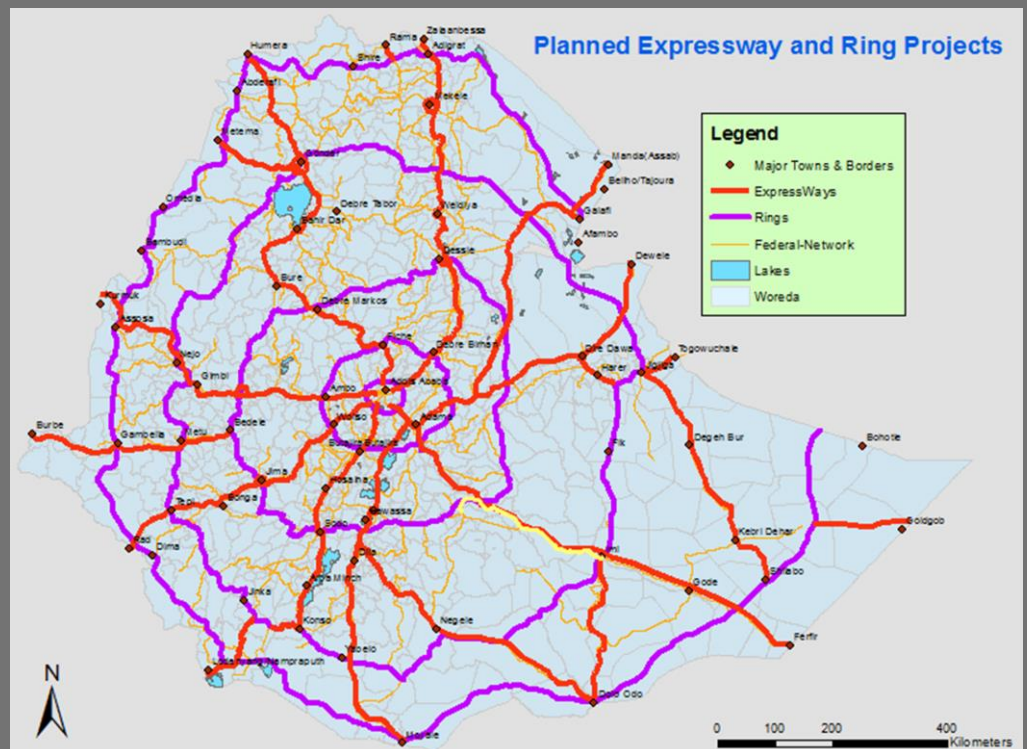
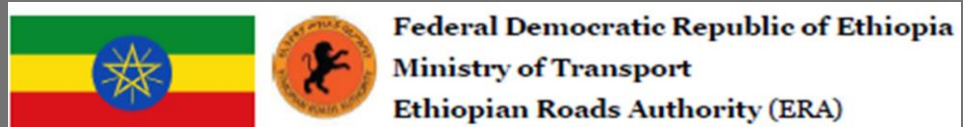


Ethiopia: The 5 and 10 Years Federal Road Master Plan



CONSULTANCY SERVICES FOR PREPARATION OF 5 AND 10
YEARS FEDERAL ROAD NETWORK MASTER PLAN

Final Report Volume II -Appendices

August 2020

Submitted by

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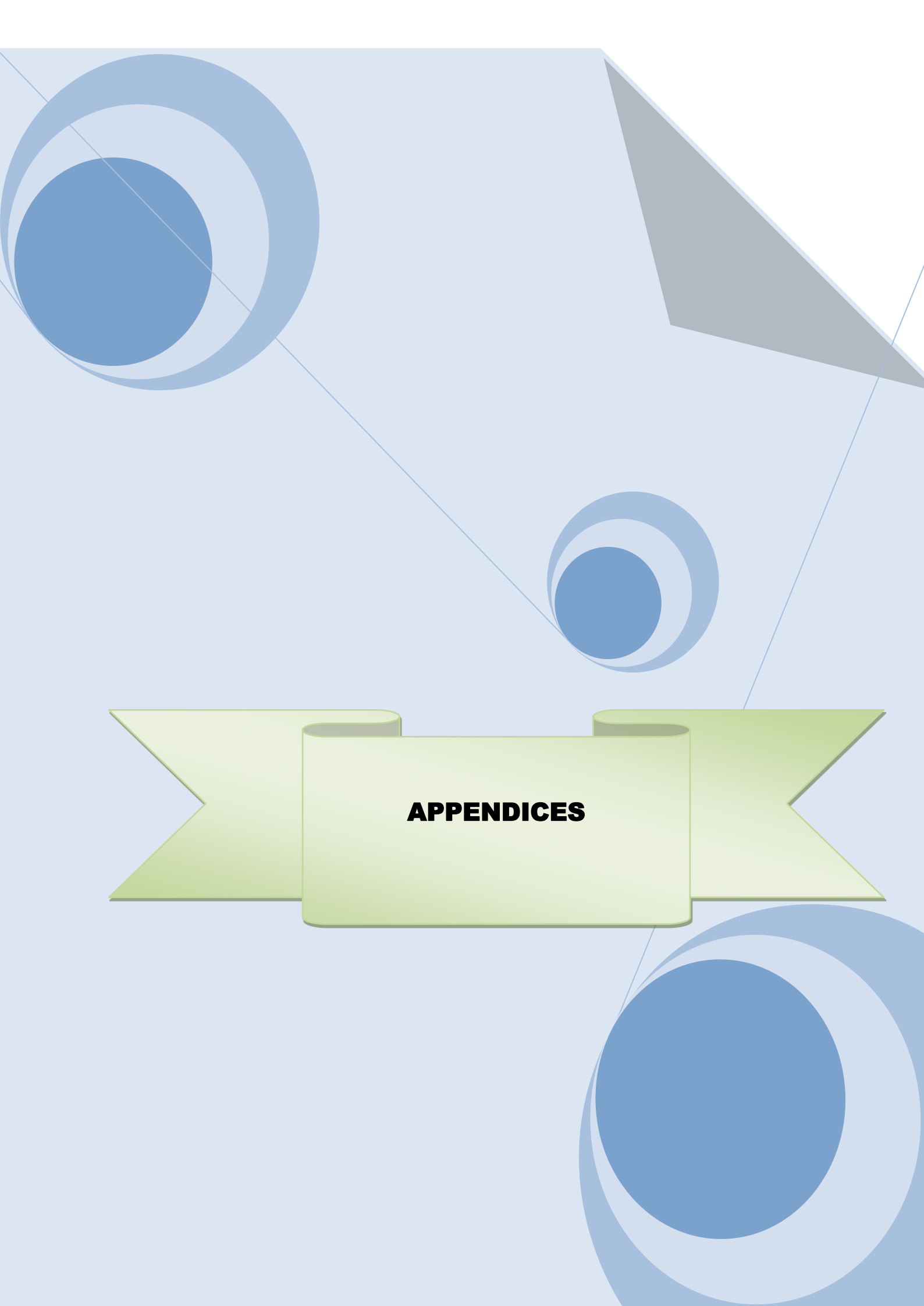
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Abbreviations and Acronyms

AADT	Annual Average Daily Traffic
ACCs	Agricultural Commercialization Centers
ACPZs	Agro Commodity Procurement Zones
ADB	Africa Development Bank
ADLI	Agriculture Development Led Industrialization
ADT	Average Daily Traffic
AFCAP	African Community Access Program
ARD	Agriculture and Rural Development
ATA	Agriculture Transformation Agency
BCR	Benefit Cost Ratio
BOFED	Bureau of Finance and Economic Development
BPR	Business Process Re-engineering
CBA	Cost Benefit Analysis
CSA	Central Statistical Agency
DC1-5	Design Class1-5
DFID	Department for International Development
DS1-10	Design Standard 1-10
EIAIP	Ethiopia Integrated Agro-Industrial Parks
ECA	Economic Commission for Africa
EIA	Environmental Impact Assessment
EIRR	Economic Internal Rate of Return
ENPV	Economic Net Present Value
EPE	Environmental Policy of Ethiopia
EPLAUA	Environmental Protection, Land Administration and Use Authority
ERA	Ethiopian Roads Authority
ESDP	Education Sector Development Program
ETP	Education and Training Policy
FAO	Food and Agriculture Organization
FDRE	Federal Democratic Republic of Ethiopia
GDP	Gross Domestic Product
GER	Gross Enrolment Ratio
GIS	Geographic Information System
GTP	Growth and Transformation Plan
HDM	Highway Development /Maintenance and Management
HEC	Highway Engineers and Consultants
HEP	Health Extension program
HSDP	Health Sector Development Program
HEWP	Health Extension Worker Program
HIV/AIDS	Human Immune Virus/Acquired Immune Deficiency Syndrome
HSDP	Health Sector Development Program
IAIPs	Integrated Agro Industrial Parks

IDCA	Italian Development Corporation Agency
IPDC	Industrial Parks Development Corporation
IRR	Internal Rate of Return
IT	Information Technology
KM	Kilometer
Masl	Mean above Sea Level
MCA	Multi-criteria Analysis
MDG	Millennium Development Goal
MIRR	Modified Internal Rate of Return
MLIN	Middle Level Income Nations
MoFED	Ministry of Finance and Economic Development
MoLAR	Ministry of Agriculture and Livestock Resources
MS SQL	Micro Soft Sequential Query Language
NP	National Parks
NPV	Net Present Value
OCC	Opportunity cost of capital
ORF	Office of Road Fund
ORN	Overseas Road Notes
PA	Peasant/Pastoral Association
PASDEP	Plan for Accelerated and Sustained Development to End Poverty
RED	Roads Economic Decision
RGDP	Regional Gross Domestic Product
RNMS	Road Network Management Support
RR10	Rural Road 10vehicle/day
RR30	Rural Road 30vehicle/day
RR50	Rural Road 50vehicle/day
RSDP	Road Sector Development Program
RSDP I	Road Sector Development Program I
RSDP II	Road Sector Development Program II
RSDP III	Road Sector Development Program III
RSDP IV	Road Sector Development Program IV
RTC	Rural Transformation Center
SCF	Standard Conversion /Seasonal Correction Factor
SDPRP	Sustainable Development and Poverty Reduction Program
SNBP	Safety Net Beneficiary Program
SPM	Strategic Planning and Management
SPSS	Statistical Package for Social Science
SSATP	Sub-Saharan Africa Transport Policy Program
TRL	Transport Research Laboratory
TVET	Technical Vocational Education and Training
UN	United Nations
UNIDO	United Nations Industrial Development Organization
URRAP	Universal Rural Roads Access Program

The background is a light blue gradient. It features three large, stylized blue circles with concentric rings, each having a 3D effect with a darker blue center and a lighter blue outer ring. A green ribbon with a 3D effect is draped across the middle of the page. The word "APPENDICES" is written in bold, black, uppercase letters on the central part of the ribbon.

APPENDICES

11 APPENDICES

11.1 Annex : Ways to improve ROW Clearance

Highway right-of-way acquisition and utilities accommodation in Ethiopia has become significantly more complex during the past 20 years. At the same time, right-of-way and utilities personnel are under increasing pressure to provide cleared right-of-way more quickly. Included in the this Master Plan are options that would be explored and be used as appropriate in right-of-way acquisition, relocation of affected residences and businesses, and relocation and accommodation of utilities with minimal disruption to communities.

Implementation Strategy of ROW

The purpose of constructability reviews during project development is to ensure that projects are biddable, buildable, cost-effective and maintainable. A constructability review is a systematic process to ensure that a project possesses clear and feasible construction techniques. The constructability review process starts at the inception of the project and continues throughout project development. Several constructability reviews are incorporated into the project planning and development. The combination of the reviews makes up the constructability review process.

Bid ability is part of the constructability review process and is the review of the contract documents to identify errors, omissions and conflicts in the plans, specifications and bid item schedule. Bid ability reviews identify uncertainty and minimize unquantified risks to the bidder.

Constructability reviews involve the optimum use of construction knowledge and experience in the planning and development of a project. One of the primary goals of constructability reviews is to foster a greater level of involvement by construction personnel during project planning and development. The Regional/Resident/Maintenance Engineers and staff are key providers of comments on constructability issues throughout the project development process. Waiting to conduct constructability reviews in the late stages of design is not effective. By project end, significant resources have been expended in developing the design. Plan changes at this late stage are costly to implement, have a significant effect on the project schedule and may conflict with long established approved permits and commitments. It is imperative that knowledgeable construction people are involved early in planning and development.

Incorporate Right-of-Way and Utilities Functions in Design-Build Process

The consultant suggests that ERA continue to study the advantages of incorporating the right of way clearance functions to the extent possible in design-build contracting, which include shortening the project development process by eliminating many procedural procurement processes.

Corridor Preservation

The consultant recommends that ERA initiate a work group to reevaluate methods for corridor preservation and create one or more pilot projects to test corridor preservation and land consolidation techniques.

Rights of Entry and Early Acquisition Methods

The consultant believes ERA and RRAs should evaluate methods for rights of entry and early acquisition to facilitate early entry onto property for project construction. They should consider expanding these methods by using risk management concepts, while ensuring that property owner rights are protected.

Information Clearinghouse on Right-of-Way and Utilities Databases

The consultant encourages ERA to establish an information clearinghouse on right-of-way and utilities databases, including GIS, for project development, tracking, and management.

Master Utility Agreements

Master utility agreements between the highway authority and utility companies are used commonly in advanced European countries. These agreements, which outline authority, obligations, and liabilities are used in lieu of individual project agreements give utility companies to plan in advance. FIIDCA should consider developing model master agreements or distributing sample master agreements to ERA and utility companies.

Cost Sharing

When utilities on highway rights-of-way must relocate to accommodate construction, utility companies pay some percentage of the relocation cost and ERA pays the remaining. When the highway agency and a utility disagree on relocation costs and the dispute threatens to delay work, the highway agency will advance construction costs to the utility under a pre-financing agreement. Once the compensation question is settled or determined by a court, the utility returns any overpayment to the highway agency.

Damage Prevention

Excavation activity causing damage to underground utilities is a problem. Utility companies should be responsible for identifying their underground facilities and providing this information to highway contractors before excavation. If utility companies cannot provide this information, they must physically uncover facilities at their own expense to obtain the information.

Minimizing Pavement Cuts

Pavement cuts are a significant problem in Ethiopia. Pavements are cut for utility crossings to accommodate fiber optics on streets, a trend that is becoming a concern to road officials. Utility companies need to make a greater effort to use trenchless technologies for highway and street crossings, and to control the frequency of pavement cuts to access or install utilities under city streets.

Right-of-Way Databases and GIS Systems

Several countries have projects under way to develop systems for managing data relevant to right-of-way functions. Geographic Information Systems (GIS) are being used in Europe for mapping right-of way properties. They have an integrated GIS system for right-of way work that includes property data by parcel, environmental data, property maps, and geo-referenced images of corrected vertical photographs. The system can combine data types and produce three-dimensional images. Such systems are useful and ERA would explore opportunities for developing a system for their use.

Multidisciplinary Team Approach

Several countries employ a project management approach, including the use of multidisciplinary project teams. Teams in the Netherlands are responsible for a project from planning through construction. Other Dutch management practices include:

- Right-of-way and utilities participation beginning at the planning stage.
- Budget and schedule commitments with a sign-off by functional representatives and project managers.
- Treating right-of-way activities as a critical path element of project management.
- Accountability for delivery on commitments.

In some countries, such as England, the project team is in a separate part of the transportation agency. The British use a framework document to facilitate coordination and communication by defining the respective roles and responsibilities of lands acquisition personnel and project team members. Benefits cited as a result of using a project management approach include a shift in employee loyalty from functional units to the project as a whole, better communication and coordination among disciplines, more realistic scheduling, and earlier problem identification and solution.

Multidimensional and Inclusive Planning Processes

In several countries, zoning and land use plans prepared at the local or regional level govern decisions about the location of transportation infrastructure. Transportation agencies normally have a role in developing the plans. Redevelopment and transportation infrastructure issues

are considered at the same time. Land use planning and modal integration are major focal points for the transportation agencies and others. The processes in each nation provide for significant input from affected property owners, community members, and local authorities. The planning efforts lead to adoption of a detailed definition of the project before involuntary right-of-way acquisitions begin.

Germany uses a plan settlement and approval process when projects may significantly affect private parties and there is opposition to the proposed infrastructure. The process includes a public hearing before an independent authority that balances public and private interests, including the needs of utilities. The specific procedures depend on the scope of the project. Two simplified processes are used when the transportation proposal itself is insignificant or there are no significant impacts or opposition, property owners have agreed to the necessary acquisitions, and consensus has been reached with others on matters of public concern. An approved plan sets the alignment and right-of-way for the roads.

User-Friendly Right-of-Way Plans

Right-of-way plans observed in Europe are clearer and easier to interpret than plans in many jurisdictions in Ethiopia. In England, an engineering schematic, land interest plan, and occasionally a model are used at public hearings. The land interest plan shows only the area to be acquired, field reference numbers, and boundaries of the acquired properties. It is the plan used for property owner negotiations and for recording at the registry of deeds. No longitudinal baseline is used on the plans and no reference points are plotted in the field. A unique GIS center point is used for the parcels acquired. The Highways Agency uses as-built plans of the roadway to locate points in the field after a project is completed. Detailed construction or survey plans may be used in litigation if needed.

Countries using land interest plans report that plan simplicity is not only acceptable to owners, but makes it easy to explain acquisitions to them. Negotiators typically use engineering schematics to explain construction impacts. One important element that facilitates use of these simpler plans is the national standardized mapping, land registration, and survey system in each district.

11.2 Annex Cost Estimation

This section presents the process and methodology, which has been implemented for estimation of unit cost for each type of intervention and the total project costs for the proposed roads projects. The analysis shows how to come up with estimated unit cost of each type of proposed interventions.

11.2.1 Determination of Per Km Cost

The Consultant has collected 10 years' cost data of more than 135 road projects from the Ethiopian Roads Authority to review and validate the per kilometer cost of different construction, upgrading and rehabilitation projects.

In determining unit costs, the Consultant has considered 100 road projects, excluding town projects from all 5 Regional Construction Project Management Directorates and Expressway & Special Projects Management Directorate under ERA where the projects were recently completed, or ongoing projects starting from November 2012 until April 2019 G.C. The projects are new construction of Asphalt Concrete, DBST, Gravel, Expressway and Rehabilitation of Asphalt roads. From the selected projects, 6 projects are Gravel Surfaced, 51 projects are Asphalt Concrete, 38 projects are DBST and 5 Projects are Expressway Projects.

All the 100 projects were identified by their Regional Construction Project Management Directorates and Expressway & Special Projects Management Directorate as Central, North, South, East and West and by the type of interventions. The analysis of unit cost includes estimated cost of Design (2.0%) and Supervision (5-7%) as per the information received from ERA's Planning. The revised cost of construction was considered.

The maximum, minimum and average costs by the type of intervention from all the 100 projects were also calculated and analyzed. A sample analysis sheet for AC, DBST, Gravel and Expressway projects from 2012-2019 G.C are attached by classifying into ERA's regions. Table below shows average costs (Birr per per km) for Asphalt Concrete projects during 2012-2019 as provided by the ERA Regional offices.

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Average Per Km cost for Asphalt Concrete projects from 2012-2019 by ERA Regions

No.	Project Name	ERA Regional Office	Region	Starting date	Length (km)	Type of Work	Total Construction Cost (birr)	Estimated Design Cost (1.5%)	Estimated Supervision Cost (5%)	Total Project Cost	Unit cost
1	Dibu River-Bedessa - Chalelaka	Central	Oromia	October 2017	44.00	Asphalt	725,621,000.0	14,512,420.0	36,281,050.0	776,414,470.0	17,645,783
2	Ankober-Dulcha	Central	Amhara & Afar	March, 2016	40.00	Asphalt	849,388,576.6	16,987,771.5	42,469,428.8	908,845,777.0	22,721,144
3	Abomsa-Dibu River	Central	Oromia	October 2017	59.00	Asphalt	991,722,000.0	19,834,440.0	49,586,100.0	1,061,142,540.0	17,985,467
4	Sodo-Turcha lot-1	Central	SNNP	May, 2015	76.00	Asphalt	1,324,543,341.9	26,490,866.8	66,227,167.1	1,417,261,375.9	18,648,176
5	Sodo-Turcha lot-2	Central	SNNP	May, 2016	83.00	Asphalt	1,459,725,490.5	29,194,509.8	72,986,274.5	1,561,906,274.8	18,818,148
6	Dogolo-Kelela	Central	Amhara	April, 2017	72.00	Asphalt	1,299,846,199.6	25,996,924.0	64,992,310.0	1,390,835,433.6	19,317,159
7	Debre Birhan-Ankober	Central	Amhara	October 2019	42.00	Asphalt	1,083,570,860.0	21,671,417.2	54,178,543.0	1,159,420,820.2	27,605,258
8	Kokeb Meski-Alemketema	Central	Amhara		55.00	Asphalt	1,695,797,000.0	33,915,940.0	84,789,850.0	1,814,502,790.0	32,990,960
9	Arsi Robe-Agarfa-Ali lot-1 :Ali-Wabe River Bridge	Central	Oromia	Feburary, 2019	54.00	Asphalt	2,153,060,672.0	43,061,213.4	107,653,033.6	2,303,774,919.0	42,662,499
10	Ambo-Waliso	Central	Oromia	July 2019	27.70	Asphalt	1,294,323,000.0	25,886,460.0	90,602,610.0	1,410,812,070.0	50,931,844
11	Bishoftu-Chafedonsa-Sandefa	Central	Oromia		72.00	Asphalt	914,848,000.0	18,296,960.0	64,039,360.0	997,184,320.0	13,849,782

No.	Project Name	ERA Regional Office	Region	Starting date	Length (km)	Type of Work	Total Construction Cost (birr)	Estimated Design Cost (1.5%)	Estimated Supervision Cost (5%)	Total Project Cost	Unit cost
12	Etaya-Robe-Seru lot-2 : Robe Seru	Central	Oromia	December, 2018	68.00	Asphalt	993,181,495.4	19,863,629.9	69,522,704.7	1,082,567,830.0	15,920,115
13	Arberekate-Galmso contract-1	East	Oromia	May, 2015	57.50	Asphalt	1,018,376,810.0	20,367,536.2	71,286,376.7	1,110,030,722.9	19,304,882
14	Galmso-Micheta Contract-2	East	Oromia	November, 2014	45.90	Asphalt	982,246,410.0	19,644,928.2	68,757,248.7	1,070,648,586.9	23,325,677
15	Afdera-Erbeti Junction 48 km Contract-1	East	Afar	April, 2017	79.00	Asphalt	1,710,535,070.0	34,210,701.4	119,737,454.9	1,864,483,226.3	23,601,053
16	Dire Dawa-Dewale	East	Dire Dawa/ Somali	September, 2014	220.00	Asphalt	5,226,805,000.0	104,536,100.0	365,876,350.0	5,697,217,450.0	25,896,443
17	48 Km-Ertale Junction-Ahmedela Contract-2	East	Afar	April, 2017	55.00	Asphalt	1,366,207,613.0	27,324,152.3	95,634,532.9	1,489,166,298.2	27,075,751
18	Jigjiga-Fafen-Gelalshe -Deghimedo Contract-1	East	Somali	April, 2019	55.40	Asphalt	1,064,407,802.0	21,288,156.0	74,508,546.1	1,160,204,504.2	20,942,320
19	Asayita-Afambo-Djibouti Border	East	Afar		49.00	Asphalt	1,518,683,761.0	30,373,675.2	106,307,863.3	1,655,365,299.5	33,782,965
20	Azezo-Gorgora	North	Amhara	Feburary, 2015	53.00	Asphalt	822,000,110.0	16,440,002.2	57,540,007.7	895,980,119.9	16,905,285
21	Wukro-Nebelet	North	Tigray	November, 2017	80.00	Asphalt	1,250,636,000.0	25,012,720.0	87,544,520.0	1,363,193,240.0	17,039,916
22	Gashena-Bilbila	North	Amhara	Feburary, 2014	109.00	Asphalt	1,722,784,000.0	34,455,680.0	120,594,880.0	1,877,834,560.0	17,227,840

