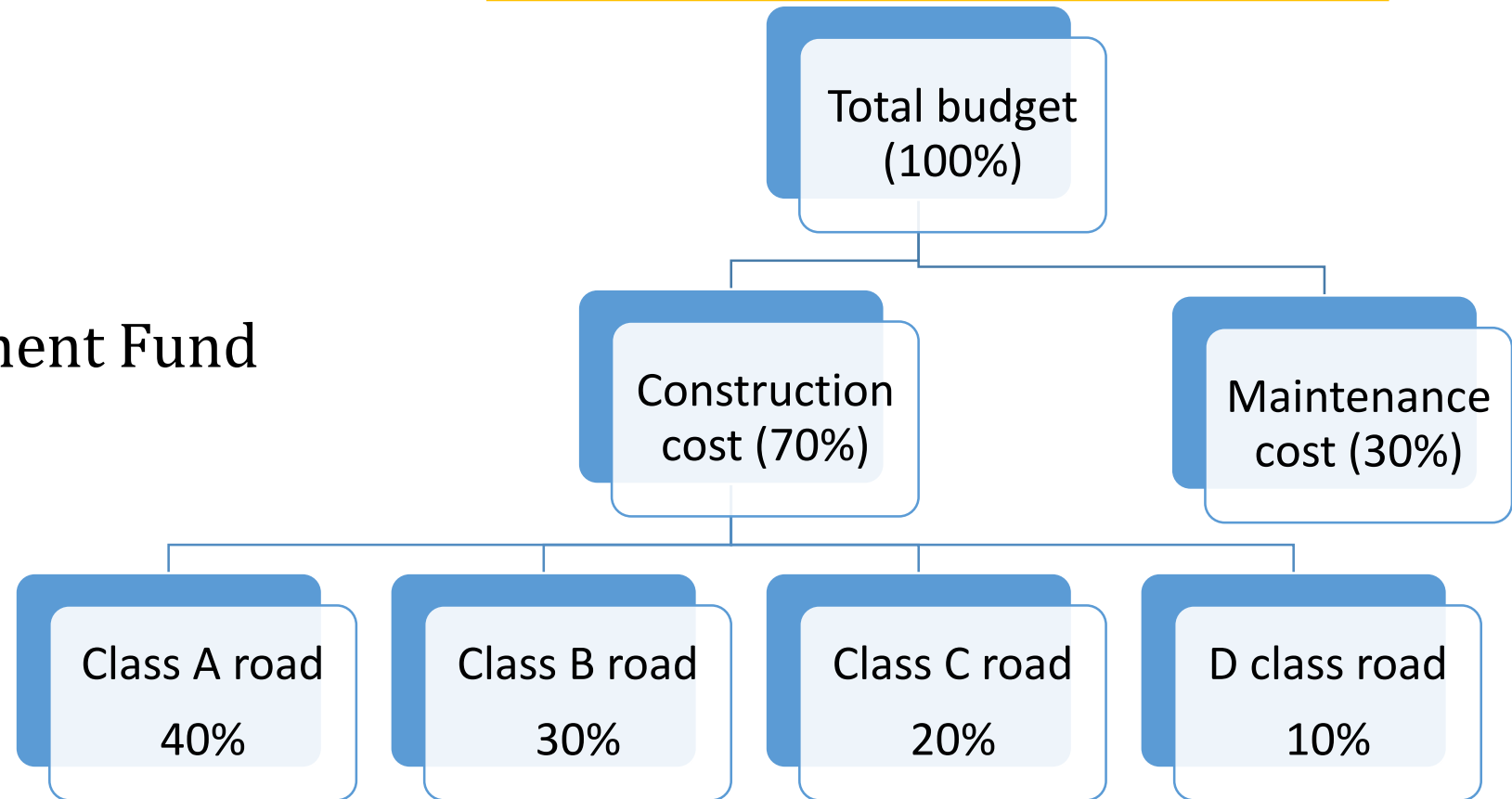
Ward Specific Roads

Ward	Length of Roads (Km)					
	SRN	A	B	C	D	Grand Total
1	-	1.950	11.813	8.057	7.722	29.542
2	-	1.993	3.609	5.591	4.009	15.201
3	-	3.355	4.247	5.337	3.876	16.814
4	1.521	4.495	2.381	4.202	4.672	17.272
5	-	4.121	2.748	7.462	2.456	16.787
6	-	1.212	11.995	9.928	8.518	31.654
7	-	2.416	3.102	3.462	1.384	10.364
8	-	2.872	4.657	4.277	9.565	21.371
9	1.961	3.912	5.710	7.961	9.413	28.957
10	1.866	2.496	1.385	1.282	8.889	15.917
11	2.273	1.499	2.937	4.142	5.954	16.805
Grand Total	7.621	30.320	54.584	61.702	66.458	220.684

Budget Allocation:

Sources of Fund:

Internal revenue
Road Board Nepal
Ministry Grand
Loan from Town Development Fund
NGO and INGOs



Concept of Local Share
and Land Pooling need to
be adopted.