No.	Project Name	ERA Regional Office	Region	Starting date	Length (km)	Type of Work	Total Construction Cost (birr)	Estimated Design Cost (1.5%)	Estimated Supervision Cost (5%)	Total Project Cost	Unit cost
23	Adi Abun-Rama Merab	North	Tigray	September, 2017	47.00	Asphalt	807,500,000.0	16,150,000.0	56,525,000.0	880,175,000.0	18,727,128
24	Nebelet-Filafil	North	Tigray	November, 2017	57.00	Asphalt	1,004,289,000.0	20,085,780.0	70,300,230.0	1,094,675,010.0	19,204,825
25	Pawi Junction-Fendika-Ayima	North	Benshangul Gumuz	2013	83.00	Asphalt	1,543,649,827.7	30,872,996.6	108,055,487.9	1,682,578,312.2	20,272,028
26	Bilbila-Sekota	North	Amhara	June	100.00	Asphalt	2,041,313,000.0	40,826,260.0	142,891,910.0	2,225,031,170.0	22,250,312
27	Mekele-Degolat-Km 70 lot-1	North	Tigray	October, 2016	94.00	Asphalt	1,594,388,000.0	31,887,760.0	111,607,160.0	1,737,882,920.0	18,488,116
28	Pawi Junction-Km 69/Lot-1	North	Benshangul Gumuz	June, 2017	69.00	Asphalt	887,759,650.0	17,755,193.0	62,143,175.5	967,658,018.5	14,024,029
29	Kiwiha-Maymekden	North	Tigray	June,2017	24.00	Asphalt	552,000,000.0	11,040,000.0	38,640,000.0	601,680,000.0	25,070,000
30	Tenta Junction-Wegeltena-Kurba	North	Amhara	April, 2019	79.00	Asphalt	1,873,489,000.0	37,469,780.0	131,144,230.0	2,042,103,010.0	25,849,405
31	Rama-Chila-Wukro-Maray	North	Tigray	March, 2019	60.00	Asphalt	1,479,882,000.0	29,597,640.0	103,591,740.0	1,613,071,380.0	26,884,523
32	Kunzila Junction-Filon Horticulture	North	Amhara	January,2018	22.00	Asphalt	554,487,290.0	11,089,745.8	38,814,110.3	604,391,146.1	27,472,325
33	Dessie-Kutaber Tenta Junction	North	Amhara	May, 2014	68.00	Asphalt	1,877,782,000.0	37,555,640.0	131,444,740.0	2,046,782,380.0	30,099,741
34	Adi Arkeyi-Telemt	North	Amhara and Tigray	October, 2018	67.00	Asphalt	1,982,378,000.0	39,647,560.0	138,766,460.0	2,160,792,020.0	32,250,627

No.	Project Name	ERA Regional Office	Region	Starting date	Length (km)	Type of Work	Total Construction Cost (birr)	Estimated Design Cost (1.5%)	Estimated Supervision Cost (5%)	Total Project Cost	Unit cost
35	Debank-Zarima Limalimo alternative Route	North	Amhara	December, 2018	69.00	Asphalt	2,142,000,000.0	42,840,000.0	149,940,000.0	2,334,780,000.0	33,837,391
36	Adishahu-Dila-Samre	North	Tigray	2018	60.00	Asphalt	2,114,048,000.0	42,280,960.0	147,983,360.0	2,304,312,320.0	38,405,205
37	Hawassa-Chiko	South	SNNP	January, 2017	66.00	Asphalt	1,138,684,110.0	22,773,682.2	79,707,887.7	1,241,165,679.9	18,805,541
38	Suagr Factory Project 1-2-Hana	South	SNNP	November, 2013	37.14	Asphalt	651,111,223.7	13,022,224.5	45,577,785.7	709,711,233.8	19,109,080
39	Sugar Factory Project-6-Including Omo River Bridge	South	SNNP	December, 2014	37.14	Asphalt	1,108,125,890.0	22,162,517.8	77,568,812.3	1,207,857,220.1	32,521,735
40	Morcho-Dimtu-Bitena/ Contract-1	South	SNNP	November, 2014	60.80	Asphalt	1,000,046,660.0	20,000,933.2	70,003,266.2	1,090,050,859.4	17,928,468
41	Sugar Factory Project 6-4	South	SNNP	December, 2014	59.00	Asphalt	1,466,787,320.0	29,335,746.4	102,675,112.4	1,598,798,178.8	27,098,274
42	Jinka-Mender lot-1	South	SNNP	November, 2016	50.00	Asphalt	1,373,268,000.0	27,465,360.0	96,128,760.0	1,496,862,120.0	29,937,242
43	Abobo/ KM 76- Meti Lot-2	West	Gambella	March, 2009	82.00	Asphalt	1,298,029,500.0	25,960,590.0	90,862,065.0	1,414,852,155.0	17,254,295
44	Omo/Say-Maji	West	SNNP	Febuaray, 2017	78.50	Asphalt	772,077,820.0	15,441,556.4	54,045,447.4	841,564,823.8	10,720,571
45	Bonga-Felegeselam	West	SNNP	November, 2016	53.00	Asphalt	884,241,310.0	17,684,826.2	61,896,891.7	963,823,027.9	18,185,340

No.	Project Name	ERA Regional Office	Region	Starting date	Length (km)	Type of Work	Total Construction Cost (birr)	Estimated Design Cost (1.5%)	Estimated Supervision Cost (5%)	Total Project Cost	Unit cost
46	Nekemte-Bure/lot-2	West	Oromia	October, 2016	88.00	Asphalt	1,765,186,780.0	35,303,735.6	123,563,074.6	1,924,053,590.2	21,864,245
47	Tercha-Chida	West	SNNP	March, 2017	58.00	Asphalt	1,166,234,301.7	23,324,686.0	81,636,401.1	1,271,195,388.8	21,917,162
48	Abobo- Km 76 Lot-1	West	Gambella	Feburary, 2017	76.00	Asphalt	960,130,380.0	19,202,607.6	67,209,126.6	1,046,542,114.2	13,770,291
49	Tepi-Mizan	West	SNNP	January, 2018	48.00	Asphalt	1,246,200,730.0	24,924,014.6	87,234,051.1	1,358,358,795.7	28,299,142
50	Gore-Tepi	West	SNNP	April, 2019	140.00	Asphalt	4,468,211,740.0	89,364,234.8	312,774,821.8	4,870,350,796.6	34,788,220
51	Pengnang-Jikawo-Lare	West	Gambella	April, 2019	35.00	Asphalt	1,420,584,377.0	28,411,687.5	99,440,906.4	1,548,436,970.9	44,241,056

Average Per Km cost for DBST projects from 2012-2019 by ERA Regions

No.	Project Name	ERA Regional Office	Region	Starting date	Length (km)	Type of Work	Total Construction Cost (birr)	Estimated Design Cost (1.5%)	Estimated Supervision Cost (5%)	Total Project cost	Unit cost
1	Shambu-Bako	Central	Oromia	July 2016	60.00	DBST	993,280,400.0	19,865,608.0	49,664,020.0	1,062,810,028.0	17,713,500
2	Bojober-Werabe	Central	SNNP		41.00	DBST	795,000,000.0	15,900,000.0	39,750,000.0	850,650,000.0	20,747,561
3	Bilalo-Kersa-Arsi Negele	Central	Oromia	-	93.00	DBST	1,565,358,000.0	31,307,160.0	78,267,900.0	1,674,933,060.0	18,010,033
4	Durgi-Gibe Rever contract 1	Central	SNNP	April, 2013	27.70	DBST	474,662,800.0	9,493,256.0	23,733,140.0	507,889,196.0	18,335,350

No.	Project Name	ERA Regional Office	Region	Starting date	Length (km)	Type of Work	Total Construction Cost (birr)	Estimated Design Cost (1.5%)	Estimated Supervision Cost (5%)	Total Project cost	Unit cost
5	Jihur-Deneba-Lemi junction-Guguftu-Wereilu-Dogolo lot-2: Guguftu-Were ilu-Dogolo	Central	Amhara	August, 2018	74.00	DBST	1,394,828,055.4	27,896,561.1	69,741,402.8	1,492,466,019.3	20,168,460
6	Efson-Mehal Meda	Central	Amhara	April, 2015	61.00	DBST	1,352,642,535.8	27,052,850.7	67,632,126.8	1,447,327,513.3	23,726,681
7	Abus 72 Km-Alemketema	Central	Amhara	Feburary, 2013	48.00	DBST	1,155,960,797.0	23,119,215.9	57,798,039.9	1,236,878,052.8	25,768,293
8	Bole-Abomsa and Bole Waterdino Holticulture	Central	Oromia	September, 2017	31.00	DBST	359,826,774.3	7,196,535.5	17,991,338.7	385,014,648.5	12,419,827
9	Chole-Megna	Central	Oromia	November, 2012	20.00	DBST	869,512,570.0	17,390,251.4	60,865,879.9	947,768,701.3	47,388,435
10	Termaber-Melaye Sefed meda Spur 1 Melaye spur 2 Molale Wegere	Central	Amhara	December, 2018	119.00	DBST	1,852,318,000.0	37,046,360.0	129,662,260.0	2,019,026,620.0	16,966,610
11	Babile-Fik: Babile -km 36 Lot-1	East	Oromia and Somali	April, 2018	36.00	DBST	408,482,770.0	8,169,655.4	28,593,793.9	445,246,219.3	12,367,951
12	Dalol/Musli-Bada	East	Afar	January, 2016	41.00	DBST	1,249,624,731.0	24,992,494.6	87,473,731.2	1,362,090,956.8	33,221,731
13	Seroka- Abirhagira-Abdirafe/Tele Tawor	North	Amhara/ Tigray	November, 2016	92.00	DBST	1,432,205,650.0	28,644,113.0	100,254,395.5	1,561,104,158.5	16,968,523
14	AdiremetiKulta-Adigoshu	North	Tigray	October, 2017	60.00	DBST	953,000,000.0	19,060,000.0	66,710,000.0	1,038,770,000.0	17,312,833
15	Senja-Keraker	North	Amhara	Feburary ,2013	48.00	DBST	812,456,000.0	16,249,120.0	56,871,920.0	885,577,040.0	18,449,522

No.	Project Name	ERA Regional Office	Region	Starting date	Length (km)	Type of Work	Total Construction Cost (birr)	Estimated Design Cost (1.5%)	Estimated Supervision Cost (5%)	Total Project cost	Unit cost
16	Abi Adi-Semema	North	Tigray	November, 2017	89.00	DBST	1,748,000,000.0	34,960,000.0	122,360,000.0	1,905,320,000.0	21,408,090
17	Bitena-Mayukote-Sodo/contract -1	North	SNNP	December, 2014	47.46	DBST	960,694,650.0	19,213,893.0	67,248,625.5	1,047,157,168.5	22,063,994
18	Dabat-Ajire Contract-1	North	Amhara	October, 2016	43.00	DBST	931,304,149.5	18,626,083.0	65,191,290.5	1,015,121,523.0	23,607,477
19	Mehoni-Meychew	North	Tigray	Sptember,2017	17.43	DBST	378,614,040.0	7,572,280.8	26,502,982.8	412,689,303.6	23,676,954
20	Ajire-Kerker-Ketema Nigus Contract-2	North	Amhara & Tigray	September, 2018	50.00	DBST	1,158,660,000.0	23,173,200.0	81,106,200.0	1,262,939,400.0	25,258,788
2	Semema-Endebeguna	North	Tigray	December, 2017	96.00	DBST	2,252,000,000.0	45,040,000.0	157,640,000.0	2,454,680,000.0	25,569,583
174	KM 69- Angereb Contract-2	North	Amhara	June, 2017	71.00	DBST	1,721,164,000.0	34,423,280.0	120,481,480.0	1,876,068,760.0	26,423,504
154	Mota-Jara Gedo	North	Amhara	July,2017	63.00	DBST	1,620,164,000.0	32,403,280.0	113,411,480.0	1,765,978,760.0	28,031,409
138	Beles-Mekena Birhan	North	Amhara	October, 2016	39.00	DBST	1,018,952,363.0	20,379,047.3	71,326,665.4	1,110,658,075.7	28,478,412
208	Wukro-Atsebi-Koneba	North	Tigray	December, 2018	63.00	DBST	1,745,722,000.0	34,914,440.0	122,200,540.0	1,902,836,980.0	30,203,762
134	Fiyel wuha-Tekeze River Bridge	North	Tigray	Sptember,2017	40.00	DBST	1,166,300,000.0	23,326,000.0	81,641,000.0	1,271,267,000.0	31,781,675
175	Metema-Aberjira-Maserbet-Sanja: Metema-Aberjira/ Km 90	North	Amhara	Ocotober, 2017	117.30	DBST	1,548,000,000.0	30,960,000.0	108,360,000.0	1,687,320,000.0	14,384,655
179	Ayikel-Zufan-Km 69/ Contract-1	North	Amhara	October, 2016	69.00	DBST	2,320,521,030.0	46,410,420.6	162,436,472.1	2,529,367,922.7	36,657,506
183	Debre Markos-D/Elias-Temcha	North	Amhara	March, 2019	81.00	DBST	1,299,451,000.0	25,989,020.0	90,961,570.0	1,416,401,590.0	17,486,439

No.	Project Name	ERA Regional Office	Region	Starting date	Length (km)	Type of Work	Total Construction Cost (birr)	Estimated Design Cost (1.5%)	Estimated Supervision Cost (5%)	Total Project cost	Unit cost
128	Turmi-Omo	South	SNNP	August, 2017	63.35	DBST	897,005,980.0	17,940,119.6	62,790,418.6	977,736,518.2	15,433,883
103	Sawula-Leska	South	SNNP	September, 2010	52.00	DBST	1,079,141,950.0	21,582,839.0	75,539,936.5	1,176,264,725.5	22,620,475
152	Daye-Chiri-Nansebo	South	Oromia/ SNNP	September, 2017	73.00	DBST	1,682,275,010.0	33,645,500.2	117,759,250.7	1,833,679,760.9	25,118,901
187	Edo-Serofta-Warka	South	Oromia	January, 2019	73.00	DBST	1,687,343,880.0	33,746,877.6	118,114,071.6	1,839,204,829.2	25,194,587
153	Fiseha Genet-Kele- Nedeke/Soyema- Km 90	South	SNNP	June, 2019	97.00	DBST	1,589,317,000.0	31,786,340.0	111,252,190.0	1,732,355,530.0	17,859,335
206	Morka-Gircha-Chencha	South	SNNP	2018	73.00	DBST	1,967,497,000.0	39,349,940.0	137,724,790.0	2,144,571,730.0	29,377,695
189	Shishinda-Tepi	West	SNNP	October, 2018	76.00	DBST	1,250,000,000.0	25,000,000.0	87,500,000.0	1,362,500,000.0	17,927,632
116	Gambella-Abobo- Pugndo	West	Gambella	October,2017	103.10	DBST	1,310,919,300.0	26,218,386.0	91,764,351.0	1,428,902,037.0	13,859,380
197	Yaso-Galasa-Dibate Lot-1: Yaso-Km 100	West	Benshangul Gumuz	2018	100.00	DBST	2,666,067,304.0	53,321,346.1	186,624,711.3	2,906,013,361.4	29,060,134

Average Per Km cost for National Highway and Expressway projects from 2012-2019 by ERA Regions

No.	Project Name	ERA Region	Region	Starting date	Length (km)	Type of Work	Cost(birr)	Design Cost	Supervision Cost	Total Project Cost	Unit cost
1	Mojo-Meki	Central	Oromia	November 2014	56.00	Asphalt	3,675,286,150.0	110,258,584.5	257,270,030.5	4,042,814,765.0	72,193,121
2	Meki-Ziway	Central	Oromia	May 2015	37.00	Asphalt	2,009,627,410.0	60,288,822.3	140,673,918.7	2,210,590,151.0	59,745,680
3	Ziway - Arsi Negele	Central	Oromia	February, 2017	57.00	Asphalt	3,182,975,000.0	95,489,250.0	222,808,250.0	3,501,272,500.0	61,425,833
4	Arsi Negele-Hawassa	Central	Oromia	February, 2017	52.00	Asphalt	4,857,360,800.0	145,720,824.0	340,015,256.0	5,343,096,880.0	102,751,863
5	Bishan Guracha/Tikur Wuha-Hawassa	Central	Oromia / South	October, 2017	12.00	Asphalt	589,396,000.0	17,681,880.0	41,257,720.0	648,335,600.0	54,027,967

Average Per Km cost for Gravel projects from 2012-2019 by ERA Regions

Project Name	ERA Region	Region	Starting date	Length (km)	Type of Work	Cost (Birr)	Design Cost	Supervision cost	Total Cost	Unit cost
Didigsala-Yalo/Hida-Yalo	East	Afar	Feburary,2017	42.90	Gravel	105,586,560	2,111,731.2	5,279,328.0	112,977,619.2	2,633,511
Shebele-Imi	East	Somali	2019	36.00	Gravel	128,407,580	2,568,151.6	6,420,379.0	137,396,110.6	3,816,559
Oblo-Dirmi	South	SNNP	September:2018	69.00	Gravel	893,493,930	17,869,878.6	44,674,696.5	956,038,505.1	13,855,631
Adura-Akobo and Adura-Burbe	West	Gambella	March, 2013	126.00	Gravel	833,462,870	16,669,257.4	41,673,143.5	891,805,270.9	7,077,820
Ayisid-Congo/Guba-Begondi	West	Benishangul Gumuz	July, 2017	62.00	Gravel	520,767,000	10,415,340.0	26,038,350.0	557,220,690.0	8,987,430
Congo-Begondi-Wenbera	West	Benishangul Gumuz	January, 2013	69.60	Gravel	1,578,418,930	31,568,378.6	78,920,946.5	1,688,908,255.1	24,265,923

Note: Town Projects are excluded. Design and Supervision cost and inflation cost as contingency is included. The revised costs do not include Right of Way (ROW) cost. It is noted that these costs were rough and used for preliminary purposes.

Summarized costs (Birr/per km)

Type of surface	Cost Range	Average cost By ERA's Implementation Region (ETB/km)					Average cost Construction
		Central	North	South	West	East	
ASPHALT CONCRETE	MIN.	13,849,782.22	14,024,029.25	17,928,468.08	10,720,571.00	19,304,882.14	10,720,571.00
	MAX.	50,931,843.68	38,405,205.33	32,521,734.52	44,241,056.31	33,782,965.30	50,931,843.68
	AVG.	24,924,694.52	23,765,217.40	24,233,389.98	23,448,924.64	24,847,013.09	24,185,780.07
DBST	MIN.	12,419,827.37	14,384,654.73	15,433,883.48	13,859,379.60	12,367,950.54	12,367,950.54
	MAX.	47,388,435.07	36,657,506.13	29,377,694.93	29,060,133.61	33,221,730.65	47,388,435.07
	AVG.	22,124,475.01	23,986,066.27	22,600,812.80	20,282,381.60	22,794,840.59	22,922,357.35
Highway & Expressway	MIN.	54,027,967					54,027,967
	MAX.	102,751,863					102,751,863
	AVG.	70,028,893					70,028,893
GRAVEL	MIN.			13,855,631	7,077,820	2,633,511	2,633,511
	MAX.			13,855,631	24,265,923	3,816,559	24,265,923
	AVG.			13,855,631	15,671,871	3,225,035	10,106,146

According to the above assessment, the per km cost of Asphalt Concrete roads ranges from ETB 10.72 million per km in West Region to ETB 50.93 million per km in Northern region. For DBST, the per km cost ranges from ETB 12.36 million per km in East region to ETB 47.3 million per km in Central region. For National Highway/ Expressway projects, the range varies from 54.0 million to 102.7 Million on projects located in Central Region.

On the other hand, the per-km cost assessment for gravel roads was done in three regions: South, West and East. The minimum cost per km of gravel road projects was found to be ETB 2.6 million whereas the maximum was ETB 24.2 million per km for projects located in East and West region respectively.

The Consultant has also analyzed the projects by considering terrain classifications as flat, rolling, hilly and mountainous. It is well understood that terrain has an impact on cost of construction.

- Right off way Cost

The consultant has considered right off way cost for selected 30 roads project in different regional offices in ERA. According to the data, the average cost per km for right off way clearance is about 4 million birr. The following table indicates Right off way costs for selected federal roads in ERA.

Summarized costs (Birr/per km) Right offway Cost

No	Project Name	Length (Km)	Total Amount paid for Right off way	Year in EFY	Average per Km
1	Sansusi -Tatke	13	442,976,818	2009 - 2012	34,075,140
2	Efason Mehale Meda	61	90,690,823	2007 - 2012	1,494,575
3	Sodo - Omo	76	107,874,357	2007 - 2012	1,425,025
4	Omo-Tercha	83	242,338,594	2007 - 2012	2,905,739
5	Ankober -Dullacha	40	392,990,644	2008 - 2011	9,824,766
Expressway					
6	Mojo - Meki	56	860,404,284	2008 - 2012	15,364,362
7	Meki -Zeway	37	506,896,812	2008 - 2012	13,699,914
8	Zeway-Arsi Negelle	57	673,571,356	2011 - 2012	11,817,041
9	Arsi Negelle -Hawassa	44	785,939,681	2010 - 2012	18,067,579
10	Tikr Wuha - Hawassa	12	6,463,187	2010 - 2012	538,599
Eastern Region					
12	Dalole- Muselibada	41	2,384,200	2010 - 2011	58,151
13	Dichato - Galfine	78	6,227,341	2010 - 2011	79,838
14	Hida - Yalo	5	8,448,774	2010 - 2011	1,760,161
15	Harere - Kombolecha	19	127,134,573	2011 - 2012	6,691,293

No	Project Name	Length (Km)	Total Amount paid for Right off way	Year in EFY	Average per Km
North Region					
16	Bilbila - Sekota	100	202,406,917	2010 - 2012	2,024,069
17	Keunzela - Zege Mengntaya	22	117,864,637	2010 - 2012	5,406,635
18	Nebelet - Felafele	57	93,261,947	2010 - 2012	1,635,601
19	Wukero - Nebelte	80	288,033,962	2010 - 2012	3,618,517
20	Pawi Mengntaya	69	91,829,098	2010 - 2012	1,330,856
Western Region					
21	Mizan - Dimma	98	275,201,728	2007 - 2012	2,808,181
22	Bonga-Felgselame	52	118,116,987	2007 - 2012	2,280,251
23	Nekemete - Bure Lot 2	88	145,692,021	2009 - 2012	1,662,202
24	Bedele -Metue Lot 1	61	48,134,578	2007 - 2011	789,091
25	Bedele- Metue Lot 2	61	25,359,292	2007 - 2011	415,726
Southern Region					
26	Hawassa - Chuko	66	211,243,553	2005- 2012	3,200,660
27	Chuko- Yergachefe	60	180,983,618	2005 - 2012	3,016,394
28	Yergachfe - H/Mariam	74	266,275,133	2005 - 2012	3,598,313
29	Jinka - Mender	49	337,574,580	2008 - 2012	6,889,277
30	Hadero-Durgi	35	116,071,557	2004 - 2012	3,316,330
	Total	1591.95	6,772,391,052.89	2004 - 2012	4,254,148

Having made assessment of ongoing contract projects, the Consultant recommended costs per km to prepare the 10 years implementation plan for the selected missing links, upgrading and rehabilitation, highway and expressway projects. The unit costs per km were organized based on three categories: Expressways; Paved and Unpaved road projects; and construction interventions. The unit project cost is presented in a form of average in a range of minimum and maximum values in which the room from these ranges would be qualified and applied for different scenarios.

11.2.2 Proposed Unit Costs

The proposed average unit costs were categorized by dominant terrain type and are presented below.

Average Unit Cost proposed by the consultant for different type of works/interventions

Type Of Surface		Estimated Average Per Km Cost Of Future Road Projects (ETB)							
		Terrain Category	Road Design Classes					Remark	
			DC4	DC5	DC6	DC7	DC8		Express Highway
Unpaved Construction		80-100% FLAT	10,106,146 (minimum average cost is considered)						This minimum cost can be applied for upgrading to high level federal gravel roads from regional rural roads. This unit cost will be also used to estimate the investment budget for new federal gravel roads, which are traversing in flat terrain for more than 80% of the road section.
		40-80% FLAT	11,622,068 (15% is add on the minimum cost)						For new federal gravel roads where most of the project section used to traverses in a 20-60% rolling, hilly and/or mountainous terrain, this average range of unit cost could be applied.
		0-40% FLAT	12,632,682 (25% is add on the minimum cost)						For new federal gravel roads where most of the project section used to traverses in a 60-100% rolling, hilly and/or mountainous terrain, this average range of unit cost could be applied.
Paved (Asphalt Concrete)	Construction	80-100% FLAT			24,185,780.07 (min. Unit Cost)	26,604,358 10% (min. Unit Cost)			These unit costs will be used to estimate the investment budget for new federal paved roads which are traversing in a 0-20% rolling, hilly and/or mountainous terrain with a design standard of DC-6 and DC-7

Type Of Surface		Estimated Average Per Km Cost Of Future Road Projects (ETB)							
		Terrain Category	Road Design Classes						Remark
			DC4	DC5	DC6	DC7	DC8	Express Highway	
		40-80% FLAT			27,813,647 (15 % is added on min. Unit Cost)	30,595,011 (10 % is added on DC6 Cost)			These unit costs will be used to estimate the investment budget for new federal paved roads which are traversing in a 20-60% rolling, hilly and/or mountainous terrain with a design standard of DC-6 and DC-7.
		0-40% FLAT			30,232,225 (25 % is added on min. Unit Cost)	33,255,447.5 (10 % is added on DC6 Cost)			For new federal paved roads where most of the project section used to traverses in a 60-100% rolling, hilly and/or mountainous terrain with a design standard of DC-6 and DC-7, this average range of unit cost could be applied.
National highway And Expressway	National Highway	Average					70,028,893 adjusted to 75,000 considering terrain)		This cost is calculated from ongoing projects of Modjo to Hawassa which all of them are Highways with 4 lanes
		Minimum					54,027.967		
		Maximum					102,751,863		

11.3 Traffic Generating Areas and Classes

NO	Region	Zone	TGA Center or Woreda	TGA Class
1	Afar	Zone 02	Abala	Class-II
2	Afar	Zone 02	Berehale	Class-IV
3	Afar	Zone 03	Amibara	Class-VI
4	Afar	Zone 03	Awash Fentale	Class-VII
5	Afar	Zone 01	Asayta	Class-VII
6	Afar	Zone 01	Chefera	Class-VI
7	Afar	Zone 01	Dubti	Class-IV
8	Afar	Zone 04	Ewa	Class-VII
9	Afar	Zone 04	Yalo	Class-VII
10	Afar	Zone 05	Semurobina Gelalo	Class-VII
11	Afar	Zone 05	Telalak	Class-III
12	Amhara	Awi	Dengila	Class-VI
13	Amhara	Awi	Guagusa Shekudad	Class-III
14	Amhara	Awi	Guangua	Class-III
15	Amhara	Bahir Dar Liyu	Bahir Dar Liyu	Class-I
16	Amhara	East Gojjam	Debre Markos Town	Class-I
17	Amhara	East Gojjam	Dejen	Class-V
18	Amhara	East Gojjam	Enemay	Class-IV
19	Amhara	East Gojjam	Gonchasiso Enese	Class-V
20	Amhara	East Gojjam	Huletej Enese	Class-IV
21	Amhara	East Gojjam	Machakel	Class-IV
22	Amhara	North Gondar	Adiarikay	Class-VI
23	Amhara	North Gondar	Chilga	Class-III
24	Amhara	North Gondar	Debark	Class-IV
25	Amhara	North Gondar	Gondar Town	Class-I
26	Amhara	North Gondar	Jan Amora	Class-VII
27	Amhara	North Gondar	Lay Armachew	Class-VI
28	Amhara	North Gondar	Metema	Class-VI
29	Amhara	North Gondar	Misrak Belesa	Class-V
30	Amhara	North Gondar	Quara	Class-VI
31	Amhara	North Gondar	Tach Armacho	Class-II
32	Amhara	North Gondar	Wegera	Class-VI
33	Amhara	North Shewa	Ankober	Class-V
34	Amhara	North Shewa	Basona Werana	Class-II

NO	Region	Zone	TGA Center or Woreda	TGA Class
35	Amhara	North Shewa	Berehet	Class-VI
36	Amhara	North Shewa	Ensaro	Class-V
37	Amhara	North Shewa	Kewet	Class-V
38	Amhara	North Shewa	Menz Gera Meder	Class-VII
39	Amhara	North Shewa	Menze Keya Gebreal	Class-VII
40	Amhara	North Shewa	Merhabete	Class-V
41	Amhara	North Shewa	Minjar Shenkora	Class-V
42	Amhara	North Shewa	Mojana Wedera	Class-VI
43	Amhara	North Wollo	Delanta Wereda	Class-IV
44	Amhara	North Wollo	Guba Lafto	Class-II
45	Amhara	North Wollo	Lasta	Class-IV
46	Amhara	North Wollo	Meket	Class-IV
47	Amhara	Oromiya	Bati	Class-III
48	Amhara	Oromiya	Kemise Town	Class-II
49	Amhara	South Gonder	Debretabor	Class-II
50	Amhara	South Gonder	Fogera	Class-III
51	Amhara	South Gonder	Misrak Este	Class-VI
52	Amhara	South Wolo	Debresina	Class-III
53	Amhara	South Wolo	Dese Town	Class-I
54	Amhara	South Wolo	Jama	Class-IV
55	Amhara	South Wolo	Tehuledere	Class-V
56	Amhara	South Wolo	Tenta	Class-VI
57	Amhara	South Wolo	Were Ilu	Class-II
58	Amhara	Wag Himra	Gazgibila	Class-VI
59	Amhara	Wag Himra	Sekota Town	Class-V
60	Amhara	West Gojjam	Bure	Class-III
61	Amhara	West Gojjam	Dega Damot	Class-III
62	Amhara	West Gojjam	Finote Selam Town	Class-IV
63	Amhara	West Gojjam	Mecha	Class-III
64	Amhara	West Gojjam	North Achefer	Class-III
65	Amhara	West Gojjam	Sekela	Class-III
66	Benishangul Gumuz	Assosa	Assosa	Class-III
67	Benishangul Gumuz	Assosa	Bilidigilu	Class-VII
68	Benishangul Gumuz	Assosa	Kurmuk	Class-VII
69	Benishangul Gumuz	Kamashi	Blo Jiganifado	Class-V
70	Benishangul Gumuz	Kamashi	Yaso	Class-VI

NO	Region	Zone	TGA Center or Woreda	TGA Class
71	Benishangul Gumuz	Metekel	Bulen	Class-III
72	Benishangul Gumuz	Metekel	Dibate	Class-VII
73	Benishangul Gumuz	Metekel	Guba	Class-V
74	Dire Dawa	Dire Dawa	Gorgora	Class-I
75	Gambella	Agnuwak	Abobo	Class-VII
76	Gambella	Agnuwak	Gambela Town	Class-III
77	Gambella	Mejenger	Mengesh	Class-VI
78	Gambella	Nuwer	Jikawo	Class-VII
79	Gambella	Nuwer	Wantawo	Class-VII
80	Harari	Harer	Hundene	Class-I
81	Oromia	Adama Special Zone	Adama Town	Class-I
82	Oromia	Arsi	Asela Town	Class-III
83	Oromia	Arsi	Chole	Class-V
84	Oromia	Arsi	Deksis	Class-IV
85	Oromia	Arsi	Enkelo Wabe	Class-III
86	Oromia	Arsi	gololcha	Class-IV
87	Oromia	Arsi	Hitosa	Class-III
88	Oromia	Arsi	Jeju	Class-II
89	Oromia	Arsi	Limuna Bilbilo	Class-V
90	Oromia	Arsi	Munesa	Class-IV
91	Oromia	Arsi	Robe	Class-III
92	Oromia	Arsi	Seru	Class-III
93	Oromia	Arsi	Shirka	Class-IV
94	Oromia	Arsi	Sude	Class-IV
95	Oromia	Arsi	Zeway Dugda	Class-V
96	Oromia	Bale	Agarfa	Class-V
97	Oromia	Bale	Berbere	Class-VI
98	Oromia	Bale	Delo Mena	Class-III
99	Oromia	Bale	Ginir	Class-V
100	Oromia	Bale	Gololcha	Class-V
101	Oromia	Bale	Goro	Class-IV
102	Oromia	Bale	Legehida	Class-VI
103	Oromia	Bale	Raitu	Class-VI
104	Oromia	Bale	Robe Town	Class-II
105	Oromia	Bale	Gura Damole	Class-VII
106	Oromia	Borena	Arero	Class-V

NO	Region	Zone	TGA Center or Woreda	TGA Class
107	Oromia	Borena	Bule Hora	Class-IV
108	Oromia	Borena	Dire	Class-IV
109	Oromia	Borena	Dugdadewa	Class-VI
110	Oromia	Borena	Gelana	Class-V
111	Oromia	Borena	Teltele	Class-IV
112	Oromia	Borena	Yabelo	Class-IV
113	Oromia	Burayu Special	Burayu	Class-I
114	Oromia	East Hararge	Gole Oda	Class-IV
115	Oromia	East Hararge	Goro Gutu	Class-IV
116	Oromia	East Hararge	Haromaya	Class-II
117	Oromia	East Hararge	Kombolicha	Class-IV
118	Oromia	East Hararge	Meta	Class-III
119	Oromia	East Shewa	Akaki	Class-III
120	Oromia	East Shewa	Bishoftu Town	Class-II
121	Oromia	East Shewa	Bora	Class-IV
122	Oromia	East Shewa	Boset	Class-IV
123	Oromia	East Shewa	Fentale	Class-II
124	Oromia	East Shewa	Gimbichu	Class-VI
125	Oromia	East Shewa	Lomme	Class-IV
126	Oromia	East Shewa	Zeway Town	Class-II
127	Oromia	East Wellega	Diga	Class-VI
128	Oromia	East Wellega	Gida Keremu	Class-V
129	Oromia	East Wellega	Jimma Arjo	Class-VI
130	Oromia	East Wellega	Limu	Class-V
131	Oromia	East Wellega	Nekemte Town	Class-II
132	Oromia	East Wellega	Sibu Sire	Class-V
133	Oromia	East Wellega	Wama Hagelo	Class-VI
134	Oromia	Guji	AdolaTown	Class-III
135	Oromia	Guji	Bore	Class-IV
136	Oromia	Guji	Dima	Class-IV
137	Oromia	Guji	Negele Town	Class-IV
138	Oromia	Guji	Odo Shakiso	Class-I
139	Oromia	Guji	Qercha	Class-III
140	Oromia	Horo Gudru Wellega	Abay Chomen	Class-III
141	Oromia	Horo Gudru Wellega	Gudru	Class-VII
142	Oromia	Horo Gudru Wellega	Horo	Class-VII

NO	Region	Zone	TGA Center or Woreda	TGA Class
143	Oromia	Horo Gudru Wellega	Jarte Jardga	Class-V
144	Oromia	Horo Gudru Wellega	Jima Rare	Class-VII
145	Oromia	Horo Gudru Wellega	Shambu Town	Class-V
146	Oromia	Ilu Aba Bora	Bedele Town	Class-IV
147	Oromia	Ilu Aba Bora	Gechi	Class-III
148	Oromia	Ilu Aba Bora	Metu Town	Class-II
149	Oromia	Ilu Aba Bora	Yayu	Class-IV
150	Oromia	Jimma	Chora Boter	Class-II
151	Oromia	Jimma	Dedo	Class-II
152	Oromia	Jimma	Gera	Class-V
153	Oromia	Jimma	Gomma	Class-IV
154	Oromia	Jimma	Limu Kosa	Class-V
155	Oromia	Jimma	Omonada	Class-VI
156	Oromia	Jimma	Seka Chekorsa	Class-VI
157	Oromia	Jimma	Shebe Senbo	Class-II
158	Oromia	Jimma	Sigmo	Class-V
159	Oromia	Jimma	Tiro Afeta	Class-V
160	Oromia	Jimma Spe Town	Jimma Spe Town	Class-I
161	Oromia	North Shewa	Bereh	Class-V
162	Oromia	North Shewa	Debre Libanos	Class-VI
163	Oromia	North Shewa	Dera	Class-IV
164	Oromia	North Shewa	FicheTown	Class-IV
165	Oromia	North Shewa	Kimbibit	Class-V
166	Oromia	North Shewa	Kuyu	Class-III
167	Oromia	North Shewa	Sulullta	Class-V
168	Oromia	North Shewa	Wuchale	Class-VI
169	Oromia	Qeleme Wellega	Dale Wabera	Class-III
170	Oromia	Qeleme Wellega	Dembi Dolo Town	Class-III
171	Oromia	Qeleme Wellega	Gidame-Census Desig.TB Defined	Class-III
172	Oromia	South West Shewa	Becho	Class-V
173	Oromia	South West Shewa	Kersana Malima	Class-VII
174	Oromia	South West Shewa	Sebeta Town	Class-I
175	Oromia	South West Shewa	Seden Sodo	Class-VI
176	Oromia	South West Shewa	Weliso Town	Class-IV
177	Oromia	South West Shewa	Wonchi	Class-IV
178	Oromia	West Arsi	Adaba	Class-V

NO	Region	Zone	TGA Center or Woreda	TGA Class
179	Oromia	West Arsi	Arsi Negele	Class-III
180	Oromia	West Arsi	Dodola	Class-III
181	Oromia	West Arsi	Kofele	Class-VI
182	Oromia	West Arsi	Kore	Class-VI
183	Oromia	West Arsi	Nensebo	Class-IV
184	Oromia	West Arsi	Shala	Class-II
185	Oromia	West Arsi	Shashemene Town	Class-II
186	Oromia	West Hararge	Anchar	Class-IV
187	Oromia	West Hararge	Chiro Town	Class-II
188	Oromia	West Hararge	Habro	Class-III
189	Oromia	West Hararge	Mesela	Class-IV
190	Oromia	West Hararge	Quni	Class-III
191	Oromia	West Shewa	Abuna Gindeberet	Class-IV
192	Oromia	West Shewa	Adea Berga	Class-II
193	Oromia	West Shewa	Ambo Town	Class-II
194	Oromia	West Shewa	Bako Tibe	Class-VI
195	Oromia	West Shewa	Chelia	Class-IV
196	Oromia	West Shewa	Dano	Class-II
197	Oromia	West Shewa	Dendi	Class-V
198	Oromia	West Shewa	Ginde Beret	Class-V
199	Oromia	West Shewa	Jeldu	Class-VI
200	Oromia	West Shewa	Tikur Enchini	Class-VI
201	Oromia	West Wellega	Begi	Class-V
202	Oromia	West Wellega	Gimbi	Class-I
203	Oromia	West Wellega	Guliso	Class-II
204	Oromia	West Wellega	Kundala	Class-V
205	Oromia	West Wellega	Lalo Asabi	Class-IV
206	Oromia	West Wellega	Mene Sibu	Class-IV
207	Oromia	West Wellega	Nejo	Class-III
208	Oromia	West Wellega	Seyo Nole	Class-V
209	SNNP	Alaba	Alaba	Class-VI
210	SNNP	Amaro Special	Amaro Special Wereda	Class-VI
211	SNNP	Awassa Town	Awassa Town	Class-I
212	SNNP	Bench Maji	Maji	Class-IV
213	SNNP	Bench Maji	Mizan Aman Town	Class-III
214	SNNP	Bench Maji	Shay Bench	Class-VI

NO	Region	Zone	TGA Center or Woreda	TGA Class
215	SNNP	Dawuro	Esira	Class-VII
216	SNNP	Dawuro	Gena Bosa	Class-VII
217	SNNP	Dawuro	Loma	Class-VII
218	SNNP	Dawuro	Mareka	Class-IV
219	SNNP	Derashe Sp. Wereda	Derashe Special	Class-VII
220	SNNP	Gamo Gofa	Ariba Minichi Zuriya	Class-II
221	SNNP	Gamo Gofa	Bonke	Class-IV
222	SNNP	Gamo Gofa	Deramalo	Class-V
223	SNNP	Gamo Gofa	Kucha	Class-VI
224	SNNP	Gamo Gofa	Mirab Abaya	Class-IV
225	SNNP	Gamo Gofa	Sawula Town	Class-II
226	SNNP	Gamo Gofa	Uba Debretsehay	Class-V
227	SNNP	Gamo Gofa	Zala	Class-VI
228	SNNP	Gedeo	Dila Town	Class-II
229	SNNP	Gedeo	Kochore	Class-IV
230	SNNP	Gedeo	Wenago	Class-IV
231	SNNP	Gedeo	Yirgachefe	Class-IV
232	SNNP	Gurage	Butajira Town	Class-I
233	SNNP	Gurage	Enemor Ener	Class-VI
234	SNNP	Gurage	Ezha	Class-VI
235	SNNP	Gurage	Sodo Woreda	Class-III
236	SNNP	Gurage	Welkite Town	Class-III
237	SNNP	Hadiya	Hosaena	Class-II
238	SNNP	Hadiya	Soro	Class-IV
239	SNNP	Kefa	Chena	Class-V
240	SNNP	Kefa	Tulo	Class-VII
241	SNNP	Kembata Timbaro	Doyo Gena	Class-IV
242	SNNP	Kembata Timbaro	Kacha Bira	Class-II
243	SNNP	Kembata Timbaro	Kedida Gamela	Class-VI
244	SNNP	Konso Special	Konso Special	Class-III
245	SNNP	Konta	Konta Special	Class-V
246	SNNP	Sheka	Anderacha	Class-VII
247	SNNP	Sheka	Masha	Class-VII
248	SNNP	Sheka	Yeki	Class-V
249	SNNP	Sidama	Aleta Wondo	Class-III
250	SNNP	Sidama	Arbegona	Class-IV

NO	Region	Zone	TGA Center or Woreda	TGA Class
251	SNNP	Sidama	Aroresa	Class-VI
252	SNNP	Sidama	Bensa	Class-IV
253	SNNP	Sidama	Boricha	Class-VI
254	SNNP	Sidama	Bursa	Class-IV
255	SNNP	Sidama	Chuko	Class-IV
256	SNNP	Sidama	Dale	Class-III
257	SNNP	Sidama	Gorche	Class-IV
258	SNNP	Sidama	Loko Abaya	Class-VII
259	SNNP	Sidama	Shebedino	Class-III
260	SNNP	Sidama	Wendo Genet	Class-IV
261	SNNP	Siliti	Alichu Woriro	Class-V
262	SNNP	Siliti	Lanifaro	Class-VI
263	SNNP	Siliti	Mirab Azernet Berbere	Class-IV
264	SNNP	Siliti	Wilbareg	Class-IV
265	SNNP	South Omo	Gngangatom	Class-VII
266	SNNP	South Omo	Hamer	Class-III
267	SNNP	South Omo	Selamago	Class-VII
268	SNNP	South Omo	South Ari	Class-III
269	SNNP	Wolayita	Damot Gale	Class-III
270	SNNP	Wolayita	Damot Sore	Class-IV
271	SNNP	Wolayita	Damot Woyide	Class-V
272	SNNP	Wolayita	Humbo	Class-VI
273	SNNP	Wolayita	Ofa	Class-V
274	SNNP	Wolayita	Sodo Town	Class-II
275	SNNP	YEM	Yem Special	Class-II
276	Somali	Afder	Afker	Class-VI
277	Somali	Afder	El Kere	Class-VII
278	Somali	Degehabur	Degehabur	Class-IV
279	Somali	Fik	Fik	Class-VII
280	Somali	Fik	Selehad	Class-VII
281	Somali	Gode	Gode	Class-VI
282	Somali	Gode	Imiberi	Class-VII
283	Somali	Gode	Kelafo	Class-V
284	Somali	Jijiga	Babile	Class-IV
285	Somali	Jijiga	Jijiga	Class-II
286	Somali	Jijiga	Kebri Beyah	Class-VII

NO	Region	Zone	TGA Center or Woreda	TGA Class
287	Somali	Korahe	Kebridehar	Class-V
288	Somali	Korahe	Shekosh	Class-VII
289	Somali	Liben	Filtu	Class-V
290	Somali	Liben	Moyale	Class-VII
291	Somali	Shinile	Ayisha	Class-VII
292	Somali	Shinile	Denbel	Class-VII
293	Somali	Shinile	Mieso	Class-VI
294	Somali	Shinile	Shinile	Class-VI
295	Somali	Warder	Warder	Class-V
296	Tigray	Central Tigray	Abiyi adi Town	Class-IV
297	Tigray	Central Tigray	Adwa	Class-I
298	Tigray	Central Tigray	Degua Temben	Class-VI
299	Tigray	Eastern Tigray	Adi Girat Town	Class-II
300	Tigray	Eastern Tigray	Saesi Tsadamba	Class-V
301	Tigray	Eastern Tigray	Wekero Town	Class-III
302	Tigray	Mekele Especial Zone	Semene Mekele_Mekele	Class-I
303	Tigray	North Western Tigray	Asegede Tsimbila	Class-V
304	Tigray	North Western Tigray	Shiraro Town	Class-IV
305	Tigray	North Western Tigray	Shire Enida Silase Town	Class-III
306	Tigray	South Tigray	Alamata Town	Class-V
307	Tigray	South Tigray	Hintalo Wajirat	Class-V
308	Tigray	South Tigray	Maychew Town	Class-III
309	Tigray	South Tigray	Rya Azebo	Class-V
310	Tigray	Western Tigray	Humera Town	Class-II
311	Tigray	Western Tigray	Welqayet	Class-IV
312	Afar	Zone 01	Elidar	Class-VII

11.4 HDM-4 Analysis Results

- HDM-4 Analysis Result of Existing Roads to be upgraded to better Standard

The NPV, EIRR and Benefit-Cost Ratio of Asphalt Roads Proposed for Upgrading to Better Standard Asphalt						
No.	Road Name	Length (KM)	NPV	IRR	B-CR	Selected or not
1	Holeta-Muger	56.91	16,417.29	48.0	5.191	YES
2	Mojo-Adama	20.43	12,493.71	156.6	11.005	YES
3	Holeta-Ambo	81.91	12,314.68	54.1	2.706	YES
4	Addis Ababa-Mojo	68.47	11,825.26	98.0	3.096	YES
5	Addis Ababa-Commando	115.00	10,215.00	57.3	5.39	YES
6	Alemgena-Waliso	111.48	9,600.83	38.9	1.550	YES
7	Adama-Metehara	93.74	5,524.75	32.6	1.061	YES
8	Adama-Assela	76.82	3,390.58	25.1	0.794	YES
9	Alemgena-Butajira	117.28	3,204.78	23.7	0.492	YES
10	Metehara-Awash Junction	38.18	2,250.20	32.6	1.061	YES
11	Ziway-Shashamane	91.15	1,697.51	16.2	0.335	YES
12	Mojo-Ejere-Arerti-Kesem	35.25	793.61	20.6	0.405	YES
13	Chanco-Derba	22.27	415.03	16.1	0.335	YES
14	Dengego(Dire Dawa)-Harar	23.13	253.70	14.4	0.197	YES
15	Samera-Serdo	37.46	201.44	11.4	0.091	YES
16	Adaitu-Mille	30.39	201.12	11.7	0.119	YES
17	Addis-Holeta	37.29	91.62	38.6	1.649	YES
18	Dobi-Galafi	15.03	75.53	11.4	0.091	YES
19	Dangla-Bahirdar	66.74	17.29	10.3	0.005	YES
20	Shashamane-Hawassa	17.94	16.29	11.2	0.004	YES
21	Mojo-Ziway	88.16	15.20	10.4	0.03	YES
22	Dessie-Kombolcha	20.33	-366.70	4.2	-0.325	NOT
23	Abay River Bridge-Dejen	20.00	-397.30	4.9	-0.371	NOT
24	Wark River-Wanba River	34.00	-451.51	6.9	-0.239	NOT
25	Mille-Wark River	35.40	-482.75	6.8	-0.245	NOT
26	Quiha-Maymekeden	16.73	-503.16	-3.5	-0.541	NOT
27	Kombolcha-Harbu	22.09	-706.50	-0.3	-0.576	NOT
28	Bure-Dangla	39.00	-724.48	4.1	-0.333	NOT
29	Shashamane-Wondogenet	18.04	-758.94	-2.8	-0.756	NOT
30	Gedamitu-Gewane	56.41	-767.84	6.9	-0.245	NOT
31	Welkite-Gibe River	28.25	-774.65	-1.6	-0.493	NOT

The NPV, EIRR and Benefit-Cost Ratio of Asphalt Roads Proposed for Upgrading to Better Standard Asphalt

No.	Road Name	Length (KM)	NPV	IRR	B-CR	Selected or not
32	Areka-Sodo	28.33	-775.45	0.8	-0.493	NOT
33	Kobo-Kulubi	26.48	-783.79	0.0	-0.533	NOT
34	Debre Sina-Guda Beret	26.38	-799.44	-0.2	-0.545	NOT
35	Gemeto Mazoria-Wondo Genet	18.22	-803.28	-4.1	-0.793	NOT
36	Kulubi-Dengego	31.85	-814.80	1.0	-0.460	NOT
37	Adiabun-Axum	24.16	-834.96	-1.2	-0.621	NOT
38	Meksegnet-Azezo Airport	29.25	-924.92	-0.8	-0.569	NOT
39	Axum-Salakelaka	27.04	-937.15	-1.6	-0.624	NOT
40	Robit-Debre Sina	32.00	-969.76	-0.2	-0.545	NOT
41	Mersa-Woldia	29.21	-989.96	-0.9	-0.610	NOT
42	Godobert-Debre Birhan	34.09	-1,043.63	-0.2	-0.551	NOT
43	Wuchale-Mersa	30.84	-1,045.22	-0.9	-0.610	NOT
44	Woliso-Welkite	40.84	-1,054.86	1.4	-0.465	NOT
45	Dessie-Haik	29.69	-1,059.41	-1.4	-0.642	NOT
46	Unzo River-Adiarkay	19.76	-1,066.56	-14.0	-0.971	NOT
47	Chefarabet-Ataya	32.46	-1,109.77	0.1	-0.615	NOT
48	Adiarkay-Buya	26.17	-1,123.13	-3.8	-0.772	NOT
49	Haik-Wuchale	31.79	-1,134.35	-1.4	-0.642	NOT
50	Woldia-Robit	33.52	-1,167.02	-1.6	-0.627	NOT
51	Robit-Waja	33.40	-1,169.75	-1.5	-0.630	NOT
52	Metu-Gore	23.04	-1,171.79	-10.4	-0.915	NOT
53	Welkite-Mazoiria	59.98	-1,185.79	5.2	-0.356	NOT
54	Salkelaka-Shire	34.82	-1,253.15	-2.3	-0.648	NOT
55	Bichena-Debre work	23.87	-1,314.69	-15.1	-0.991	NOT
56	Chagni-Mambuk	54.55	-1,351.50	-4.8	-0.811	NOT
57	Bahirdar-Wereta	59.21	-1,376.44	2.5	-0.418	NOT
58	Debremarkos-Bure	49.61	-1,379.32	1.1	-0.500	NOT
59	Mota-Zema River Bridge	30.00	-1,387.71	-5.6	-0.832	NOT
60	Butajira-Ziway	51.38	-1,420.26	0.3	-0.497	NOT
61	Ataye-Robit	48.00	-1,453.36	-0.2	-0.545	NOT
62	Bojeber-Butajira	27.42	-1,458.19	-13.0	-0.957	NOT
63	Mekele-Abi Adi	92.91	-1,461.23	3.9	-0.429	NOT
64	Negash-Adigrat	53.66	-1,572.80	0.3	-0.527	NOT
65	Shehede-Metema	33.23	-1,573.59	-6.3	-0.852	NOT

The NPV, EIRR and Benefit-Cost Ratio of Asphalt Roads Proposed for Upgrading to Better Standard Asphalt