Five year Financial Plan

Year	Construction Cost (In lakhs)				Maintenance Cost (In Lakhs)	Total Cost (In Lakhs)
	Class A	Class B	Class C	Class D		
Year 1	308	231	154	77	330	1,099
Year 2	338	254	169	85	363	1,209
Year 3	372	279	186	93	399	1,329
Year 4	409	307	205	102	438	1,461
Year 5	450	338	225	113	483	1,609

Financial Analysis of Major Hierarchical roads

Code	Overall Rank	Length (Km)	Width (m)	New Track	Pavement Width	Long term total cost (in Lakh)	Short term total cost (in Lakh)
19M02A001	3	4.263	13.86	-	7	1,486	755
19M02A002	6	7.898	7.58	-	7	2,753	1,207
19M02A003	4	6.429	8.73	-	7	2,254	996
19M02A004	7	5.134	8.00	-	7	1,790	720
19M02A005	2	6.596	12.00	-	7	2,299	1,091
19M02B001	5	10.925	6.70	-	5.5	3,707	1,348
19M02B002	1	14.565	7.09	-	5.5	3,758	1,813
19M02B003	10	5.749	5.62	2.226	5.5	1,593	825
19M02B004	9	6.042	5.91	0.358	5.5	6,359	752
19M02B005	12	1.910	5.00	-	5.5	489	233
19M02B006	11	1.893	7.28	-	5.5	484	231
19M02B007	8	3.677	9.66	-	7	940	554
19M02B008	22	3.465	6.55	-	5.5	886	423
19M02B009	26	6.357	6.00	-	5.5	1,632	783

Code	Length	Year I		Year II		Year III		Year IV		Year V	
		Length	Cost	Length	Cost	Length	Cost	Length	Cost	Length	Cost
19M02A005	6.60	1.00	16,500,000	1.00	16,500,000	1.00	16,500,000	1.00	16,500,000	1.00	16,500,000
19M02A001	4.26	0.81	14,260,000	0.98	17,340,000	1.00	17,700,000	1.00	17,700,000	0.48	8,496,000
19M02A003	6.43					0.19	3,000,000	0.43	6,720,000	1.00	15,500,000
19M02A002	7.90									0.30	4,544,000
19M02B002	14.56	1.00	12,400,000	1.00	12,400,000	1.00	12,400,000	1.00	12,400,000	1.00	12,400,000
19M02B001	10.93	0.87	10,670,000	1.06	12,980,000	1.00	12,300,000	1.00	12,300,000	1.00	12,300,000
19M02B007	3.68					0.21	3,200,000	0.39	5,990,000	0.59	9,080,000
19M02C017	1.61	1.01	15,380,000	0.60	9,180,000	COMPLETED					
19M02C011	2.02			0.63	7,740,000	1.02	12,546,000	0.37	4,551,000	COMPLETED	
19M02C005	0.48					0.48	6,000,000	COMPLETED			
19M02C002	1.39							1.08	15,909,000	0.31	4,557,000
19M02C003	0.45	Budget Allocation for MTMP Period:								0.45	6,615,000
19M02C038	1.01										

Prepared Maps:

- Map showing SRN
- IDPM
- Inventory map (surface type, width, demand)
- Land use
- MTPP map
- MTMP map
- Bridges and culverts
- Desire Line Map

SCORING CRITERIA:

S.N	Scoring Criteria	Score
1	Demand Priority of wards	15
2	Hierarchical Class of Roads	10
3	Total existing width	10
4	Population served	20
5	Road network benefit (access to recreational centre, agricultural centre, market and services)	15
6	Road Density	10
7	Settlement Density	5
8	Road Surface	5
9	Access to poor and minority group	10

Comment of Previous Reports:

S.N.	Comment	Page
1	More precise Executive Summary	iii -iv
	Executive summary in Nepali	V
2	Application of GIS during preparation of maps	10
3	Incorporating Visionary Development Plan on Methodology	11
	Detailed Visionary City development plan	28-29
4	Defense of adopted prioritization criteria	12
5	Issue raised regarding large RoW of A, B and C roads	31
	Defense of higher value of RoW for A, B, C roads	31
	Literature review regarding RoW for building area	31
	RoW, setback distance, width at turning, radius	32
6	Total length and cost of intervention of 5 year plan	53-54
7	Introduction of concept of nodal point shift	13 Last para
8	Conversion of short medium and long term to more practical aspect	34-35
9	Consideration of utilities management such as sewer, water supply, telephone	35
10	All service centers, municipality office, landfill site in map	Annex I - A Map 2
11	Presentation slide of Field and draft report	Annex I -D

THANK
YOU!!