No.	Road Name	Length (KM)	NPV	IRR	B-CR	Selected or not
66	Wereta-Debre Tabour	39.70	-1,574.50	-3.5	-0.714	NOT
67	Bizet-Adigrat	34.28	-1,587.63	-7.1	-0.833	NOT
68	Tik-Bichena	29.59	-1,617.70	-14.5	-0.984	NOT
69	Gedo-Bako	58.94	-1,628.66	2.9	-0.497	NOT
70	Adigrat-Zalanbesa	39.85	-1,632.33	-3.9	-0.737	NOT
71	Commando-Abay River	71.09	-1,649.82	-0.0	-0.418	NOT
72	Azezo Junction-Buhena	35.45	-1,678.34	-6.3	-0.852	NOT
73	Gonder-Ambagiorgis	33.29	-1,711.09	-10.0	-0.925	NOT
74	Harbu-Chefarobit	53.95	-1,741.28	-0.2	-0.581	NOT
75	Adigudom-Mekele	44.89	-1,781.67	-3.3	-0.714	NOT
76	Gibe River-Saja	56.87	-1,788.48	-0.6	-0.566	NOT
77	Degusit-Unzo River	34.49	-1,793.24	-12.0	-0.936	NOT
78	Mekele-Negash	61.29	-1,796.44	0.3	-0.527	NOT
79	Alaba-Alem Gebeya-Wulberg	58.79	-1,834.20	1.3	-0.561	NOT
80	Wanba River-Chifera	34.68	-1,845.65	-12.5	-0.957	NOT
81	Gojeb River1-Bonga	39.49	-1,923.90	-7.1	-0.877	NOT
82	Gindowoin-Mota	35.26	-1,930.48	-14.6	-0.985	NOT
83	Hossana-Areka	68.05	-1,966.34	-2.8	-0.520	NOT
84	Kose-Gilgel-Gibe River II	36.00	-1,993.02	-15.6	-0.996	NOT
85	Meke Nejo-Nejo	58.33	-2,013.70	-2.1	-0.621	NOT
86	Adet-Bahirdar	41.50	-2,074.90	-8.1	-0.889	NOT
87	Sodo-Mirab Abaya	38.46	-2,074.92	-13.0	-0.971	NOT
88	Dejen-Debre Markos	69.07	-2,084.83	-0.1	-0.543	NOT
89	Gonder Junction-Muse Bamb	41.32	-2,088.22	-10.3	-0.909	NOT
90	Arbaminch-Wezeka	41.26	-2,151.42	-11.7	-0.938	NOT
91	Keyafer-Jinka	39.40	-2,164.21	-15.1	-0.988	NOT
92	Gambella-Itang	46.52	-2,315.07	-11.4	-0.896	NOT
93	Kossober-Chagni	61.04	-2,322.24	-2.8	-0.685	NOT
94	Wereta-Maksegnat	76.01	-2,323.40	0.2	-0.550	NOT
95	Mendi-Bambasi	46.39	-2,366.52	-10.2	-0.918	NOT
96	Gubre Juction-Bojeber	54.80	-2,366.65	-5.0	-0.777	NOT
97	Alawha-Chifra	63.77	-2,371.60	-0.9	-0.669	NOT
98	Debrework-Gundeweyn	46.09	-2,376.46	-11.0	-0.928	NOT
99	Ambagiorgis-Debark	64.20	-2,408.40	-1.0	-0.675	NOT

The NPV, EIRR and Benefit-Cost Ratio of Asphalt Roads Proposed for Upgrading to Better Standard Asphalt

No.	Road Name	Length (KM)	NPV	IRR	B-CR	Selected or not
100	Wezeka-Konso	50.02	-2,599.64	-11.5	-0.935	NOT
101	Gewane-Hundufu	48.69	-2,601.93	-12.9	-0.961	NOT
102	Bako-Nekemte	76.10	-2,641.52	0.4	-0.625	NOT
103	Bonga-Shishende	49.55	-2,675.75	-13.1	-0.972	NOT
104	Addis Debre Birhan	112.62	-2,707.17	4.0	-0.433	NOT
105	Itang Junction-Lare-Old Jikawo	54.81	-2,727.63	-11.4	-0.896	NOT
106	Bambasi-Assosa	51.84	-2,748.34	-12.6	-0.961	NOT
107	Waja-Maychew	78.31	-2,757.42	-1.9	-0.634	NOT
108	Rawyna-Myckadra	51.42	-2,771.04	-13.2	-0.970	NOT
109	Alaba-Sodo	65.28	-2,809.78	-3.3	-0.775	NOT
110	Negade bahir-Shehede	56.17	-2,828.68	-9.0	-0.906	NOT
111	Arberakete-Kobo	99.66	-2,893.69	0.1	-0.523	NOT
112	Buhena-Negade Bahir	64.00	-2,953.15	-5.8	-0.832	NOT
113	Serdo-Hanef	56.77	-2,985.97	-11.3	-0.948	NOT
114	Aysaita junction-Aysaita	58.91	-3,107.10	-11.3	-0.948	NOT
115	Mazoria-Hossana	64.94	-3,130.40	-8.0	-0.867	NOT
116	Butajira-Hossana	99.79	-3,133.64	-3.7	-0.565	NOT
117	Awash Junction-Arberakete	106.54	-3,290.24	-0.4	-0.556	NOT
118	Indasilase-Dedebit	71.21	-3,314.81	-6.0	-0.838	NOT
119	Saja-Jimma	105.63	-3,336.99	-0.6	-0.569	NOT
120	Assela-Bokoji-Dodola	121.29	-3,431.56	2.7	-0.509	NOT
121	Maychew-Adigudom	86.20	-3,491.30	-3.7	-0.729	NOT
122	Hundufu-Adayitu	71.21	-3,558.13	-8.4	-0.899	NOT
123	Bizet-Adiabun	76.98	-3,565.21	-7.1	-0.833	NOT
124	Nejo-Mendi	75.51	-3,633.35	-8.1	-0.866	NOT
125	Abi Adi-Adwa	92.70	-3,709.06	-3.7	-0.720	NOT
126	Konso-Woito	70.98	-3,713.21	-11.9	-0.941	NOT
127	Shashamane-Dodola	75.56	-3,871.01	-10.6	-0.922	NOT
128	Dima-Goge	97.10	-3,901.50	-15.3	-0.989	NOT
129	Debre Tabour-Debre Zebit	99.50	-3,936.38	-3.6	-0.712	NOT
130	Mille-Semera	73.97	-3,947.90	-12.2	-0.960	NOT
131	Mirab Abaya-Arbaminch	84.13	-3,957.52	-7.2	-0.847	NOT
132	Alamata-Moheny-Hiwane	119.02	-3,995.46	-1.1	-0.604	NOT
133	Robe-Goba	13.71	-4,231.86	-0.7	-0.668	NOT

The NPV, EIRR and Benefit-Cost Ratio of Asphalt Roads Proposed for Upgrading to Better Standard Asphalt

No.	Road Name	Length (KM)	NPV	IRR	B-CR	Selected or not
134	Dedebit-Adirement	77.66	-4,234.49	-14.3	-0.981	NOT
135	Jigjiga-Togochale	95.68	-4,240.05	-4.3	-0.795	NOT
136	Nekemte-Mekenejo	113.00	-4,443.47	-2.9	-0.708	NOT
137	Dodola-Robe	11.13	-4,473.57	-3.1	-0.724	NOT
138	Abay River Bridge - Gunda Woin	83.00	-4,594.28	-15.5	-0.996	NOT
139	Awash junction-Gedamitu	92.58	-4,626.02	-8.4	-0.899	NOT
140	Dansha-Humera	105.63	-4,835.28	-6.2	-0.824	NOT
141	Adigoshu-Humera	92.21	-4,836.59	-11.4	-0.944	NOT
142	Assosa-Kurmuk	98.17	-5,229.28	-13.1	-0.959	NOT
143	Jimma-Bedele	141.14	-5,247.86	-4.7	-0.669	NOT
144	Hageremariam-Yabello	100.70	-5,340.42	-11.6	-0.954	NOT
145	Jimma-Bonga	111.47	-5,430.68	-7.1	-0.877	NOT
146	Yabello-Mega	100.14	-5,461.12	-14.4	-0.981	NOT
147	Jigjiga-Degehabour	170.27	-6,278.12	-2.6	-0.664	NOT
148	Kebremengist-Negele	120.12	-6,614.54	-14.8	-0.991	NOT
149	Shire-Adigoshu	178.92	-6,882.71	-1.4	-0.692	NOT
150	Aposto-Adola	154.32	-7,060.46	-5.2	-0.823	NOT
151	Serdo-Afdera	190.15	-7,347.09	-1.2	-0.695	NOT
152	Gore-Gambella	145.21	-7,811.67	-13.	-0.968	NOT
153	Kebri dar-Gode	173.22	-8,096.06	-7.4	-0.841	NOT
154	Degehabour-Kebri dehar-Gode	211.97	-9,880.96	-7.3	-0.839	NOT

- HDM-4 Analysis Results for Asphalt Roads proposed for Pavement Reconstruction**

The NPV, EIRR and Benefit-Cost Ratio of Asphalt Roads proposed for Pavement Reconstruction						
No	Road Name	Length (KM)	NPV	IRR	B-CR	Selected /Not
1	Butajira-Hossana	99.79	4,446.85	39.4	2.706	YES
2	Commando-Abay River	71.09	4,105.44	47.7	3.507	YES
3	Hossana-Areka	68.05	3,579.38	44.1	3.194	YES
4	Arberakete-Kobo	99.66	2,826.71	26.9	1.722	YES
5	Awash Junction-Arberakete	106.54	2,758.06	25.3	1.572	YES
6	Jimma-Bedele	141.14	2,554.08	23.0	1.099	YES
7	Saja-Jimma	105.63	2,454.69	24.0	1.411	YES
8	Jigjiga-Degehabour	170.27	2,387.43	19.3	0.851	YES
9	Bahirdar-Wereta	59.21	2,343.34	31.2	2.403	YES
10	Alamata-Moheny-Hiwane	119.02	2,256.68	21.8	1.151	YES
11	Butajira-Ziway	51.38	1,893.91	31.1	2.238	YES
12	Dejen-Debre Markos	69.07	1,845.82	25.6	1.623	YES
13	Wereta-Maksegnat	76.01	1,582.53	22.6	1.264	YES
14	Mekele-Negash	61.29	1,531.44	24.9	1.517	YES
15	Bure-Dangla	39.00	1,490.46	30.7	2.314	YES
16	Debre Markos-Bure	49.61	1,456.32	26.5	1.783	YES
17	Woliso-Welkite	40.84	1,452.13	29.8	2.159	YES
18	Negash-Adigrat	53.66	1,340.79	24.9	1.517	YES
19	Gibe River-Saja	56.87	1,279.00	23.9	1.366	YES
20	Kulubi-Dengego	31.85	1,247.36	32.7	2.378	YES
21	Meke Nejo-Nejo	58.33	1,245.85	23.6	1.297	YES
22	Ataye-Robit	48.00	1,194.52	25.0	1.512	YES
23	Welkite-Gibe River	28.25	1,187.37	38.4	2.552	YES
24	Addis Debre Birhan	112.62	1,149.09	16.0	0.620	YES
25	Welkite-Mazoirra	59.98	1,053.92	19.8	1.067	YES
26	Harbu-Chefarobit	53.95	1,006.10	21.3	1.132	YES
27	Areka-Sodo	28.33	980.89	29.6	2.103	YES
28	Dessie-Kombolcha	20.33	957.92	34.8	2.861	YES
29	Assela-Bokoji-Dodola	121.29	902.83	14.5	0.452	YES
30	Waja-Maychew	78.31	889.76	18.0	0.690	YES
31	Godobert-Debre Birhan	34.09	867.68	25.0	1.546	YES
32	Gedamitu-Gewane	56.41	862.64	18.6	0.929	YES

The NPV, EIRR and Benefit-Cost Ratio of Asphalt Roads proposed for Pavement Reconstruction						
No	Road Name	Length (KM)	NPV	IRR	B-CR	Selected /Not
33	Quiha-Maymekeden	16.73	841.74	43.9	3.055	YES
34	Mekele-Abi Adi	92.91	827.93	18.0	0.820	YES
35	Debre Tabour-Debre Zebit	99.50	826.64	16.1	0.505	YES
36	Robit-Debre Sina	32.00	795.70	25.0	1.510	YES
37	Meksegnet-Azezo Airport	29.25	781.48	26.0	1.622	YES
38	Kobo-Kulubi	26.48	736.83	26.4	1.690	YES
39	Nekemte-Mekenejo	113.00	718.68	14.6	0.386	YES
40	Mille-Wark River	35.40	714.01	21.7	1.225	YES
41	Abi Adi-Adwa	92.70	709.20	15.6	0.465	YES
42	Wark River-Wanba River	34.00	673.10	21.4	1.202	YES
43	Debre Sina-Guda Beret	26.38	655.95	25.0	1.510	YES
44	Salkelaka-Shire	34.82	637.61	21.8	1.112	YES
45	Kossober-Chagni	61.04	573.72	16.7	0.571	YES
46	Robit-Waja	33.40	508.04	19.8	0.924	YES
47	Woldia-Robit	33.52	503.99	19.8	0.913	YES
48	Axum-Salakelaka	27.04	497.62	21.7	1.118	YES
49	Alaba-Alem Gebeya-Wulberg	58.79	448.37	14.9	0.463	YES
50	Wuchale-Mersa	30.84	439.73	19.2	0.866	YES
51	Dodola-Robe	110.0	424.47	12.9	0.232	YES
52	Mersa-Woldia	29.21	416.49	19.2	0.866	YES
53	Maychew-Adigudom	86.20	405.96	13.6	0.286	YES
54	Gedo-Bako	58.94	396.28	14.2	0.408	YES
55	Kombolcha-Harbu	22.09	395.32	21.1	1.087	YES
56	Adiabun-Axum	24.16	373.96	19.8	0.938	YES
57	Haik-Wuchale	31.79	369.61	17.7	0.706	YES
58	Dessie-Haik	29.69	345.20	17.7	0.706	YES
59	Wereta-Debre Tabour	39.70	340.41	16.2	0.521	YES
60	Adigudom-Mekele	44.89	299.24	14.9	0.405	YES
61	Abay River Bridge-Dejen	20.00	234.52	17.2	0.739	YES
62	Adigrat-Zalanbesa	39.85	213.24	14.1	0.325	YES
63	Chefarabet-Ataya	32.46	184.93	13.8	0.346	YES
64	Robe-Goba	13.71	153.31	11.1	0.082	YES
65	Gubre Junction-Bojeber	54.80	140.65	12.2	0.156	YES
66	Bako-Nekemte	76.10	65.21	10.8	0.052	YES

The NPV, EIRR and Benefit-Cost Ratio of Asphalt Roads proposed for Pavement Reconstruction						
No	Road Name	Length (KM)	NPV	IRR	B-CR	Selected /Not
67	Ambagiorgis-Debark	64.20	45.27	10.7	0.043	YES
68	Alawha-Chifra	63.77	32.35	10.6	0.031	YES
69	Itang Junction-Lare-Old Jikawo	54.81	30.58	10.8	0.034	YES
70	Gambella-Itang	46.52	25.95	10.8	0.034	YES
71	Shire-Adigoshu	178.92	-18.07	10.2	-0.006	NOT
72	Shashamene-Wondogenet	18.04	-87.52	6.8	-0.294	NOT
73	Gemeto Mazoria-Wondo Genet	18.22	-104.35	5.8	-0.348	NOT
74	Adiarkay-Buya	26.17	-139.61	6.1	-0.324	NOT
75	Bizet-Adigrat	34.28	-195.07	5.2	-0.346	NOT
76	Chagni-Mambuk	54.55	-196.77	5	-0.398	NOT
77	Metu-Gore	23.04	-203.91	1.4	-0.537	NOT
78	Mota-Zema River Bridge	30.00	-227.36	4.0	-0.460	NOT
79	Dansha-Humera	105.63	-251.14	8.3	-0.144	NOT
80	Shehede-Metema	33.23	-281.72	3.0	-0.515	NOT
81	Azezo Junction-Buhena	35.45	-300.57	3.0	-0.515	NOT
82	Unzo River-Adiarkay	19.76	-312.51	-12.8	-0.960	NOT
83	Bojeber-Butajira	27.42	-330.17	-4.0	-0.731	NOT
84	Mazoria-Hossana	64.94	-355.21	5.4	-0.332	NOT
85	Gonder Junction-Muse Bamb	41.32	-365.76	1.4	-0.538	NOT
86	Nejo-Mendi	75.51	-366.22	6.0	-0.295	NOT
87	Bichena-Debre work	23.87	-382.92	-13.8	-0.974	NOT
88	Mirab Abaya-Arbaminch	84.13	-386.11	6.4	-0.279	NOT
89	Degusit-Unzo River	34.49	-396.44	-2.9	-0.698	NOT
90	Gonder-Ambagiorgis	33.29	-416.21	-2.9	-0.759	NOT
91	Indasilase-Dedebit	71.21	-434.20	5.1	-0.370	NOT
92	Kebridar-Gode	173.22	-435.24	8.1	-0.153	NOT
93	Alaba-Sodo	65.28	-436.35	5.2	-0.406	NOT
94	Bizet-Adiabun	76.98	-438.05	5.2	-0.346	NOT
95	Arbaminch-Wezeka	41.26	-445.08	-1.5	-0.655	NOT
96	Gojeb River1-Bonga	39.49	-447.72	-0.1	-0.688	NOT
97	Adet-Bahirdar	41.50	-460.62	-0.3	-0.666	NOT
98	Debrework-Gundeweyn	46.09	-462.89	-0.3	-0.610	NOT
99	Tik-Bichena	29.59	-465.17	-12.3	-0.955	NOT
100	Degehabour-Kebri dehar	211.97	-480.58	8.4	-0.138	NOT

The NPV, EIRR and Benefit-Cost Ratio of Asphalt Roads proposed for Pavement Reconstruction						
No	Road Name	Length (KM)	NPV	IRR	B-CR	Selected /Not
101	Wanba River-Chifera	34.68	-494.97	-7.5	-0.866	NOT
102	Mendi-Bambasi	46.39	-501.99	-0.7	-0.657	NOT
103	Wezeka-Konso	50.02	-526.88	-1.1	-0.640	NOT
104	Buhena-Negade Bahir	64.00	-533.50	3.1	-0.507	NOT
105	Gindowoin-Mota	35.26	-553.96	-12.2	-0.954	NOT
106	Jigjiga-Togochale	95.68	-567.23	5.6	-0.359	NOT
107	Kose-Gilgel-Gibe River II	36.00	-578.01	-14.2	-0.975	NOT
108	Serdo-Afdera	190.15	-578.48	8.1	-0.185	NOT
109	Keyafer-Jinka	39.40	-600.14	-11.4	-0.925	NOT
110	Sodo-Mirab Abaya	38.46	-621.18	-11.5	-0.981	NOT
111	Negade bahir-Shehede	56.17	-658.70	-1.6	-0.712	NOT
112	Gewane-Hundufu	48.69	-706.35	-8.3	-0.881	NOT
113	Bambasi-Assosa	51.84	-743.04	-7.8	-0.877	NOT
114	Shashamane-Dodola	75.56	-758.04	-0.0	-0.609	NOT
115	Rawyna-Myckadra	51.42	-769.60	-9.1	-0.909	NOT
116	Konso-Woito	70.98	-781.04	-1.9	-0.668	NOT
117	Bonga-Shishende	49.55	-805.21	-12.0	-0.987	NOT
118	Serdo-Hanef	56.77	-842.95	-7.3	-0.903	NOT
119	Aysaita junction-Aysaita	58.91	-877.14	-7.3	-0.903	NOT
120	Hundufu-Adayitu	71.21	-914.80	-2.5	-0.780	NOT
121	Dima-Goge	97.10	-1,037.51	-10.3	-0.887	NOT
122	Aposto-Adola	154.32	-1,141.20	4.2	-0.449	NOT
123	Awash junction-Gedamitu	92.58	-1188.63	-2.5	-0.779	NOT
124	Mille-Semera	73.97	-1200.64	-11.	-0.985	NOT
125	Assosa-Kurmuk	98.17	-1,202.58	-4.1	-0.744	NOT
126	Dedebit-Adirement	77.66	-1,208.35	-11.6	-0.945	NOT
127	Adigoshu-Humera	92.21	-1,260.90	-5.6	-0.830	NOT
128	Jimma-Bonga	111.47	-1,263.79	-0.1	-0.688	NOT
129	Abay River Bridge-Gunda Woin	83.00	-1,352.97	-14.9	-0.990	NOT
130	Hageremariam-Yabello	100.70	-1,556.62	-8.7	-0.939	NOT
131	Yabello-Mega	100.14	-1,567.20	-12.1	-0.950	NOT
132	Kebremengist-Negele	120.12	-2,029.10	-16.1	-1.026	NOT
133	Gore-Gambella	145.21	-2,180.63	-9.2	-0.912	NOT
Total		8,424.43				

- HDM-4 Result of Gravel Roads for Upgrading to Asphalt Concrete**

No	Road Name	Length (km)	NPV	Priority	Remark	Region
1	Isak R.Bridge - Guba	70	4,213.7	1		Benishangul Gumuz
2	Mechara - Dire shak husen	126	3,285.0	2		Oromia
3	Robe – Goro	60	1,586.0	3		Oromia
4	Goro –Ginir	70	1,586.0	4		Oromia
5	Ginchi - Busa-Tulubolo	48	1,534.3	5		Oromia
6	Chida - Waka	80	1,423.0	6		South
7	Seraba - Delgi - Shahura	100	738.6	7		Amhara
8	Woito - Erbore	39	411.9	8		South
9	Mazoria - Bojobar	10	379.0	9	few roads are under construction by ERA adjecnet to the road	SNNP
10	Sherkole - Blue Nile	80	202.2	10		Benishangul Gumuz
11	Negele - Bulbul	43	135.0	11		Oromia
12	Holeta - Sebeta	29	33.5	12	considered as part of the first outer ring	Oromia
13	Debre Markos-Waber	60	-7.4	13		Amhara
14	Waber - Aratie	60	-7.4	14		Amhara
15	Metu – Alge	50	-613.5	15		Oromia
16	Erbore - Mentrara	39	-726.8	16	extension of Woito - Erbore road so it is better to consider under the priority of Woito - Erbore road	South
17	Imi - Hargele	285	-1,127.0	17		Somali
18	Hargele - Dolobay	60	-1,622.5	18		Somali
19	Mega - Wachile	109	-1,856.0	19	Extension of Negele-Bulbul road. So it is recommended to	Oromia

No	Road Name	Length (km)	NPV	Priority	Remark	Region
20	Wachile - Bulbul	84	-1,856.0	20	Extension of Negele-Bulbul road. So it is	Oromia
21	Filtu - Triangula	104	-2,474.6	21		Somali
22	Triangula - Bogol Manyo	30	-2,474.6	22		Somali
23	Bogol Manyo -Sarole	28	-2,474.6	23		Somali
24	Sarole -Dollo	55	-2,474.6	24		Somali
25	Semara-Didigsala-Yallo	168	9,248.0	25		Afar
26	Hida-Yallo	71	3,932.6	26		Afar
27	Yabello-Metagefersa-Obolo	105	3,142.0	27		Oromia
28	Tolay Juction-Tolay	63.19	3,131.4	28		Oromia
29	Yallo-Chercher-Mehoni	65	2,719.0	29		Afar and Tigray
30	Kerseber-Debredamo	52.46	2,559.7	30		Tigray
31	Dilb-Kulmesk	25	2,559.0	31		Amhara
32	Ejere-Balchi-Shenkora Yohannis	20.94	2,353.2	32		Oromia and Amhara
33	Jigjiga-Teferi Ber	72.65	1,998.4	33		Somali
34	Tongo-Gidame	69	1,974.4	34		Oromia and BG
35	Indeto-Gasera	56.97	1,073.4	35		Oromia
36	Mendi-Dalati	37.75	465.3	36		Oromia and BG
37	Brindad-Teltele	34.23	294.9	37		Oromia
38	Terma Ber- Saladengay	20.71	294.0	38		Amhara
39	Dibate Junction-Dibate	43.38	287.5	39		Benishangul Gumuz
40	Ebenat-Belesa	39.96	276.0	40		Amhara
41	Kobo-Dadar	12.31	213.5	41		Oromia
42	Delgi-Chuhawit	27.77	72.1	42		Amhara

No	Road Name	Length (km)	NPV	Priority	Remark	Region
43	Saja-Fofa	27.24	6.1	43		SNNP
44	Kebado Jun-Dilla	6	-46.0	44		SNNP
45	Dera-Sire	23.63	-56.1	45	consider under the priority of Machera-Dire shek Hussien since it is an	Oromia
46	Tere-Amoute	19	-71.0	46		SNNP
47	Aletawendojun-Chuko	9	-76.0	47		SNNP
48	Alelitu-Etisa	12	-102.5	48		Oromia
49	Mitak Jun-Mitak	13	-109.1	49		Amhara
50	Sire-Chole	65.05	-128.1	50	consider under the priority of Machera-Dire shek Hussien since it is an	Oromia
51	Metu-Sor Hydro Electric Power	22.68	-174.1	51		Oromia
52	Beke-Zemute	21.96	-234.0	52		SNNP
53	Fofa-Gilgel Gibe II	30.15	-261.9	53	Extension of Saja-Fofa road so it is recommended to consider under the	SNNP
54	Kella-Dugda	23.89	-288.9	54		Oromia and SNNP
55	Tiya-Gerenso-Amoute	58	-305.9	55		SNNP
56	Eliya-Adura	71	-440.8	56		Gambella
57	Fejeji Junction-Fejeji	60.56	-471.8	57		SNNP
58	Bichena-Debre Markos	42.84	-637.4	58		Amhara
59	Hailwuha-Factory2-Factory1-Hana	78	-648.0	59		SNNP
60	Bui Aymelel-Rob Gebiya	38.38	-714.4	60		SNNP
61	Nahile-Abhala	59.73	-831.6	61		Afar
62	Robit-Awash	64.5	-920.9	62		Amhara and Afar

No	Road Name	Length (km)	NPV	Priority	Remark	Region
63	Bui-Medre kebdi-Meki	58.99	-1,034.0	63	The road is parallel to Kella-Dugda road	SNNP
64	Wacha-Maji	174.25	-1,133.8	64		SNNP
65	Konso-Burji(Soyoma)	76.02	-1,262.0	65		SNNP
66	Keyafer-Turmi	80.08	-1,335.5	66		SNNP

11.5 Proposed Missing Links with New Functional Classification

Link_Name	Length_Km	Class	Final Rank (get priority Final Analysis)
Gida-Yaso	68.7	Main Access	Ongoing
Adola-Melkadesta-Harnfema	72.4	Main Access	Ongoing
Maksegnit-Arbaya Belessa	80.7	Main Access	Ongoing
Adigudom - Gijet - Saba Tegu	71.3	Main Access	Ongoing
Hoja- Dure-Goro Kelate	67.3	Main Access	Ongoing
Simada-Saynet-Busso	136.3	Main Access	Ongoing
Bure - Gomer	41.9	Main Access	Ongoing
Chencha-Chano	16.3	Main Access	Ongoing
Shirishir-Wubhamer spur road	11.6	Main Access	Ongoing
Kofle-Qore-Shire	30.3	Collector	Ongoing
Birki - Haikemesahal- Atsbi Jun	19.9	Main Access	Ongoing
Dobi-Elidar-Beliho	18.2	Trunk	Ongoing
Raitu-Shakisa-Elkere	140.1	Collector	Design Completed
Sire(Moto)-Mote-Nunu-Arjo	112.0	Collector	Under Design
Dama(Anfele)-Bore	24.8	Main Access	Under Design
Dogo-Kofele-Repi--DedoYirgachefe	37.7	Main Access	Design Initiated/Completed
Chulute-Debre Markos	93.9	Link	Design Initiated/Completed
Tuludimtu-chefedonsa-shenkora-Arerti	81.6	Link	Design Initiated/Completed
Kerseber - Sobiyan	20.1	Main Access	Design Initiated/Completed
Deramalo-otolo	43.1	Main Access	Design Initiated/Completed
Shilabo-Ferfer	126.9	Link	Special Case
Adulala Jun- Yerer Mountain	12.1	Main Access	Tourism Project

Muti - Adaadi Mariam	12.5	Main Access	Tourism Project
Tenta - Mekdela Amba	13.5	Feeder	Tourism Project
Silkamaba-Benja-Mote	76.7	Link	1
TuluBollo-Mojo(Lot 2, Km 46-Km 103)	57.8	Link	2
TuluBollo-Mojo (Lot 1, Km 0-Km 46)	45.7	Link	3
Burka-Midaga-Tolla-Harar Road Project	184.1	Link	4
Shinshicho-Shone -Hawassa	53.4	Main Access	5
Bahirdar-Kunzila	56.5	Main Access	6
Toltawond-Abot-Jenya	171.7	Main Access	7
Harshin- Haskul-Aroresa-K.Dehar,Lot2 Km193-Km368	175.0	Link	8
Harshin- Haskul-Aroresa-K.Dehar Lot1-Km 0-Km193	193.2	Link	9
Metagefersa-Wachile-Dakwta-Erer	165.4	Link	10
Ginir-Fiq, lot2, Km115-Km213	98.6	Main Access	11
Ginir-Fiq, Lot1, Km0-Km115	114.5	Main Access	12
Duruksi-Warder-Dabre Wein, Lot2 Km126-Km343	166.4	Main Access	13
Duruksi-Warder-Dabre Wein, Lot1 Km0-Km126	176.9	Main Access	14
Bachuma-Oudadishi-Selamber-Tebela Lot2,Km81-Km245	154.5	Link	15
Bachuma-Oudadishi-Selamber-Tebela Lot 1,Km 0-Km 81	81.3	Link	16
Bule Hora-Aflala-Meta Gefersa	128.3	Link	17
Aje-Alage-Koshe-Mito Road	54.7	Link	18
Kersa-Shire	38.1	Main Access	19
Gilgelgibe-Tirokeneni-Tole Jima	84.2	Link	20
Midaga-Obole-Mareg Dugheleh Lot 3 Km 152-Km 237	84.0	Main Access	21
Midaga-Obole-Mareg Dugheleh Lot 1, Km 0-Km 78.5	78.5	Main Access	22
Midaga-Obole-Mareg Dugheleh Lot 2, Km 78.5-Km 152	74.6	Main Access	23

Debre Eliyas jun-Finoteselam-G/Abay-Fagita-Merawi	159.0	Link	24
Adami Tulu- Assela	55.1	Trunk	25
Angetu-Mena	25.3	Link	26
Gode - Shilabo-Biyo Ado, Lot1, Km 0-Km 143	142.6	Main Access	27
Gode - Shilabo-Biyo Ado, Lot2, Km 143-Km 235	93.3	Main Access	28
Warder - Agere Weyin - Goldgob, lot1,Km0-km90	89.7	Main Access	29
Warder - Agere Weyin - Goldgob, lot1,Km90-Km188	98.5	Main Access	30
Assasa-Agarfa	79.5	Main Access	31
Chire- Adola	111.1	Link	32
Remti- Burka	182.6	Link	33
Awash-Fenatle-Deweile Ju-Km149-Km249	100.0	Link	34
Awash-Fenatle-Deweile Ju-Km 0-Km 149	149.6	Link	35
Awash-Fenatle-Deweile Ju Km 249-349	94.3	Link	36
Deder-Tirtira	76.2	Main Access	37
Adet-Fagita-Addiskidame-Pawe	138.7	Link	38
Jinka-Washawuha-Washmeda	115.9	Feeder	39
Goha Tsion-Kachise	65.7	Link	40
Arbegona-Yirgalem	52.7	Link	41
Mechara-Fik-Deghamedo-Degehabur Km146-Km 256 (Fik)	110.1	Link	42
Mechara -Fik-Deghamedo-Degehabur km 256-km 411	154.1	Link	43
Mechara -Fik-Deghamedo-Degehabur km-0-Km146	146.3	Link	44
Meki-Iteya	47.6	Link	45
Aje-Loke-Shasha-Tebela,Lot1-Km54	54.3	Link	46
Aje-Loke-Shasha-Tebela,Lot2-Km107	53.1	Link	47
Tula-Hantate-Shigasha-Tebela	70.4	Link	48
Delo Mena-Kundi	120.5	Link	49

Nonsebo-Angetu	46.4	Link	50
Meyu-Goda-Ritu, lot-2, km110-Km207	96.9	Main Access	51
Meyu-Goda-Ritu, Lot1, Km0-Km110	110.8	Main Access	52
Tulema-Areka	61.8	Main Access	53
Kofele-Arbegona-Daye	23.1	Collector	54
Segeg-Ali-Dihun-Imi JCT, Lot2, km102-km200	98.6	Collector	55
Segeg-Ali-Dihun-Imi JCT, Lot1, km0-Km102	102.8	Collector	56
Bohotle-Goldgob	177.7	Main Access	57
Sentu-Yanfa-Gechi	80.0	Link	58
Bedele-Bube	159.5	Main Access	59
Gobesa -Bekoji-Kersa	73.2	Link	60
Hambiso-G/Meskel-Weleka-Wegedi-Key Mebrat	176.0	Main Access	61
Misrak Geshamo-Boh	171.0	Link	62
Shekuhussien-Beltu-Ramsi	111.2	Collector	63
Togowuchale-Harshin	55.2	Main Access	64
Afdera Jun-Mengaga-Endhura-Elidar	179.4	Trunk	65
Sofomr-Mio-Gorobebeksa	86.0	Link	66
AMBO-LEMLEM BERHA	117.6	Trunk	67
Shinle-Harewe	18.7	Main Access	68
Derba-Inchni-Gojo	73.9	Main Access	69
Arerti-Melka Jilo-Metehara Jun	38.2	Link	70
Ginir-Dihun-Shekosh-Wareder Lot 3, Km368-Km Km 540	165.1	Link	71
Ginir-Dihun-Shekosh-Wareder Lot 1, Km 0-Km 182	182.7	Link	72
Ginir-Dihun-Shekosh-Wareder Lot 2, Km 182-Km 367	185.4	Link	73
Girawa - Husse-Waldiya-Meyu	109.8	Link	74
FugnaBira-Ejersa-Chinhaksen-Jigjiga	68.1	Main Access	75

Aware-Misrak Gashamo	136.3	Link	76
Nejo-Yaso-Gelasa-Dibate jun	37.8	Main Access	77
MeliyuBele-Filtu, Lot1,Km0-km149 (Genale)	147.9	Main Access	78
MeliyuBele-Filtu, Lot2,Km149-km234	86.4	Main Access	79
Tewedros Ketema-M Siliase-Aykel	139.4	Main Access	80
Yabelo-Jenya	92.6	Main Access	81
Harbuchulele-Inge-Welkite	62.0	Main Access	82
AGAMSA-ABAY RIVER-ROBE GEBEYA Lot 1, Km 0-Km 80	80.0	Link	83
AGAMSA-ABAY RIVER-ROBE GEBEYA Lot 2, Km 80-Km 140	59.6	Link	84
Guliso-Nejo	39.6	Main Access	85
Bedelle -Koma	74.0	Main Access	86
Bati - Chifra	45.0	Main Access	87
Metehara - Mechara	64.4	Link	88
Atanago-Koma-Mote	74.2	Main Access	89
Maji-Tum-Tulgit	39.7	Link	90
Moyale-Jenya	181.9	Link	91
Chila - Wukero Maray	21.8	Main Access	92
Gewane-Afdem-Harmukale, Lot1, km0-Km103	103.1	Main Access	93
Gewane-Afdem-Harmukale,, Lot2, km103-Km201	92.8	Main Access	94
Welenchiti -Sodere Road Junction	24.3	Main Access	95
Arerti-Welenchiti	38.5	Main Access	96
Teltele-Meramaro-Abot	52.0	Main Access	97
Awash Arba-MIWerer-Bora, Lot2, Km 62-Km 180	118.0	Collector	98
Awash Arba-MIWerer-Bora Lot1, Km 0-km 62	61.9	Collector	99
Axum - Adet	29.8	Link	100
Mengshi-Dima	66.9	Main Access	101

Sire-Adugna-Bakojima-Gutin	74.5	Link	102
Maganan-Maserodenb-Aberahajira Road	54.9	Main Access	103
Muger-Gibre Guracha	46.4	Main Access	104
Arbaminch -Nechsar park -Kele	83.5	Main Access	105
Edaga Hamus--Sawni-Adewuka-Beda	94.6	Link	106
Waka- Morka	87.8	Collector	107
Filtu - Al Abdile - Manguada	138.1	Link	108
Yeberet-Arb Gebeya	32.8	Main Access	109
Chitu-Gindo-Darge	54.8	Main Access	110
Magna-Semare-Seru	75.6	Link	111
Maganana-Mahbireselassie-Serba Delgi	119.1	Main Access	112
Gewane Jun-Bike	83.1	Collector	113
Hargele - Imi Km0-Km115	116.0	Trunk	114
Hargele - Imi Km115-Km231	115.4	Trunk	115
Angetu-Bedere	74.0	Link	116
Jemu - Barda-Kitie	77.6	Main Access	117
Bordede - Gelemeso	44.7	Main Access	118
Jawi-Kunzla	82.6	Main Access	119
Adigosh-Birkutan-Sittona	36.7	Main Access	120
Adi Mella-Debre Genet-Filafil	87.9	Link	121
Amba Gyiorgis-Arba Tseguar-Abi Adi Jun. k118-km231	112.4	Link	122
Amba Gyiorgis-ArbaTseguar-Abi Adi Jun. Km0-Km118	118.7	Link	123
ARSI NEGELE-KORE-MERARO	67.5	Main Access	124
Tulgiti-Tirmatid-South Sudan Border	62.1	Link	125
Bonga-Duba Yaneba-Dime/Laska	141.9	Link	126
Mechara-Tulema-Bure	73.7	Trunk	127

Mayichew-Bora-Sekota	68.5	Link	128
Behir-Shigili-Maykadera	36.0	Main Access	129
Gidole - Beneta-Kako	84.2	Main Access	130
Dessie Jun-Ambamariam	43.6	Main Access	131
Sirtuager-Alemgebeya-Ankober	46.7	Collector	132
Sherkole-Kurmuk	64.9	Collector	133
Diksis-Kulla-Derba-Halila-Chole	68.0	Main Access	134
Lemlem Bereha-Elias Jun	38.5	Main Access	135
Daleti-Knocho-Wembera	93.4	Link	136
Sebasebat-Chewaka-Ephrem	67.5	Main Access	137
Imi Jun- El Bahid-Bur Huso, lot1, Km0-Km98	98.3	Collector	138
Imi Jun- El Bahid-Bur Huso, lot2, Km98-Km213	115.5	Collector	139
Dipa-Ciam	34.0	Main Access	140
Bullen - Gublak	70.4	Main Access	141
Smada-Gundeweyn	71.7	Main Access	142
Ajbar-Yeberet-Shola-Kon	97.5	Link	143
Harosebu-Gna-Kara-Melkaebitcha-Babo	70.6	Main Access	144
Mehoney-Yalo-Degadigu	93.3	Main Access	145
Bure-Girar	91.0	Link	146
Sembo-Muketure	59.0	Main Access	147
Belesa-Arba Tsegvar jun	50.1	Main Access	148
Deghabur-Awabre	78.8	Link	149
Dilybza-Arba Tsegvar	39.0	Collector	150
Sirtuager-Awasharba	60.1	Main Access	151
Shiraro-Lama	37.2	Main Access	152
Bele Arsi - Siba	26.8	Main Access	153

Ameya-Koisha-Salayesh-Laha	77.4	Main Access	154
Dodola-Bensaware	71.0	Link	155
Ayema - Kunzila-Gelago Junc	49.8	Trunk	156
Waja-Yalo	37.6	Link	157
Filakit-Arbgebaya-Simada	93.8	Main Access	158
Gode-Beredele-Bug Bere	135.9	Main Access	159
Ambamariam-Yeberet	60.2	Main Access	160
Hateto-Wayu	44.1	Collector	161
Dig Degu - Hamaye Kem - Kunaba Lot 1, Km 0- Km 54	54.0	Link	162
Dig Degu - Hamaye Kem - Kunaba Lot 2, Km 54- Km144	89.5	Link	163
Mendi-Wama-Shemeltok	35.2	Main Access	164
Mekanbirahan-Arbatsiguar JCT	60.0	Collector	165
Maytemen-Ketema Nigus	35.0	Main Access	166
Tulusa - Dejach Meda	28.7	Main Access	167
Atsbi - Konaba-Berhale	20.5	Link	168
Maytsebri-Mayhanse-Dedebit Jun	76.2	Main Access	169

11.6 Implementation Plan

- Implementation Plan for Rehabilitation Projects with their cost

No	Road Name	Length (KM) (or Remaining length for ongoing Project)	Unit Cost (in million)	Project Cost (in million)	Plan Year
1	Sansus-Tatek-Kella	8.6	54.34	467.324	2020/21
2	Jimma-Agaro-Dedessa River	70.3	16.33	1147.999	2020/21
3	Ambo-Gedo	31.1	7.39	229.829	2020/21
4	Chuko-Yirgacehefe	24	13.6	326.4	2020/21
5	Yirgacehefe-Hagermariam	7.8	17.065	133.107	2020/21
1	Addis-Modjo-Meki	90	20	1800	2020/21
2	Meki - Shashemene-Hawassa	160	20	3200	2020/21
3	Adama-Awash	132	20	2640	2020/21
4	Mile-Semera-Galafi	182	20	3640	2020/21
5	Adigudom-Mekele-Wukro	90	20	1800	2020/21
6	Waja - Maychew-Adigudum	165	20	3300	2020/21
7	Addis-Chancho - Fiche	115	20	2300	2020/21
8	Fiche - Gohatsiyon	42	20	840	2020/21
9	Gibe River-Jima	173	20	3460	2020/21
10	Woldiya-Flakit	138	20	2760	2020/21
11	Shashemene - Alaba	67	20	1340	2020/21
12	Gedo - Nekemete-Mekenajo	225	20	4500	2020/21

No	Road Name	Length (KM) (or Remaining length for ongoing Project)	Unit Cost (in million)	Project Cost (in million)	Plan Year
13	Arbaminch-Wezeka-Konso Lot I (Arbaminch-Konso)	92	20	1840	2020/21
14	Arbaminch-Wezeka-Konso Lot 2 (Konso-Jinka)	150	20	3000	2020/21
15	Kombolcha-Mekaneselam	180	20	3600	2020/21
16	Mekeneselam-Abay River - Gindeweyin	127	20	2540	2020/21
17	Alemgena-Butajira-Sodo Lot I (Alemgena-Butajira)	117	20	2340	2020/21
18	Alemgena-Butajira-Sodo Lot II (Butajira - Areka-Sodo)	196	20	3920	2020/21
19	Woreta-Flakit	160	20	3200	2020/21
20	Gohatsiyon-Dejen	37	20	740	2020/21
21	Mekele - Abi Adi	92.91	20	1858.2	2020/21
22	Maisebri - Dima - Fiyelwuha	156	20	3120	2020/21
23	Jigjiga - Degehabour	170.27	20	3405.4	2020/21
24	Mekenajo - Nejo	58.33	20	1166.6	2020/21
25	Nejo-Mendi	75	20	1500	2020/21
26	Mendi-Bambasi-Assosa	98	20	1960	2020/21
27	Assosa-Sherkole	88	20	1760	2020/21
28	Bahirdar - Gondar	177	20	3540	2020/21
29	Gondar-Humera	257	20	5140	2020/21
30	Awash Junction - Kulubi - Dire Dawa (km 0+000-69+000)	69	20	1380	2020/21

No	Road Name	Length (KM) (or Remaining length for ongoing Project)	Unit Cost (in million)	Project Cost (in million)	Plan Year
31	Awash Junction - Kulubi - Dire Dawa (km 69+000-139+468)	90	20	1800	2020/21
32	Awash Junction - Kulubi - Dire Dawa (km 139+468-222+000)	83	20	1660	2020/21
33	Awash Junction - Kulubi - Dire Dawa (km 222+000-290+864)	68	20	1360	2020/21
34	Debre markos - Bahirdar Lot 1: (Debre markos-Fenote Selam)	90	20	1800	2020/21
35	Debre markos - Bahirdar Lot 2: (Fenote Selam-Addis Kidam Town)	85	20	1700	2020/21
36	Debre markos - Bahirdar Lot 3: (Addis Kidam -BahirdarTown)	90	20	1800	2020/21
37	Addis - Kore/Contract 1: Addis - Sebeta	12	20	240	2020/21
38	Sebeta-Kore(Contract-2)	62	20	1240	2020/21
39	Kore-Gibe River (Contract-3)	94	20	1880	2020/21
40	Mojo - Adama	20	20	400	2024/25
41	D/Brhan-Ataye-Dessie Overlay	226	20	4520	2024/25
42	Dodola -S/Washa-Robe-Goba	125	20	2500	2024/25
43	Degehabour-Keberidehar	212	20	4240	2024/25
44	Keberidahar-Gode	173	20	3460	2024/25
45	Assosa-Kumuruk	52	20	1040	2024/25
46	Welkite - Mazoirra	59.98	20	1199.6	2024/25
47	Nazerth-Assela	75	20	1500	2024/25
48	Melkasa-Sodere	8	20	160	2024/25

No	Road Name	Length (KM) (or Remaining length for ongoing Project)	Unit Cost (in million)	Project Cost (in million)	Plan Year
49	Dessie - Haik-Wuchale-Mersa	93	20	1860	2024/25
50	Haik Estifanos - Haik	4.2	20	84	2024/25
51	Mersa - Woldia-Robit-Waja	97	20	1940	2024/25
52	Ditcheto - Elidar-Manda-Bure	141	20	2820	2024/25
53	Assaita junction - Assaita	58.9	20	1178	2024/25
54	Mille +10 - Chifra	105	20	2100	2024/25
55	Almata-Mehony-Hiwane	119	20	2380	2024/25
56	Butajir-Zeway	51	20	1020	2024/25
57	Assela-Bokoji-Dodola	121	20	2420	2026/27
58	Abi Adi-Adwa	93	20	1860	2026/27
59	Axum-Selekelaka-Shire	62	20	1240	2026/27
60	Alaba-Alemgebeya-Wulbarga	60	20	1200	2026/27
61	Kosober-Chagi	61	20	1220	2026/27
62	Adigrat-Zalanbessa	40	20	800	2026/27
63	Gubre Jun-Bojober	55	20	1100	2026/27
64	Gondar-Amba Girgis-Debar	100	20	2000	2026/27
65	Itang Jun-Lare (Old Jikawo)	55	20	1100	2026/27
66	Gambella-Itang	47	20	940	2026/27
67	Shire-Adigosh	180	20	3600	2026/27
68	Shashemen-Wondogenet- Gemto Mazoria	36	20	720	2026/27
69	Adi Arkay-Buya	26	20	520	2026/27
70	Adigrat-Bizet-Adi Abun	112	20	2240	2026/27
71	Chagni-Mamuk	55	20	1100	2026/27
72	Metu-Gore-Gambella	170	20	3400	2026/27
73	Tik-Bichena-Debrework-Mota- Bahirdar	251	20	5020	2026/27
74	Azezo-Metema	189	20	3780	2026/27
75	Debar-May Tsebri	102	20	2040	2026/27
76	May Tsebri-Shire	81	20	1620	2026/27

No	Road Name	Length (KM) (or Remaining length for ongoing Project)	Unit Cost (in million)	Project Cost (in million)	Plan Year
77	Mazoria-Hossaina	65	20	1300	2026/27
78	Wolkite-Butajira	82	20	1640	2026/27
79	Sodo-Arbaminch	122	20	2440	2026/27
80	Jima-Bonga	100	20	2000	2026/27
81	Jigjiga-Togowuchale	96	20	1920	2026/27
82	Chifera-Wodia	63	20	1274	2026/27

- **Implementation Plan Ongoing and Planned Upgrading Gravel to Asphalt Concrete Projects with their cost**

No	Name of Projects and Type of Intervention	Length (KM)	Unit Cost (in million)	Total Cost	Plan Year
1	Wolidia Town asphalt Road	5.4	56.45	227.00	2020/21
2	Durgi-Gibe River Cont.	27	13.96	88.52	2020/21
3	Durgi-gibe River Cont.2	28	13.46	118.22	2020/21
4	Azezo-Gonder	12.6	69.17	695.38	2020/21
5	Konso-Yabello	107	11.15	176.76	2020/21
6	Geshena-Bilbila	105	13.74	248.18	2020/21
7	Bilbila-Sekota	100	20.42	557.48	2020/21
8	Jinka-Mendere 1	53	22.91	701.95	2020/21
9	Ambo-Waliso	62	19.41	621.14	2020/21
10	Nekemte-Bure Lot II	87.65	20.14	745.75	2020/21
11	Mukaturi-Kokeb Mesk	58	13.25	511.53	2020/21
12	Tepi-Mizan	47.8	26.07	1,077.78	2020/21
13	Robe-Gasera-Ginir Lot I(Robe-Gasera)	60	12.83	584.84	2020/21
14	Gedo-Menebegna	80.5	14.19	667.80	2020/21
15	Ginchi-Km 59	59	15.22	745.26	2020/21
16	Este-Simada	52	37.03	1,817.70	2020/21
17	Kokeb Mesk-Alem Ketama	50	33.92	1,695.80	2020/21
18	Tercha-Chida	58	20.19	1,028.80	2020/21
19	Gasera-Ginir	61	13.80	771.10	2020/21
20	Diri-KM 78(Masha Lot I) Gimbo	62	12.58	749.73	2020/21
21	Mintamir-Metehbila-Matahara	82	13.37	846.28	2020/21
22	Tulubolo-Kella	80.1	16.35	1,036.39	2020/21
23	Itaya-Robe-Seru	75.6	17.52	1,158.71	2020/21

No	Name of Projects and Type of Intervention	Length (KM)	Unit Cost (in million)	Total Cost	Plan Year
24	KM 70 - Sawala(Dinke - Sawula 3)	76	13.42	946.62	2020/21
25	Sodo-KM 70(Dinke 2)	84.5	12.26	881.17	2020/21
26	Nekemte-Bure Lot I	86.1	21.09	1,520.71	2020/21
27	Korem-Sekota-Abi adi Cont.III(Abergele-Ageb)	76	13.45	1,017.11	2020/21
28	Nekemte-Bure Lot III	85	24.05	1,827.57	2020/21
29	Jimma-Chida	80	25.38	2,030.18	2020/21
30	Melkasa-Sodore-Nuraera-Matahara Junction	94	12.80	1,044.93	2020/21
31	Limu Junction-Kosa-Seka(Merewa-Somodo Seka)	94	24.13	2,268.39	2020/21
32	Harar-Kombolcha-Ejersa Goro-Fugnabira-Bombas	98	18.08	1,735.21	2020/21
34	Dambi Dolo-Gambella	112	12.00	1,344.53	2020/21
35	Gore-Tepi	140	27.57	3,633.48	2020/21
1	Gode Hargele, Lot 2: km 100 Hargele	112	24	2688	2020/21
2	Adiale-Girawa	53	24	1272	2020/21
3	Bahir Dar - Tisesat	22	24	528	2020/21
4	Agaro-Gera-Diri Mash Road	48	24	1152	2020/21
5	Ginir-Berdimtu	100	24	2400	2020/21
6	Woito - Turmi (2 lots: Woito - km70 & km70 Turmi)	120	24	2880	2020/21
7	Gimbi -Guyi-Alge-Metu	140	24	3360	2020/21
8	Chanka-Gidame	131	24	3144	2020/21
9	Dembecha – Fersebet -Adet	131	24	3144	2020/21
10	Debre Birhan – Deneba – Lemi Junction and Jihur – Deneba	108	24	2592	2020/21
11	Goba - Delomena	112	24	2688	2020/21

No	Name of Projects and Type of Intervention	Length (KM)	Unit Cost (in million)	Total Cost	Plan Year
12	Deberemarkose – Dega Tsion – Mota	122	24	2928	2020/21
13	Filtu-Dolo Odo-Dolobay	224	24	5376	2020/21
14	Negele - A/Gebeya	70	24	1680	2020/21
15	A/Gebeya - Filtu	60	24	1440	2020/21
16	Semara-Didigsala-Yallo	168	24	4032	2020/21
17	Wacha-Maji	174.3	24	4183.2	2020/21
18	Dire Masha Lot 2 Km 62- Masaha	62	24	1488	2020/21
19	Tenta – Gashena (both Contract 1 and 2)	79	24	1896	2020/21
20	Isak R.Bridge - Guba	70	24	1680	2020/21
35	Robe - Goro -Ginir	130	24	3120	2020/21
21	Bidre - Bitata	77	24	1848	2020/21
22	Delomena -Bidre	73	24	1752	2020/21
23	Yallo-Chercher-Mehoni	65	24	1560	2020/21
24	Maytemen – Maygaba – Maysebrey	110	24	2640	2020/21
25	Gode Hargele Lot 1: Gode Km 100	100	24	2400	2020/21
26	Diredawa -Shenele	10	24	240	2020/21
27	Mellodoni Junction-Manda-Bure	72	24	1728	2020/21
28	Bulbula - Alage	36	24	864	2020/21
29	Shambu – Agamsa	95	24	2280	2020/21
30	Nejo-Jarso-Begi-Yayo/South udan	150	24	3600	2020/21
31	Mankusa - Birsheleko	32	24	768	2020/21
32	Beradimtu - Immi	84	24	2016	2020/21
33	Magna - Mechara	140	24	3360	2024/25
34	Dilb-Kulmesk	25	24	600	2024/25
35	Ginchi - Busa-Tulubolo	48	24	1152	2024/25

No	Name of Projects and Type of Intervention	Length (KM)	Unit Cost (in million)	Total Cost	Plan Year
36	Imi - Gode	181	24	4344	2024/25
39	Kurmuk-Sherkole	80	24	1920	2024/25
40	Adiremtse – Awra – Dansha	72	24	1728	2024/25
41	Shahura - Gelego	157	24	3768	2024/25
42	Wondo -Dilla	31	24	744	2024/25
43	Shekhusen-Mechera	76	24	1824	2024/25
44	Seraba - Delgi - Shahura	84	24	2016	2024/25
45	Woito - Erbore	39	24	936	2024/25
46	Mazoria - Bojobar	10	24	240	2024/25
47	Sherkole - Blue Nile	80	24	1920	2024/25
48	Negele-Wachile-Mega	221	24	5304	2024/25
49	Holeta - Sebeta	29	24	696	2024/25
50	Erbore - Mentrara	39	24	936	2024/25
51	Imi-Hargele	150	24	3600	2024/25
52	Hargele - Dolobay	60	24	1440	2024/25
			24	0	2024/25
1	Hida-Yallo	71	24	1704	2024/25
2	Yabello-Metagefersa-Obolo	105	24	2520	2024/25
3	Tolay Juction-Tolay	63.2	24	1516.8	2024/25
4	Kerseber-Debredamo	52.5	24	1260	2024/25
5	Ejere-Balchi-Shenkora Yohannis	20.9	24	501.6	2024/25
6	Jiggiga-Teferi Ber	72.7	24	1744.8	2024/25
7	Tongo-Gidame	69	24	1656	2024/25
8	Indeto-Gasera	57	24	1368	2024/25

No	Name of Projects and Type of Intervention	Length (KM)	Unit Cost (in million)	Total Cost	Plan Year
9	Mendi-Dalati	37.8	24	907.2	2024/25
10	Brindad-Teltele	34.2	24	820.8	2024/25
11	Terma Ber- Saladengay	20.7	24	496.8	2024/25
12	Dibate Junction-Dibate	43.4	24	1041.6	2024/25
13	Ebenat-Belesa	40	24	960	2024/25
14	Kobo-Dadar	12.3	24	295.2	2024/25
15	Delgi-Chuhawit	27.8	24	667.2	2024/25
16	Saja-Fofa	27.2	24	652.8	2024/25
17	Kebado Jun-Dilla	6	24	144	2024/25
18	Dera-Sire	23.6	24	566.4	2024/25
19	Tere-Amoute	19	24	456	2024/25
20	Aletawendojun-Chuko	9	24	216	2024/25
21	Alelitu-Etisa	12	24	288	2024/25
22	Mitak Jun-Mitak	13	24	312	2024/25
23	Sire-Chole	65.1	24	1562.4	2024/25
24	Metu-Sor Hydro Electric Power	22.7	24	544.8	2024/25
25	Beke-Zemute	22	24	528	2024/25
26	Fofa-Gilgel Gibe II	30.2	24	724.8	2024/25
27	Kella-Dugda	23.9	24	573.6	2024/25
			24	0	2024/25
28	Tiya-Gerenso-Amoute	58	24	1392	2024/25
29	Eliya-Adura	71	24	1704	2024/25
30	Fejeji Junction-Fejeji	60.6	24	1454.4	2024/25
31	Bichena-Debre Markos	42.8	24	1027.2	2024/25

No	Name of Projects and Type of Intervention	Length (KM)	Unit Cost (in million)	Total Cost	Plan Year
32	Hailwuha-Factory2-Factory1-Hana	78	24	1872	2024/25
33	Bui Aymelet-Rob Gebiya	38.4	24	921.6	2024/25
34	Nahile-Abhala	59.7	24	1432.8	2024/25
35	Robit-Awash	64.5	24	1548	2024/25
36	Bui-Medre kebdi-Meki	59	24	1416	2024/25
37	Konso-Burji(Soyoma)	76	24	1824	2024/25
38	Keyafer-Turmi	80.1	24	1922.4	2024/25
39	Seru - Shekhusen	65	24	1560	2024/25
40	Yalo - Nahile	68	24	1632	2024/25
41	Gidame - Mugi	90.7	24	2176.8	2024/25
42	Shebelle - Imi	29	24	696	2024/25
43	Adura - Akobo and Adura - Burbe	125	24	3000	2024/25
44	Sugar F3 - Sugar F4	50	24	1200	2024/25
45	Tiya - Amote	12	24	288	2024/25
46	Gidole - Konso	23	24	552	2024/25
47	H/Mariam - Burji	61	24	1464	2024/25
48	Awragodana - Bole (Bole - Bojober)	24	24	576	2024/25
49	Begondi - Wenbera	47.5	24	1140	2024/25
50	Gilgelbeles - Dibate	58	24	1392	2024/25
51	Blue Nile - Dibate jun	57	24	1368	2024/25
52	Kamashi - Yaso	72	24	1728	2024/25
		9573			

Implementation Plan for Missing Link Projects with their Cost

No	Link name	Length	Unit Cost	Project Cost (in million)	Plan Year
1	Mekena Selam Town Asphalt Road	3	16.62	45.69	2020/21
2	Dichoto Galafi Junction-Alidar-Belho	78	34.15	109.62	2020/21
3	Dima-Radi	60.28	15.37	63.65	2020/21
4	Mizan-Dima	91.8	12.35	62.35	2020/21
5	Laska-Salayish	61.1	11.29	68.88	2020/21
6	Begondi-Wenbera	69.59	5.76	36.61	2020/21
7	Yabello Town Asphalt Road	7	40.94	286.55	2020/21
8	Shebel-Imi	36	3.57	24.97	2020/21
9	Dalol-Bada	41.22	30.36	237.45	2020/21
10	Debark-Bahit	62	10.80	84.66	2020/21
11	Mechew-Mehoni	17.43	21.72	176.38	2020/21
12	Kiwiha-Maymekden	24	23.00	187.91	2020/21
13	Dabat-Ajire Cont.1	43.2	21.56	188.85	2020/21
14	Jigjiga-Fafem-Gelalshe-Degehamedo	55.4	13.88	128.07	2020/21
15	Sodo-Tercha Lot 1	75.72	17.54	195.09	2020/21
16	Babile-Fik(KM 66-KM 93 Cont.3)	27	14.85	184.13	2020/21
17	Ayisedi-Kong(Guba-Begondi)	61.72	9.76	124.19	2020/21
18	Babile-Fik(KM 93-KM 126 Cont.)	33.34	13.44	184.33	2020/21
19	Salayish-Omo	78.5	8.72	126.42	2020/21
20	Omo(Say)-Magi	34	22.71	339.71	2020/21
21	Mekele Industrial Park	18.26	50.01	802.70	2020/21
22	Kunzila Junction-Filon Holiculture	23.5	23.60	386.96	2020/21

No	Link name	Length	Unit Cost	Project Cost (in million)	Plan Year
23	Ayekel-Zufen KM 69 Cont.2	69	28.32	470.98	2020/21
24	Asossa-Daleti Cont. 1	36	6.32	107.00	2020/21
25	Babile-Fik(KM 33-KM 66 Cont.2)	30	15.04	256.59	2020/21
26	Hawassa Town-Hawassa Air Port	34	17.41	319.03	2020/21
27	Keli- Tulu Kapi	19.5	17.41	339.58	2020/21
28	Neblet-Filafil	57.02	17.61	348.74	2020/21
29	Adaba-Angetu	101.9	12.26	243.44	2020/21
30	Babile-Fik(Babile-KM 33 Cont.1)	36	11.35	230.23	2020/21
31	Bole Junction-Waterdino Holitculture	30	11.99	243.96	2020/21
32	Gelemso-Micheta	45.9	21.19	451.62	2020/21
33	Arbarakete-Gelemso	57.5	17.60	386.71	2020/21
34	Sawula-Koka cont.2(Lot II)	29.77	7.14	162.08	2020/21
35	Cherti-Hager Mekor	90	14.45	346.76	2020/21
36	Dulcha-Awash Arba	53.13	13.05	314.19	2020/21
37	Adi remet-Adihirda-Bekel	70	14.65	359.53	2020/21
38	Belas River-Mekena birhan	39	26.13	650.56	2020/21
39	Semema-Andeabaguna	83	21.06	553.04	2020/21
40	Dengoro-Kingi-Mekebilla	30	13.87	370.31	2020/21
41	Sodo-Tercha Lot 2 (Omo-Tercha)	83.4	20.08	539.05	2020/21
42	Abobo-KM 76	76	12.63	346.28	2020/21
43	Fiyelwuha-Tekeze River Bridge	39.5	29.53	865.13	2020/21
44	Adiabun-Rama	47	17.18	532.09	2020/21
45	Debre Birhan-Ankober	42	25.80	831.00	2020/21

No	Link name	Length	Unit Cost	Project Cost (in million)	Plan Year
46	Mota-Jara Gedo	63	25.69	854.30	2020/21
47	Degolo-Kelela	71.58	18.16	627.77	2020/21
48	Pingnang-Jikawo-Lare	35	40.59	1,420.58	2020/21
49	Wukro-Neblet	79.62	15.71	551.18	2020/21
50	Abi adi-Semema	87	20.09	706.23	2020/21
51	Dibu River-Bedayi-Chalelek	44.4	16.34	579.03	2020/21
52	Kelela-Akesta	40	14.21	515.49	2020/21
53	Afidera-Airbeti Junction-KM 48 Cont.1	55	24.84	903.68	2020/21
54	Omo-Turmi	63	12.62	507.70	2020/21
55	Fik-Hemero	81	10.11	407.54	2020/21
56	Adi Remet-Kulita-Adigoshu	69	13.81	577.32	2020/21
58	Adura Akobo-Adura Burbe	125.54	6.56	292.24	2020/21
59	Ajire-Keraker-Ketema Nigus Cont.2	57	20.33	930.18	2020/21
60	Metema-Abirajira	117.3	13.20	620.39	2020/21
61	Mekele-Degolat-KM 70	94	16.96	804.83	2020/21
62	Abilo-Durmi	69	12.95	618.71	2020/21
63	KM 69-Anegereb Cont.2	71.15	27.48	1,320.30	2020/21
64	Aseyita-Afambo-Djibouti Border	49	30.99	1,511.25	2020/21
65	MenaBegna-Fincha-Shambo	65.51	15.25	775.41	2020/21
66	Pawi Junction-KM 69Lot I	69	12.87	658.23	2020/21
67	Jigjiga-Fafem-Gelalshe-Degehamedo Lot	52	14.78	763.82	2020/21
68	Robe-Ali-Agarfa	54	39.87	2,062.55	2020/21
69	Bishoftu-Chafedonsa-Sendafa	52	17.59	914.85	2020/21
70	Abomsa-Aseko-Debu River	61	16.26	846.22	2020/21

No	Link name	Length	Unit Cost	Project Cost (in million)	Plan Year
71	Daye-Chiri-Nensebo	73.37	22.93	1,270.02	2020/21
72	KM 76-Meti Lot II	82	15.83	881.08	2020/21
73	Wukro-Atsibi-Konba	63	27.71	1,547.04	2020/21
74	Nekemte-Soge-Kamashi-Koncho Lot II (KM 105-KM 108)	56	18.00	1,008.00	2020/21
75	Alemketema-Degolo	85	15.07	884.18	2020/21
76	KM 48- Artale Junction-Ahimedela Cont.2	79	16.00	946.08	2020/21
77	Construction of Kombolcha Industrial Parking Road	71	6.75	400.79	2020/21
78	Gambella-Aliya	77.7	13.25	804.71	2020/21
79	Jihur-Deneba-Lemi Junction-Guguftu-Werailu-Degolo(Lot 1&2)	74	18.85	1,222.36	2020/21
80	Robe-Seru Lot II	68	14.61	976.53	2020/21
81	Omorate-Omo-Kangaken	74	13.05	888.75	2020/21
82	Atat Junction-Gunchire-Kose-Geja-Lera	81	14.39	1,000.43	2020/21
83	Gimba-Tenta	70	20.00	1,400.00	2020/21
84	Pawe Junction-Rehennassiance Dam Lot 2	70	12.68	887.76	2020/21
85	Mesel-Kuru-Teru Lot II	72	20.85	1,491.86	2020/21
86	Edo-Sorofta-Warka	73	23.11	1,660.53	2020/21
87	Morka-Gircha-Chench	73	26.95	1,949.17	2020/21
88	Adiarkey-Telmet	76	26.07	1,900.56	2020/21
89	Tenta Junction-Wegeltena-Kurba	79	23.72	1,764.87	2020/21
90	Rama-Chila-Wukro Marey	77	25.00	1,892.00	2020/21
91	Shishinda-Tepi	79	19.70	1,515.79	2020/21
92	Debre Markos-Elias-Kuchi	81	16.04	1,257.77	2020/21
93	Gambella-Abobo-Pugnido	103.1	12.72	1,026.74	2020/21

No	Link name	Length	Unit Cost	Project Cost (in million)	Plan Year
94	Mesel-Koru-Teru	84	18.29	1,534.59	2020/21
95	Fissahagenet-Soyoma-KM 90 (Fissahagenet-Kele-	92	17.28	1,459.93	2020/21
96	Rama-Chila-Wukro-Maray	91	16.26	1,389.30	2020/21
97	Nekemte-Soge-Kamashi-Koncho Lot III (KM 160-	86	15.44	1,327.45	2020/21
98	Bilalo-Kersa-Arsi Negele	93	16.83	1,565.36	2020/21
99	Hager Mekor - Gorobebeksa(Kundi)	102	15.28	1,454.27	2020/21
100	KM 100-Gog-Dima	100	13.11	1,310.92	2020/21
101	Yaso-Galasa-Dibate Lot I(Yaso-KM 100)	100	26.66	2,666.07	2020/21
102	Jigjiga-Tuli-Lowanda-Lulahedi-Samkab-Heremukal	103	15.06	1,521.23	2020/21
103	Termaber-Molale-Mehal Meda	119	16.02	1,797.92	2020/21
104	Hemero-Imi	136	11.35	1,446.17	2020/21
105	Kebirdehar-Warder	139	13.05	1,811.12	2020/21
1	Chereti Hagermekor Kundi Gordamole, Lot 3: Kundi	Somali	28.00	2,324.00	2020/21
2	Debre Markos – Debre Eliyas – Kuch (161km) and Eliya –	Amhara/Gambella	28.00	4,508.00	2020/21
3	Ketema Nigus – Adi Selam – Maygeba	Tigray	28.00	2,800.00	2020/21
4	Dermi-Kenticha-Shakiso	Oromia	28.00	2,016.00	2020/21
5	Hawella Tula Yaye Werache	SNNPRS	28.00	2,520.00	2020/21
6	Werabe-Bole-Areqt	SNNPRS	28.00	1,400.00	2020/21
7	Humbo Tebel - Abaya	SNNPRS	28.00	733.60	2020/21
8	Dila - Bule - Harowachu	SNNPRS	28.00	1,960.00	2020/21
9	Halaba-Angecha - Wato & Damboya - Durame Spur	SNNPRS	28.00	1,736.00	2020/21

No	Link name	Length	Unit Cost	Project Cost (in million)	Plan Year
10	Bojober - Worabe	SNNPRS	28.00	1,106.00	2020/21
11	Tercha Woldehana - Omonada (2 lots: Tercha -	SNNPRS	28.00	2,520.00	2020/21
12	Tercha Woldehana - Omonada (2 lots: Worebo -		28.00	1,876.00	2020/21
13	Koshe - Mito - Worabe& Kutre- Bilalo	SNNPRS	28.00	868.00	2020/21
14	Ginchi – Shikute – Chulute (Lot II Shikute DBB –	Oromia	28.00	1,848.00	2020/21
15	Woldehane-Durgi	SNNPRS	28.00	1,484.00	2020/21
16	Arsi Robe-Gobensa-Wabe river	Oromia	28.00	2,716.00	2020/21
17	Daye-Girji-Melka Desta and Meleya-Mejo Spur Road	SNNPRS	28.00	1,736.00	2020/21
18	Bonosha-Achamo	SNNPRS	28.00	560.00	2020/21
19	Supe-Darmu-Lalokile	Oromia	28.00	3,052.00	2020/21
20	Bulehora-Shakiso-Kibremengst lot 1:	Oromia	28.00	3,920.00	2020/21
21	Tongo- Asosa	Benshangul Gumuz	28.00	1,988.00	2020/21
22	Metu by Pass	Oromia	28.00	140.00	2020/21
23	Segeg Gerbo Denen	Somali	28.00	4,984.00	2020/21
24	Diredawa Bypass	Diredawa	30.00	510.00	2020/21
25	Dubti-Biyokbob, Contract 1 (Dubti -km72) completed,	Afar	30.00	2,250.00	2020/21
26	Gode-Kelafo Firfer, Lot 2: Kelafo Firfir	Somali	30.00	3,750.00	2020/21
27	Hayik-Bistima-Chifra	Amhara and Afar	30.00	2,250.00	2020/21

No	Link name	Length	Unit Cost	Project Cost (in million)	Plan Year
28	Gendesheno – Ejere – GundoMeskel	Oromia	30.00	2,670.00	2020/21
29	Rama - Gerahu Senay	Tigray	30.00	2,400.00	2020/21
30	Access to Debre Birhan Industrial Park	Amhara	30.00	180.00	2020/21
31	Access to Adama Industrial Park	Oromia	30.00	90.00	2020/21
32	Access to Arerti Industrial Park	Amhara	30.00	1,020.00	2020/21
33	Debretabor-Guna and Gishen Junction - km 14	Amhara	30.00	150.00	2020/21
34	Zalambesa-Alitela-Marwa-Edegahamus	Tigray	30.00	2,700.00	2020/21
35	Adi Arkay – Tselemt	Amhara	30.00	1,920.00	2020/21
36	Della – Chillena- Negesqe – Merewa – Alamata	Tigray	30.00	3,750.00	2020/21
37	Rama – Chilla – Adeadero	Tigray	30.00	1,800.00	2020/21
38	Gelago – Tewodros Ketema	Amhara	30.00	1,824.00	2020/21
39	Mehalmeda – GisheRabel – Mekoy – MilaMille	Amhara	30.00	3,900.00	2020/21
40	Dangla-Jawi		30.00	2,160.00	2020/21
41	Bishoftu Interchange	Oromia	30.00	-	2020/21
42	Iliya Makuye	Gambela	30.00	2,700.00	2020/21
43	Itang-Wankey-Mera	Gambela	30.00	2,400.00	2020/21
44	Nekemte-Soge-Kamash-Koncho-Lot 1: Km 0-km 105	Beneshangul and Oromia	30.00	1,650.00	2020/21
45	Seka -Atnag- Guder	Oromia	30.00	5,580.00	2020/21
46	Gida-Yaso	Benishangul Gumuz	30.00	2,062.12	2020/21

No	Link name	Length	Unit Cost	Project Cost (in million)	Plan Year
47	Adola-Melkadesta-Harnfema	Oromia	30.00	2,172.64	2020/21
48	Maksegnit-Arbaya Belessa	Amhara	30.00	2,421.24	2020/21
49	Adigudom - Gijet - Saba Tegu	Tigray	30.00	2,138.06	2020/21
50	Hoja- Dure-Goro Kelate	Oromia	30.00	2,019.47	2020/21
51	Simada-Saynet-Busso	Amhara	30.00	4,090.05	2020/21
52	Bure - Gomer	Amhara	30.00	1,257.07	2020/21
53	Chencha-Chano	SNNP	30.00	488.00	2020/21
54	Shirishir-Wubhamer spur road	SNNP	30.00	348.77	2020/21
55	Kofle-Qore-Shire	Oromia	30.00	908.76	2020/21
56	Birki - Haikemesehal- Atsbi Jun	Tigray	30.00	596.22	2020/21
57	Dobi-Elidar-Beliho	Afar	30.00	545.67	2020/21
58	Yaso-Gelesa-Dibate	Beneshangul	30.00	5,250.00	2020/21
59	Gog-Jor-Akobo	Gambela	30.00	4,170.00	2020/21
60	Guliso-Cheliya-Dila-Kendila-Begi	Oromia	30.00	3,045.90	2020/21
61	Metema-Abrihijira-Maserodenb-Sanja:Lot 2 km	Amhara	30.00	1,440.00	2020/21
62	Gibe River-Omo nada	SNNP	30.00	1,920.00	2020/21
63	Filtu-Moyale	Somale	30.00	7,500.00	2020/21
64	Juhur-Zemero-Guguftu	Amhara	30.00	4,800.00	2020/21

No	Link name	Length	Unit Cost	Project Cost (in million)	Plan Year
65	Raitu-Shakisa-Elkere	Oromia	30.00	4,202.42	2023/24
66	Sire(Moto)-Mote-Nunu-Arjo	Oromia	30.00	3,360.97	2023/24
67	Dama(Anfele)-Bore	Oromia	30.00	744.27	2023/24
68	Dogo-Kofele-Repi-- DedoYirgacheffe	Oromia	30.00	1,132.05	2023/24
69	Chulute-Debre Markos	Amhara	30.00	2,816.22	2023/24
70	Tuludimtu-chefedonsa- shenkora-Arerti	Oromia	30.00	2,448.78	2023/24
71	Kerseber - Sobiyan	Tigray	30.00	604.27	2023/24
72	Deramalo-otolo	SNNP	30.00	1,292.74	2023/24
73	Shilabo-Ferfer	Somali	30.00	3,806.41	2023/24
74	Adulala Jun- Yerer Mountain	Oromia	30.00	361.52	2023/24
75	Muti - Adaadi Mariam	Oromia	30.00	374.64	2023/24
76	Tenta - Mekdela Amba	Amhara	30.00	405.66	2023/24
1	Jara-Ginir	Oromia	31.00	1,922.00	2023/24
2	Hagayu-Sigmo-Saylem- Leqa-Becho-Metu	Oromia	31.00	5,270.00	2023/24
3	Halaba-Siraro-Shamena	Oromia	31.00	1,891.00	2023/24
4	Gerehusenay-Ahifermo	Tigray	31.00	1,240.00	2023/24
5	Sekota-Amdework-Tekeze- Ebnet-Adiszemen	Amhara	31.00	5,270.00	2023/24
6	Bati-Medina-Harewa-Bora- Kemise	Amhara	31.00	3,410.00	2023/24

No	Link name	Length	Unit Cost	Project Cost (in million)	Plan Year
7	Kesa-Gimjabet-Azena-Ambela	Amhara	31.00	1,271.00	2023/24
8	Hosaina-Jajura-Gimbichu-Jacho	SNNP	31.00	1,550.00	2023/24
9	Arjo gudetu-Sego	B/Gumuz	31.00	3,162.00	2023/24
10	Mankush-Almehali-Omedila	B/Gumuz	31.00	1,612.00	2023/24
11	Gelago-Tewodrosketema-Guba Lot2:-km 90-Guba	B/Gumuz	31.00	2,542.00	2023/24
12	Ngingang-Gir-Towu	Gambella	31.00	2,201.00	2023/24
13	Asayita –Harisa/Arisa	Afar	31.00	1,984.00	2023/24
14	Pingnang-Jiko-Dobrar-Rek	Gambella	31.00	4,030.00	2023/24
15	Tolta - Gelila - Laska & Shirishir-Wubhamer spur	SNNPRS	31.00	3,875.00	2023/24
16	Harowachu - Shakiso	SNNPRS	31.00	1,767.00	2023/24
17	Delbo Sebro-Jara-Shekhusen		31.00	2,418.00	2023/24
18	Jikawo-Toha (Nignang-Ongoing)	Gambella	31.00	2,945.00	2023/24
19	Dima-Jeba-Kibish-f4f6	Oromia & SNNRP	31.00	3,007.00	2023/24
				-	
1	Silkamaba-Benja-Mote	76.7	26.60	2,040.50	2023/24
2	TuluBollo-Mojo(Lot 2, Km 46-Km 103)	57.8	30.60	1,767.53	2023/24
3	TuluBollo-Mojo (Lot 1, Km 0-Km 46)	45.7	33.26	1,519.61	2023/24
4	Burka-Midaga-Tolla-Harar Road Project	184.1	30.60	5,633.15	2023/24
5	Shinshicho-Shone -Hawassa	53.4	26.60	1,421.87	2023/24

No	Link name	Length	Unit Cost	Project Cost (in million)	Plan Year
6	Bahirdar-Kunzila	56.5	26.60	1,504.34	2023/24
7	Toltawond-Abot-Jenya	171.7	30.60	5,253.01	2023/24
8	Harshin- Haskul-Aroresa-K.Dehar,Lot2 Km193-Km368	175.0	30.60	5,352.94	2023/24
9	Harshin- Haskul-Aroresa-K.Dehar Lot1-Km 0-Km193	193.2	30.60	5,910.60	2023/24
10	Metagefersa-Wachile-Dakwta-Erer	165.4	26.60	4,401.13	2023/24
11	Ginir-Fiq, lot2, Km115-Km213	98.6	33.26	3,280.16	2023/24
12	Ginir-Fiq, Lot1, Km0-Km115	114.5	33.26	3,808.41	2023/24
13	Duruksi-Warder-Dabre Wein, Lot2 Km126-Km343	166.4	33.26	5,533.36	2023/24
14	Duruksi-Warder-Dabre Wein, Lot1 Km0-Km126	176.9	30.60	5,412.57	2023/24
15	Bachuma-Oudadishi-Selamber-Tebela	154.5	30.60	4,728.35	2023/24
16	Bachuma-Oudadishi-Selamber-Tebela Lot 1,Km	81.3	30.60	2,485.88	2023/24
17	Bule Hora-Aflala-Meta Gefersa	128.3	30.60	3,924.65	2023/24
18	Aje-Alage-Koshe-Mito Road	54.7	26.60	1,455.56	2023/24
19	Kersa-Shire	38.1	30.60	1,164.55	2023/24
20	Gilgelgibe-Tirokeneni-Tole Jima	84.2	33.26	2,799.45	2023/24
21	Midaga-Obole-Mareg Dugheleh Lot 3 Km 152-Km	84.0	30.60	2,569.99	2023/24
22	Midaga-Obole-Mareg Dugheleh Lot 1, Km 0-Km	78.5	30.60	2,401.31	2023/24
23	Midaga-Obole-Mareg Dugheleh Lot 2, Km 78.5-Km	74.6	30.60	2,282.16	2023/24
24	Debre Eliyas jun-Finoteselam-G/Abay-Fagita-	159.0	30.60	4,864.09	2023/24

No	Link name	Length	Unit Cost	Project Cost (in million)	Plan Year
25	Adami Tulu- Assela	55.1	30.60	1,686.72	2023/24
26	Angetu-Mena	25.3	30.60	775.53	2023/24
27	Gode - Shilabo-Biyo Ado, Lot1, Km 0-Km 143	142.6	30.60	4,364.08	2023/24
28	Gode - Shilabo-Biyo Ado, Lot2, Km 143-Km 235	93.3	30.60	2,854.77	2023/24
29	Warder - Agere Weyin - Goldgob, lot1,Km0-km90	89.7	30.60	2,744.29	2023/24
30	Warder - Agere Weyin - Goldgob, lot2,Km90-Km188	98.5	33.26	3,276.51	2023/24
31	Assasa-Agarfa	79.5	26.60	2,114.10	2023/24
32	Chire- Adola	111.1	26.60	2,956.96	2024/25
33	Remti- Burka	182.6	30.60	5,585.33	2024/25
34	Awash-Fenatle-Deweile Ju- Km149-Km249	100.0	26.60	2,660.44	2024/25
35	Awash-Fenatle-Deweile Ju- Km 0-Km 149	149.6	26.60	3,980.99	2024/25
36	Awash-Fenatle-Deweile Ju Km 249-349	94.3	26.60	2,508.97	2024/25
37	Deder-Tirtira	76.2	33.26	2,533.96	2024/25
38	Adet-Fagita-Addiskidame- Pawe	138.7	30.60	4,242.72	2024/25
39	Jinka-Washawuha- Washmeda	115.9	26.60	3,083.34	2024/25
40	Goha Tsion-Kachise	65.7	33.26	2,184.83	2024/25
41	Arbegona-Yirgalem	52.7	26.60	1,402.18	2024/25
42	Mechara-Fik-Deghamedo- Degehabur, Lot2 Km146-Km	110.1	30.60	3,369.05	2024/25
43	Mechara-Fik-Deghamedo- Degehabur, Lot3 km 256-km	154.1	30.60	4,714.27	2024/25

No	Link name	Length	Unit Cost	Project Cost (in million)	Plan Year
44	Mechara -Fik-Deghamedo-Degehabur, Lot1 km-0-	146.3	30.60	4,476.71	2024/25
45	Meki-Iteya	47.6	33.26	1,583.52	2024/25
46	Aje-Loke-Shasha-Tebela,Lot1-Km54	54.3	26.60	1,443.60	2024/25
47	Aje-Loke-Shasha-Tebela,Lot2-Km107	53.1	26.60	1,413.29	2024/25
48	Tula-Hantate-Shigasha-Tebela	70.4	30.60	2,153.51	2024/25
49	Delo Mena-Kundi	120.5	30.60	3,687.04	2024/25
50	Nonsebo-Angetu	46.4	26.60	1,234.74	2024/25
51	Meyu-Goda-Ritu, lot-2, km110-Km207	96.9	30.60	2,963.16	2024/25
52	Meyu-Goda-Ritu, Lot1, Km0-Km110	110.8	30.60	3,388.77	2024/25
53	Tulema-Areka	61.8	30.60	1,889.62	2024/25
54	Kofele-Arbegona-Daye	23.1	33.26	766.77	2024/25
55	Segeg-Ali-Dihun-Imi JCT,Lot2, km102-km200	98.6	30.60	3,016.37	2024/25
56	Segeg-Ali-Dihun-Imi JCT, Lot1, km0-Km102	102.8	30.60	3,144.64	2024/25
57	Bohotle-Goldgob	177.7	30.60	5,437.43	2024/25
58	Sentu-Yanfa-Gechi	80.0	33.26	2,660.56	2024/25
59	Bedele-Bube	159.5	26.60	4,242.72	2024/25
60	Gobesa -Bekoji-Kersa	73.2	26.60	1,947.51	2024/25
61	Hambiso-G/Meskel-Weleka-Wegedi-Key Mebrat	176.0	33.26	5,852.09	2024/25
62	Misrak Geshamo-Boh	171.0	30.60	5,231.60	2024/25

No	Link name	Length	Unit Cost	Project Cost (in million)	Plan Year
63	Shekuhussien-Beltu-Ramsi	111.2	30.60	3,402.55	2024/25
64	Togowuchale-Harshin	55.2	30.60	1,689.75	2024/25
65	Afdera Jun-Mengaga-Endhura-Elidar	179.4	30.60	5,487.51	2024/25
66	Sofomr-Mio-Gorobebeksa	86.0	26.60	2,287.37	2024/25
67	AMBO-LEMLEM BERHA	117.6	30.60	3,598.90	2024/25
68	Shinle-Harewe	18.7	30.60	573.07	2024/25
69	Derba-Inchni-Gojo	73.9	30.60	2,262.49	2024/25
70	Arerti-Melka Jilo-Metehara Jun	38.2	30.60	1,167.22	2024/25
71	Ginir-Dihun-Shekosh-Wareder Lot 3,Km368-Km	165.1	30.60	5,051.33	2024/25
72	Ginir-Dihun-Shekosh-Wareder Lot 1, Km 0-Km 182	182.7	30.60	5,588.18	2024/25
73	Ginir-Dihun-Shekosh-Wareder Lot 2, Km 182-Km	185.4	30.60	5,671.09	2024/25
74	Girawa - Husse-Waldiya-Meyu	109.8	30.60	3,360.72	2024/25
75	FugnaBira-Ejersa-Chinhaksen-Jigjiga	68.1	30.60	2,084.55	2024/25
76	Aware-Misrak Gashamo	136.3	26.60	3,625.48	2024/25
77	Nejo-Yaso-Gelasa-Dibate jun	37.8	26.60	1,005.32	2024/25
78	MeliyuBele-Filtu, Lot1,Km0-km149 (Genale)	147.9	30.60	4,524.74	2024/25
79	MeliyuBele-Filtu, Lot2,Km149-km234	86.4	33.26	2,873.67	2024/25
80	Tewedros Ketema-M Siliase-Aykel	139.4	26.60	3,708.12	2024/25
81	Yabelo-Jenya	92.6	26.60	2,463.66	2024/25

No	Link name	Length	Unit Cost	Project Cost (in million)	Plan Year
82	Harbuchulele-Inge-Welkite	62.0	26.60	1,648.37	2024/25
83	AGAMSA-ABAY RIVER-ROBE GEBEYA Lot 1, Km 0-	80.0	30.60	2,447.53	2024/25
84	AGAMSA-ABAY RIVER-ROBE GEBEYA Lot 2, Km	59.6	30.60	1,824.49	2024/25
85	Guliso-Nejo	39.6	30.60	1,212.09	2024/25
86	Bedelle -Koma	74.0	33.26	2,461.44	2024/25
87	Bati - Chifra	45.0	26.60	1,198.19	2024/25
88	Metehara - Mechara	64.4	26.60	1,713.32	2024/25
89	Atanago-Koma-Mote	74.2	30.60	2,268.93	2024/25
90	Maji-Tum-Tulgit	39.7	26.60	1,056.92	2024/25
91	Moyale-Jenya	181.9	30.60	5,566.43	2024/25
92	Chila - Wukero Maray	21.8	30.60	668.30	2024/25
93	Gewane-Afdem-Harmukale, Lot1, km0-Km103	103.1	30.60	3,153.27	2027/28
94	Gewane-Afdem-Harmukale,, Lot2, km103-Km201	92.8	30.60	2,838.04	2027/28
95	Welenchiti -Sodere Road Junction	24.3	30.60	744.42	2027/28
96	Arerti-Welenchiti	38.5	30.60	1,177.67	2027/28
97	Teltele-Meramaro-Abot	52.0	26.60	1,384.05	2027/28
98	Awash Arba-MIWerer-Bora, Lot2, Km 62-Km 180	118.0	26.60	3,140.39	2027/28
99	Awash Arba-MIWerer-Bora Lot1, Km 0-km 62	61.9	26.60	1,645.77	2027/28
100	Axum - Adet	29.8	30.60	912.22	2027/28

No	Link name	Length	Unit Cost	Project Cost (in million)	Plan Year
101	Mengshi-Dima	66.9	26.60	1,780.82	2027/28
102	Sire-Adugna-Bakojima-Gutin	74.5	26.60	1,981.33	2027/28
103	Maganan-Maserodenb-Aberahajira Road	54.9	30.60	1,679.46	2027/28
104	Muger-Gibre Guracha	46.4	26.60	1,235.13	2027/28
105	Arbaminch -Nechsar park - Kele	83.5	26.60	2,221.60	2027/28
106	Edaga Hamus--Sawni-Adewuka-Beda	94.6	30.60	2,893.45	2027/28
107	Waka- Morka	87.8	26.60	2,335.26	2027/28
108	Filtu - Al Abdile - Manguada	138.1	26.60	3,674.92	2027/28
109	Yeberet-Arb Gebeya	32.8	26.60	873.52	2027/28
110	Chitu-Gindo-Darge	54.8	26.60	1,457.18	2027/28
111	Magna-Semare-Seru	75.6	26.60	2,010.60	2027/28
112	Maganana-Mahbireselassie-Serba Delgi	119.1	30.60	3,644.96	2027/28
113	Gewane Jun-Bike	83.1	26.60	2,211.84	2027/28
114	Hargele - Imi Km0-Km115	116.0	26.60	3,086.64	2027/28
115	Hargele - Imi Km115-Km231	115.4	26.60	3,069.08	2027/28
116	Angetu-Bedere	74.0	30.60	2,262.63	2027/28
	Jemu - Barda-Kitie	77.6	30.60	2,375.13	2027/28
115	Bordede - Gelemeso	44.7	30.60	1,367.77	2027/28
116	Jawi-Kunzla	82.6	26.60	2,197.79	2027/28

No	Link name	Length	Unit Cost	Project Cost (in million)	Plan Year
117	Adigosh-Birkutan-Sittona	36.7	26.60	975.07	2027/28
118	Adi Mella-Debre Genet-Filafil	87.9	26.60	2,338.14	2027/28
119	Amba Gyiorgis-Arba Tseguar-Abi Adi Jun. k118-	112.4	30.60	3,438.10	2027/28
120	Amba Gyiorgis-ArbaTseguar-Abi Adi Jun. Km0-Km118	118.7	30.60	3,631.91	2027/28
121	ARSI NEGELE-KORE-MERARO	67.5	30.60	2,063.63	2027/28
122	Tulgiti-Tirmatid-South Sudan Border	62.1	30.60	1,901.02	2027/28
123	Bonga-Duba Yaneba-Dime/Laska	141.9	30.60	4,341.55	2027/28
124	Mechara-Tulema-Bure	73.7	30.60	2,255.11	2027/28
	Mayichew-Bora-Sekota	68.5	30.60	2,095.66	2027/28
125	Behir-Shigili-Maykadera	36.0	30.60	1,100.39	2027/28
126	Gidole - Beneta-Kako	84.2	30.60	2,576.21	2027/28
127	Dessie Jun-Ambamariam	43.6	30.60	1,333.16	2027/28
128	Sirtuager-Alemgebeya-Ankober	46.7	30.60	1,428.84	2027/28
129	Sherkole-Kurmuk	64.9	30.60	1,986.27	2027/28
	Diksis-Kulla-Derba-Halila-Chole	68.0	30.60	2,081.48	2027/28
130	Lemlem Bereha-Elias Jun	38.5	30.60	1,178.77	2027/28
131	Daleti-Knocho-Wembera	93.4	30.60	2,857.18	2027/28
132	Sebasebat-Chewaka-Ephrem	67.5	30.60	2,066.56	2027/28
133	Imi Jun- El Bahid-Bur Huso, lot1, Km0-Km98	98.3	30.60	3,008.81	2027/28

No	Link name	Length	Unit Cost	Project Cost (in million)	Plan Year
134	Imi Jun- El Bahid-Bur Huso, lot2, Km98-Km213	115.5	30.60	3,533.57	2027/28
135	Dipa-Ciam	34.0	30.60	1,040.70	2027/28
136	Bullen - Gublak	70.4	30.60	2,152.99	2027/28
137	Smada-Gundeweyn	71.7	30.60	2,193.04	2027/28
138	Ajbar-Yeberet-Shola-Kon	97.5	30.60	2,983.14	2027/28
139	Harosebu-Gna-Kara-Melkaebitcha-Babo	70.6	30.60	2,159.25	2027/28
140	Mehoney-Yalo-Degadigu	93.3	30.60	2,853.52	2027/28
141	Bure-Girar	91.0	30.60	2,784.72	2027/28
142	Sembo-Muketure	59.0	30.60	1,804.95	2027/28
143	Belesa-Arba Tseguar jun	50.1	30.60	1,531.87	2027/28
144	Deghabur-Awabre	78.8	30.60	2,410.45	2027/28
145	Dilybza-Arba Tseguar	39.0	30.60	1,194.34	2027/28
146	Sirtuager-Awasharba	60.1	30.60	1,837.77	2027/28
147	Shiraro-Lama	37.2	30.60	1,137.58	2027/28
148	Bele Arsi - Siba	26.8	30.60	820.60	2027/28
149	Ameya-Koisha-Salayesh-Laha	77.4	30.60	2,367.40	2027/28
150	Dodola-Bensaware	71.0	30.60	2,171.34	2027/28
151	Ayema - Kunzila-Gelago Junc	49.8	30.60	1,523.55	2027/28
152	Waja-Yalo	37.6	30.60	1,150.36	2027/28

No	Link name	Length	Unit Cost	Project Cost (in million)	Plan Year
153	Filakit-Arbgebaya-Simada	93.8	30.60	2,868.75	2027/28
154	Gode-Beredele-Bug Bere	135.9	30.60	4,158.04	2027/28
155	Ambamariam-Yeberet	60.2	30.60	1,841.34	2027/28
156	Hateto-Wayu	44.1	30.60	1,350.53	2027/28
157	Dig Degu - Hamaye Kem - Kunaba Lot 1, Km 0- Km 54	54.0	30.60	1,653.62	2027/28
158	Dig Degu - Hamaye Kem - Kunaba Lot 2, Km 54-	89.5	30.60	2,739.59	2027/28
159	Mendi-Wama-Shemeltok	35.2	30.60	1,077.39	2027/28
160	Mekanbirahan-Arbatsiguar JCT	60.0	30.60	1,835.61	2027/28
161	Maytemen-Ketema Nigus	35.0	30.60	1,072.28	2027/28
162	Tulusa - Dejach Meda	28.7	30.60	876.67	2027/28
163	Atsbi - Konaba-Berhale	20.5	30.60	627.91	2027/28
164	Maytsebri-Mayhanse-Dedebit Jun	76.2	30.60	2,330.32	2027/28

11.7 List of Urban Centers with More than 10,000 Population and Accessibility

Towns more than 10,000 population in Afar Region

List of Town which has more than 10,000 Total Population in Afar Region								
No	Region	Zone	Woreda	Town Name	Urban Male	Urban Female	Total	Accessed by Federal Roads or Not
1	Afar	Zone 3	Gewane	Gewane	5983	5198	11181	Yes
2	Afar	Zone 2	Berehale	Berehale	6824	4604	11428	Yes
3	Afar	Zone 1	Chefera	Chefera	9434	7638	17072	Yes
4	Afar	Zone 1	Elidar	Manda	10239	7965	18204	Yes
5	Afar	Zone 2	Abala	Abala	9942	9280	19222	Yes
6	Afar	Zone 1	Mile	Mile	14034	12495	26529	Yes
7	Afar	Zone 1	Asayta	Asayta	15674	14289	29963	Yes
8	Afar	Zone 3	Awash Fentale	Sabure	16189	15248	31437	No
9	Afar	Zone 3	Amibara	Melka Werer	29327	23289	52616	Yes
10	Afar	Zone 1	Dubti	Dubti	32840	28681	61521	Yes

Source: Central Statistics Agency (CSA), Projection of 2017/18

Towns more than 10,000 population in Amhara Region

List of Town which has more than 10,000 Total Population in Amhara Region								
NO	Region	Zone	Woreda	Towns	Urban Male	Urban Female	Total	Accessed by Federal Roads or Not
1	Amhara	South Wolo	Ambasel	Wuchale	5115	5136	10251	Yes
2	Amhara	Oromiya	Artuma Fursi	Chefa Robit	5300	5061	10361	Yes
3	Amhara	South Wolo	Jama	Degolu	5093	5436	10529	Yes
4	Amhara	East Gojjam	Bibugn	Digotsiyon	5579	5306	10885	Yes
5	Amhara	East Gojjam	Baso Liben	Yejube	5568	5651	11219	No
6	Amhara	North Shewa	Menze Mama Mider	Molale	5689	5663	11352	Yes
7	Amhara	West Gojjam	Dega Damot	Feres Bet	6287	5416	11703	Yes
8	Amhara	South Wolo	Werebabo	Bestima	5914	5811	11725	No
9	Amhara	West Gojjam	Sekela	Gishe Abay	6108	5718	11826	No
10	Amhara	South Gonder	Farta	Debre Tabor	6197	5642	11839	Yes
11	Amhara	North Shewa	Mida Oromo	Rema	6117	6166	12283	No

List of Town which has more than 10,000 Total Population in Amhara Region

NO	Region	Zone	Woreda	Towns	Urban Male	Urban Female	Total	Accessed by Federal Roads or Not
12	Amhara	North Gondar	Takusa	Delgi	5887	6446	12333	Yes
13	Amhara	South Wolo	Legambo	Akesta	6551	6229	12780	Yes
14	Amhara	South Wolo	Kelala	Kelela	6753	6568	13321	Yes
15	Amhara	North Gondar	Merab Belesa	Aribaya	6634	6723	13357	No
16	Amhara	East Gojjam	Gonchasiso Enese	Gundeweyin	6891	6522	13413	Yes
17	Amhara	North Wollo	Gidan	Muja	6647	6803	13450	Yes
18	Amhara	Awi	Jawi	Dek/Fendika	6952	6519	13471	Yes
19	Amhara	North Wollo	Delanta Wereda	Wegel Tena	7035	6658	13693	Yes
20	Amhara	East Gojjam	Debere Elias	Eliyas	6922	6896	13818	Yes
21	Amhara	South Gonder	Tach Gayint	Arb Gebeya	6819	7114	13933	No
22	Amhara	East Gojjam	Dejen	Dejen	7500	7658	15158	Yes
23	Amhara	South Wolo	Debresina	Mekane Selam	8077	7131	15208	Yes
24	Amhara	East Gojjam	Machakel	Amanuel	7854	7372	15226	Yes
25	Amhara	Awi	Fagita Lekoma	Addis Kidam	7851	7676	15527	Yes
26	Amhara	South Wolo	Tenta	Tenta	7968	7688	15656	Yes
27	Amhara	North Shewa	Moret ena Jiru	Enewari	8059	7664	15723	Yes
28	Amhara	Awi	Guagusa Shekudad	Tilili	7971	7794	15765	Yes
29	Amhara	North Shewa	Tarma Ber	Mezezo	8747	9197	17944	Yes
30	Amhara	South Gonder	Simada	Wegada	9098	8867	17965	Yes
31	Amhara	North Gondar	Adiarikay	Adiarikay	8610	9472	18082	Yes
32	Amhara	West Gojjam	Wenberma	Shindi	9256	9230	18486	No
33	Amhara	North Shewa	Menz Gera Meder	Mehal Meda	9604	9661	19265	Yes
34	Amhara	South Wolo	Were Ilu	Were Ilu	10568	9396	19964	Yes
35	Amhara	North Gondar	Alefa	Gomenge	9422	10818	20240	No
36	Amhara	North Wollo	Meket	Filakit	10259	10220	20479	Yes
37	Amhara	West Gojjam	South Achefer	Durbete	10246	10276	20522	Yes
38	Amhara	East Gojjam	Awabel	Lumame	10559	10078	20637	Yes
39	Amhara	South Gonder	Ebinat	Ebinat	10017	10872	20889	Yes

List of Town which has more than 10,000 Total Population in Amhara Region

NO	Region	Zone	Woreda	Towns	Urban Male	Urban Female	Total	Accessed by Federal Roads or Not
40	Amhara	North Gondar	Tach Armacho	Sanja	10269	11068	21337	Yes
41	Amhara	North Shewa	Minjar Shenkora	Balchi	10840	10497	21337	Yes
42	Amhara	East Gojjam	Enebise Sar Midir	Mertulemariyam	10784	10587	21371	Yes
43	Amhara	North Gondar	Lay Armachew	Tikil Dingay	9823	11974	21797	Yes
44	Amhara	North Shewa	Antsokiya Gemza	Mekoye	11042	10832	21874	No
45	Amhara	West Gojjam	Jebitenan	Finote Selam	10998	10977	21975	Yes
46	Amhara	North Gondar	Misrak Belesa	Hamusit	11331	11421	22752	Yes
47	Amhara	North Shewa	Merhabete	Alem Ketema	11603	11261	22864	Yes
48	Amhara	East Gojjam	Enarj Enawuga	DebreWerk	11576	12148	23724	Yes
49	Amhara	South Gonder	Misrak Este	Este	12622	11636	24258	Yes
50	Amhara	South Wolo	Tehuledere	Hayik	13372	12357	25729	Yes
51	Amhara	North Gondar	Mlrab Armacho	Abreha Jara	14544	11815	26359	Yes
52	Amhara	North Shewa	Yifratana Gidim	Kara Kore	13878	12852	26730	Yes
53	Amhara	West Gojjam	North Achefer	Kunizla	13694	13471	27165	Yes
54	Amhara	North Gondar	Dabat	Dabat	12759	14751	27510	Yes
55	Amhara	Awi	Ankasha Guagusa	Gimja Bet	15194	13410	28604	No
56	Amhara	Oromiya	Bati	Bati	13936	15148	29084	Yes
57	Amhara	South Gonder	Dera	Hamusit	14301	14910	29211	Yes
58	Amhara	North Wollo	Lasta	Lalibela	14600	15635	30235	Yes
59	Amhara	North Shewa	Kewet	Shewa Robit	15971	14699	30670	Yes
60	Amhara	West Gojjam	Dembecha	Dembecha	16014	15229	31243	Yes
61	Amhara	North Gondar	Gondar Zuriya	Gondar	15557	16442	31999	Yes
62	Amhara	North Gondar	Wegera	Gedebgie	15143	17315	32458	Yes
63	Amhara	East Gojjam	Enemay	Bichena	16635	16266	32901	Yes
64	Amhara	West Gojjam	Yilmana Densa	Adet	17305	16140	33445	Yes
65	Amhara	Oromiya	Kemise Town	Kemise	17605	16282	33887	Yes
66	Amhara	South Wolo	Kalu	Kombolcha	17713	16839	34552	Yes
67	Amhara	North Gondar	Chilga	Sereaba	16875	19206	36081	Yes

List of Town which has more than 10,000 Total Population in Amhara Region

NO	Region	Zone	Woreda	Towns	Urban Male	Urban Female	Total	Accessed by Federal Roads or Not
68	Amhara	North Gondar	Debark	Debark	16954	19290	36244	Yes
69	Amhara	North Wollo	Habru	Mersa	19061	18598	37659	Yes
70	Amhara	South Gonder	Libokemkem	Adds Zemen	19706	18760	38466	Yes
71	Amhara	Wag Himra	Sekota Town	Sekota	19365	19572	38937	Yes
72	Amhara	Awi	Banja Shekudad	Enjibara	20215	18990	39205	Yes
73	Amhara	West Gojjam	Mecha	Merawi	20577	18995	39572	Yes
74	Amhara	South Gonder	Lay Gayint	Nefas Mewcha	19796	19978	39774	Yes
75	Amhara	North Gondar	Dembia	Chwahit	19304	21333	40637	Yes
76	Amhara	South Gonder	Fogera	Wereta	22218	21699	43917	Yes
77	Amhara	West Gojjam	Finote Selam Town	Finote Selam	23460	21755	45215	Yes
78	Amhara	West Gojjam	Bure	Bure	23264	22044	45308	Yes
79	Amhara	Awi	Dengila	Dengila	24093	22998	47091	Yes
80	Amhara	North Gondar	Metema	Metema Yohanis	27227	24613	51840	Yes
81	Amhara	East Gojjam	Huletej Enese	Mota	27783	25605	53388	Yes
82	Amhara	Awi	Guangua	Chagni	27670	27223	54893	Yes
83	Amhara	North Wollo	Kobo	Kobo	29361	28428	57789	Yes
84	Amhara	North Wollo	Guba Lafto/ Woldiya	Weldiya	41395	39089	80484	Yes
85	Amhara	South Gonder	Debretabor	Debre Tabor	49753	47220	96973	Yes
86	Amhara	South Wolo	Kombolcha Town	Kombolcha	51124	51120	102244	Yes
87	Amhara	East Gojjam	Debre Markos Town	Debre Markos	53851	55031	108882	Yes
88	Amhara	North Shewa	Basona Warena / Debre Birhan	Debre Birhan	56995	56698	113693	Yes
89	Amhara	South Wolo	Dese Town	Dessie	103429	105797	209226	Yes
90	Amhara	Bahir Dar Liyu	Bahir Dar Liyu	Bahirdar	156867	157130	313997	Yes
91	Amhara	North Gondar	Gondar Town	Gondar	176593	184007	360600	Yes

Towns more than 10,000 population in Benshangul Gumuz Region

List of Town which has more than 10,000 Total Population in Benishangul Gumuz Region								
No	Region	Zone	Woreda	Town	Urban Male	Urban Female	Total	Accessed by Federal Roads or Not
1	Benishangul Gumuz	Metekel	Wenbera	Wenbera	5678	6213	11891	Yes
2	Benishangul Gumuz	Kamashi	Kamashi	Kamashi	6716	6131	12847	Yes
3	Benishangul Gumuz	Metekel	Bulen	Bulen	7039	7142	14181	Yes
4	Benishangul Gumuz	Metekel	Dibate	Dibate	7872	8195	16067	Yes
5	Benishangul Gumuz	Metekel	Mandura	Gilgel Beles	8602	7721	16323	Yes
6	Benishangul Gumuz	Metekel	Dangur	Mambuk	8702	9434	18136	Yes
7	Benishangul Gumuz	Assosa	Bambasi	Bambasi	10142	9717	19859	Yes
8	Benishangul Gumuz	Pawe Special	Pawe Special	Pawe	10760	11103	21863	Yes
9	Benishangul Gumuz	Assosa	Assosa	Assosa	27019	25556	52575	Yes

Source: Central Statistics Agency (CSA), Projection of 2017/18

Towns more than 10,000 population in Gambella Region

List of Town which has more than 10,000 Total Population in Gambella Region								
NO	Region	Zone	Woreda	Towns	Urban Male	Urban Female	Total	Accessed by Federal Roads or Not
1	Gambella	Agnuwak Zone	Goge	Pegnudo	5231	5443	10674	Yes
2	Gambella	Etang Special Woreda	Etang	Etang	5737	5582	11319	Yes
3	Gambella	Nuer Zone	Lare	Kowerneng	6620	5816	12436	Yes
4	Gambella	Mezhenger	Godere	Meti	7048	6512	13560	No
5	Gambella	Agnuwak Zone	Gambella Town	Gambella	39108	34994	74102	Yes

Source: Central Statistics Agency (CSA), Projection of 2017/18

Towns more than 10,000 population in Oromia Region

List of Town which has more than 10,000 Total Population in Oromia Region								
No	Region	Zone	Woreda	Towns	Urban Male	Urban Female	Total	Accessed by Federal Roads or Not
1	Oromia	West Hararghe	Bedesa Town	Bedesa	15338	14002	29340	Yes
2	Oromia	Arsi	Tena	Ticho	4917	5176	10093	No
3	Oromia	South West Shoa	Ameya	Gindo	5051	5047	10098	No
4	Oromia	East Shoa	Gimbichu	Chefe Donsa	4834	5388	10222	Yes
5	Oromia	North Shoa	Hidabu Abote	Ejere	5002	5322	10324	No
6	Oromia	Arsi	Amigna	Addelle	5315	5052	10367	Yes
7	Oromia	North Shoa	Wuchale	Muke Turri	5034	5340	10374	Yes
8	Oromia	West Hararghe	Anchar	Cheleleka	5443	5029	10472	Yes
9	Oromia	Horo Guduru Wollega	Gudru	Kombolcha	5480	5013	10493	Yes
10	Oromia	Arsi	Tiyo	Asella	4941	5596	10537	Yes
11	Oromia	South West Shoa	Kersana Malima	Lemmen	5539	5005	10544	Yes
12	Oromia	Finfinne Zuriya	Akaki	Dukem	5184	5585	10769	Yes
13	Oromia	Arsi	Jeju	Arboye	5547	5233	10780	Yes
14	Oromia	West Hararghe	Boke	Boke Tiko	5665	5137	10802	No
15	Oromia	Arsi	Chole	Chole	5470	5418	10888	Yes
16	Oromia	Arsi	Enkelo Wabe	Siltana	5379	5601	10980	No
17	Oromia	Horo Guduru Wollega	Jima Geneti	Hareto	5573	5671	11244	Yes
18	Oromia	Jimma	Seka Chekorsa	Seka	5525	5822	11347	Yes
19	Oromia	West Wollega	Boji Dermeji	Bila	5542	6231	11773	No
20	Oromia	Ilu Abba Bora	Algesachi	Alge	5944	5925	11869	Yes
21	Oromia	Finfinne Zuriya	Sebeta Hawas	Sebeta	5608	6275	11883	Yes
22	Oromia	South West Shoa	Ilu	Teji	5908	6174	12082	Yes
23	Oromia	Ilu Abba Bora	Yayu	Yayo	6014	6184	12198	Yes
24	Oromia	Guji	Uraga	Haro Wachu	6324	6013	12337	No
25	Oromia	West Arsi	Shala	Aje	6511	5878	12389	Yes
26	Oromia	Beddellee	Chora	Chora	6204	6248	12452	Yes
27	Oromia	Kellem Wollega	Anfilo	Mugi	6582	6088	12670	Yes

List of Town which has more than 10,000 Total Population in Oromia Region								
No	Region	Zone	Woreda	Towns	Urban Male	Urban Female	Total	Accessed by Federal Roads or Not
28	Oromia	Arsi	Deksis	Diksis	6167	6512	12679	Yes
29	Oromia	West Wollega	Guliso	Guliso	6361	6336	12697	Yes
30	Oromia	West Wollega	Begi	Begi	6340	6402	12742	Yes
31	Oromia	North Shoa	Dera	Gundo Meskel	6267	6588	12855	No
32	Oromia	Arsi	Sire	Sire	7072	6440	13512	Yes
33	Oromia	East Wollega	Diga	Ifa	6781	6738	13519	Yes
34	Oromia	Bale	Goro	Goro	6869	6899	13768	Yes
35	Oromia	Horo Guduru Wollega	Jima Rare	Wayyu	6837	7098	13935	Yes
36	Oromia	North Shoa	Debre Libanos	Debre Tsige	7277	7175	14452	Yes
37	Oromia	Ilu Abba Bora	Ale	Gore	7226	7378	14604	Yes
38	Oromia	East Hararghe	Bedeno	Bedeno	7789	6919	14708	No
39	Oromia	East Wollega	Jimma Arjo	Arjo	7234	7572	14806	Yes
40	Oromia	East Hararghe	Melka Belo	Jaja	8209	6855	15064	No
41	Oromia	Horo Guduru Wollega	Abay Chomen	Fincha'a	7774	7458	15232	Yes
42	Oromia	Guji	Qercha	Qercha	8032	7919	15951	No
43	Oromia	East Hararghe	Goro Gutu	Kara Mile	8649	7587	16236	Yes
44	Oromia	West Shoa	Ejerie	Addis Alem	8038	8217	16255	Yes
45	Oromia	West Arsi	Shashemene	Shashemene	8302	8147	16449	Yes
46	Oromia	East Wollega	Sibu Sire	Sire	8064	8471	16535	Yes
47	Oromia	Guji	Bore	Bore	8516	8035	16551	Yes
48	Oromia	West Wollega	Lalo Asabi	Inago	8147	8594	16741	Yes
49	Oromia	North Shoa	Were Jarso	Goha Tsiyon	8321	8678	16999	Yes
50	Oromia	Bale	Delo Mena	Menna	8811	8390	17201	Yes
51	Oromia	West Shoa	Ginde Beret	Kachise	10622	7232	17854	Yes
52	Oromia	East Hararghe	Qersa	Qersa	9428	8946	18374	Yes
53	Oromia	East Shoa	Bora	Bote	9292	9110	18402	Yes
54	Oromia	North Shoa	Kimbibit	Sheno	9121	9929	19050	Yes
55	Oromia	East Hararghe	Gursum	Funyan Bira	9970	9470	19440	Yes

List of Town which has more than 10,000 Total Population in Oromia Region								
No	Region	Zone	Woreda	Towns	Urban Male	Urban Female	Total	Accessed by Federal Roads or Not
56	Oromia	West Arsi	Adaba	Adaba	9716	9812	19528	Yes
57	Oromia	Jimma	Omonada	Asendabo	9808	9907	19715	Yes
58	Oromia	East Hararghe	Chinakesen	Chinaksen	10248	9534	19782	No
59	Oromia	Finfinne Zuriya	Sendafa Town	Sendafa	10191	9653	19844	Yes
60	Oromia	Arsi	Shirka	Gobessa	10279	9882	20161	No
61	Oromia	East Hararghe	Kombolicha	Melka Rafu	10720	9630	20350	Yes
62	Oromia	Jimma	Sekoru	Sekoru	10279	10257	20536	Yes
63	Oromia	Jimma	Gomma	Aggaro	10381	10226	20607	Yes
64	Oromia	Bale	Agarfa	Agarfa	10494	10335	20829	Yes
65	Oromia	West Hararghe	Tulo	Hirna	11403	10812	22215	Yes
66	Oromia	West Wollega	Mene Sibu	Mendi	11297	11311	22608	Yes
67	Oromia	Arsi	Digeluna Tijo	Sagure	11043	11687	22730	Yes
68	Oromia	Kellem Wollega	Dale Wabera	Kake	11537	11225	22762	No
69	Oromia	West Shoa	Jeldu	Gojjo	11623	11591	23214	Yes
70	Oromia	South West Shoa	Becho	Tullu Bollo	11529	11837	23366	Yes
71	Oromia	Arsi	Merti	Abomsa	12608	11029	23637	Yes
72	Oromia	Jimma	Limu Kosa	Suntu / Limu Genet	12097	11855	23952	Yes
73	Oromia	Horo Guduru Wollega	Shambu Town	Shambu	12404	11792	24196	Yes
74	Oromia	Finfinne Zuriya	Sulullta	Chanco	11871	12578	24449	Yes
75	Oromia	Arsi	Munesa	Kersa	12351	12132	24483	Yes
76	Oromia	East Hararghe	Meta	Chelenko	12952	11563	24515	Yes
77	Oromia	Arsi	Ludehetosa	Huruta	11933	12764	24697	Yes
78	Oromia	West Arsi	Kofele	Kofele	13240	11678	24918	Yes
79	Oromia	West Shoa	Adea Berga	Enchini	12296	13440	25736	Yes
80	Oromia	West Shoa	Toko Kutaye	Guder	12452	13302	25754	Yes
81	Oromia	West Hararghe	Daro lebu	Mechara	14406	12793	27199	Yes
82	Oromia	Borena	Yabelo	Yabelo	15028	13194	28222	Yes
83	Oromia	East Hararghe	Babile	Babile	14057	14533	28590	Yes

List of Town which has more than 10,000 Total Population in Oromia Region								
No	Region	Zone	Woreda	Towns	Urban Male	Urban Female	Total	Accessed by Federal Roads or Not
84	Oromia	Arsi	Hitosa	Iteya	14468	15367	29835	Yes
85	Oromia	Arsi	Dodota	Dera	15040	15842	30882	Yes
86	Oromia	Beddellee	Bede Town	Bede	15730	15770	31500	Yes
87	Oromia	North Shoa	Kuyu	Gebre Guracha	15830	16246	32076	Yes
88	Oromia	Bale	Ginir	Ginir	16420	16172	32592	Yes
89	Oromia	East Shoa	Fentale	Metehara	16700	16418	33118	Yes
90	Oromia	West Arsi	Gedeb Asasa	Hasasa	16735	16619	33354	Yes
91	Oromia	Arsi	Robe	Robe	17385	15978	33363	Yes
92	Oromia	East Shoa	Adami Tulu Jido Kombolcha	Ziway /Batu	17287	16474	33761	Yes
93	Oromia	East Hararghe	Deder	Deder	18624	17204	35828	Yes
94	Oromia	West Shoa	Chelia	Gedo	18750	17951	36701	Yes
95	Oromia	West Shoa	Bako Tibe	Bako	18806	18067	36873	No
96	Oromia	Guji	AdolaTown	Adola Weyyu	18718	18298	37016	Yes
97	Oromia	Finfinne Zuriya	Holeta Town	Holeta	18408	19198	37606	Yes
98	Oromia	Arsi	Limuna Bilbilo	Bekojji	18489	19186	37675	Yes
99	Oromia	West Wollega	Nejo	Nejo	19954	19592	39546	Yes
100	Oromia	West Hararghe	Habro	Gelemso	21648	19053	40701	Yes
101	Oromia	West Shoa	Dendi	Ginchi	20467	20400	40867	Yes
102	Oromia	West Hararghe	Meiso	Meiso	20592	20380	40972	Yes
103	Oromia	Jimma	Agaro town	Agaro	20701	20384	41085	Yes
104	Oromia	East Shoa	Adama	Adama	20076	21400	41476	Yes
105	Oromia	East Shoa	Boset	Welenchiti	21328	21465	42793	Yes
106	Oromia	East Wollega	Gida Keremu	Keremu	21929	21832	43761	Yes
107	Oromia	North Shoa	FicheTown	Fiche	20680	23720	44400	Yes
108	Oromia	Ilu Abba Bora	Metu	Metu	23026	23430	46456	Yes
109	Oromia	Kellem Wollega	Dembi Dolo Town	Dembi Dolo	24216	23303	47519	Yes
110	Oromia	West Wollega	Gimbi/gimbi town	Gimbi	25130	24869	49999	Yes
111	Oromia	Bale	Goba Town	Goba	24276	27439	51715	Yes

List of Town which has more than 10,000 Total Population in Oromia Region								
No	Region	Zone	Woreda	Towns	Urban Male	Urban Female	Total	Accessed by Federal Roads or Not
112	Oromia	Guji	Odo Shakiso	Shakiso	28858	25408	54266	Yes
113	Oromia	West Hararghe	Chiro Town	Chiro	28971	25336	54307	Yes
114	Oromia	West Arsi	Dodola	Dodola	28122	26985	55107	Yes
115	Oromia	West Gujii	Bule Hora	Agremariam	29120	27750	56870	Yes
116	Oromia	Guji	Negele Town	Negele	29344	27553	56897	Yes
117	Oromia	East Shoa	Dugda	Meki	30178	28312	58490	Yes
118	Oromia	South West Shoa	Weliso Town	Weliso	30190	30950	61140	Yes
119	Oromia	East Shoa	Lomme	Mojo	30301	32291	62592	Yes
120	Oromia	East Shoa	ZewayTown	Zeway	36707	33729	70436	Yes
121	Oromia	Bale	Robe Town	Robe	36047	35578	71625	Yes
122	Oromia	West Shoa	Ambo Town	Ambo	39390	38345	77735	Yes
123	Oromia	Finfinne Zuriya	Burayu	Burayu	38381	40521	78902	Yes
124	Oromia	Finfinne Zuriya	Sebeta Town	Sebeta	38946	40687	79633	Yes
125	Oromia	East Hararghe	Haromaya	Haromaya	40932	39806	80738	Yes
126	Oromia	West Arsi	Arsi Negele	Arsi Negelle	40929	42258	83187	Yes
127	Oromia	Arsi	Asela Town	Asela	54088	54483	108571	Yes
128	Oromia	East Wollega	Nekemte Town	Nekemte	61378	60007	121385	Yes
129	Oromia	East Shoa	Bishoftu Town	Bishoftu	76529	84825	161354	Yes
130	Oromia	West Arsi	Shashemene Twon	Shashemene	80997	81130	162127	Yes
131	Oromia	Jimma	Jimma Spe Town	Jimma Spe	97259	97969	195228	Yes
132	Oromia	East Shoa	Adama Town	Adama	174089	181386	355475	Yes

Source: Central Statistics Agency (CSA), Projection of 2017/18

Towns more than 10,000 population in SNNP Region

List of Town which has more than 10,000 Total Population in SNNP Region								
No	Region	Zone	Woreda	Towns	Urban Male	Urban Female	Total	Accessed by Federal
1	SNNP	Gamo Gofa	Kemba	Kemba	4791	5215	10006	Yes
2	SNNP	Bench Maji	Sheko	Sheko	4937	5330	10267	Yes
3	SNNP	Bench Maji	Maji	Tum	4888	5410	10298	Yes
4	SNNP	Bench Maji	Guraferda	Biftu	5309	5293	10602	Yes
5	SNNP	Siliti	Mirab Azernet	Duna	4795	5946	10741	No
6	SNNP	Hadiya	Gibe	Homocho	5545	5202	10747	No
7	SNNP	Gamo Gofa	Kucha	Selamber	5366	5523	10889	Yes
8	SNNP	Basketo	Basketo	Frehiwot	5368	5725	11093	Yes
9	SNNP	Wolayita	Damot Woyide	Beddessa	5525	5747	11272	Yes
10	SNNP	Bench Maji	Semen Bench	Mizan Aman	5419	5926	11345	Yes
11	SNNP	Wolayita	Damot Pulasa	Shanto	5627	5734	11361	Yes
12	SNNP	Wolayita	Ofa	Gesuba	5692	5840	11532	Yes
13	SNNP	Kefa	Decha	Chirri	5417	6215	11632	No
14	SNNP	Gedeo	Bule	Bule	5710	5995	11705	No
15	SNNP	Sidama	Chuko	Chuko	6302	5725	12027	Yes
16	SNNP	Gamo Gofa	Geze Gofa	Bulki	5833	6387	12220	Yes
17	SNNP	Hadiya	Duna	Anso	6016	6268	12284	Yes
18	SNNP	Gamo Gofa	Mirab Abaya	Birbir	5977	6434	12411	Yes
19	SNNP	Hadiya	Misha	Mortisso	6267	6352	12619	No
20	SNNP	Sidama	Bona Zuriya	Bona	6320	6465	12785	Yes
21	SNNP	Wolayita	Damot Sore	Gunino	6597	6403	13000	Yes
22	SNNP	Wolayita	Humbo	Humbo Tebele	6697	6567	13264	Yes
23	SNNP	Segen Hizeboch	Burji Special	Segen	6228	7137	13365	No
24	SNNP	Gamo Gofa	Bonke	Geressie	6363	7152	13515	Yes
25	SNNP	Sidama	Hula	Hagere Selam	7046	6549	13595	Yes
26	SNNP	Gurage	Enemor Ener	Gunchire	6893	7114	14007	Yes
27	SNNP	Wolayita	Kindo Koyisha	Bele	6808	7207	14015	Yes
28	SNNP	Dawuro	Tocha	Tocha	6897	7163	14060	No

List of Town which has more than 10,000 Total Population in SNNP Region								
No	Region	Zone	Woreda	Towns	Urban Male	Urban Female	Total	Accessed by Federal Road
29	SNNP	Sidama	Arbegona	Yaye	7615	6673	14288	No
30	SNNP	Kembata Timbaro	Doyo Gena	Doyo Gena	6895	7405	14300	Yes
31	SNNP	Siliti	Dalocha	Dalocha	7173	7261	14434	No
32	SNNP	Sheka	Masha	Masha	6942	7498	14440	Yes
33	SNNP	Kembata Timbaro	Anigacha	Anigacha	7124	7371	14495	No
34	SNNP	Gurage	Mareqo	Meskane	7493	7106	14599	Yes
35	SNNP	Kembata Timbaro	Tibaro	Durame	8074	8103	16177	Yes
36	SNNP	YEM	Yem Special	Fofa	7776	9173	16949	Yes
37	SNNP	Kembata Timbaro	Daniboya	Daniboya	8633	8619	17252	No
38	SNNP	Hadiya	Shashago	Bonosha	9251	8163	17414	Yes
39	SNNP	Konta	Konta Special	Chida	8251	9333	17584	Yes
40	SNNP	Gedeo	Wenago	Wenago	8943	9056	17999	Yes
41	SNNP	Segen Hizeboch	Amaro Special Wereda	Amaro	9657	8639	18296	Yes
42	SNNP	Bench Maji	Southern Bench	Mizan Aman	8539	9918	18457	Yes
43	SNNP	Gurage	Cheha	Emdibir	9328	9792	19120	Yes
44	SNNP	Segen Hizeboch	Konso Special	Konso	10193	9789	19982	Yes
45	SNNP	Kefa	Gimbo	Bonga	9426	11057	20483	Yes
46	SNNP	Sidama	Boricha	Yirba	11151	10935	22086	Yes
47	SNNP	Gedeo	Kochore	Chelelektu	11137	11403	22540	Yes
48	SNNP	Sidama	Dara	Kebedo	11100	11563	22663	Yes
49	SNNP	Gurage	Meskan	Butajira	12469	11689	24158	Yes
50	SNNP	Sidama	Bensa	Daye	13005	11549	24554	Yes
51	SNNP	Kefa	Chena	Wacha	11496	13280	24776	Yes
52	SNNP	Sidama	Shebedino	Lekku	12844	12263	25107	Yes
53	SNNP	Siliti	Lanifaro	Tora	13495	12921	26416	No
54	SNNP	Segen Hizeboch	Derashe Special	Gidole	13258	14812	28070	No
55	SNNP	Gamo Gofa	Chench	Chench	13374	14951	28325	Yes
56	SNNP	Gurage	Sodo Woreda	Bu'i	14062	15126	29188	Yes

List of Town which has more than 10,000 Total Population in SNNP Region								
No	Region	Zone	Woreda	Towns	Urban Male	Urban Female	Total	Accessed by Federal Road or
57	SNNP	Gedeo	Yirgachefe	Yirgachefe	15826	16308	32134	Yes
58	SNNP	Hadiya	Misrak Badawocho	Shonie	16558	16616	33174	Yes
59	SNNP	Kembata Timbaro	Kacha Bira	Shinshicho	16258	17456	33714	Yes
60	SNNP	Siliti	Silite	Kibet	17661	16680	34341	Yes
61	SNNP	Hadiya	Soro	Gimbicho	18110	17742	35852	Yes
62	SNNP	Dawuro	Mareka	Tercha	22103	18063	40166	Yes
63	SNNP	Kefa	Bonga Town	Bonga	21895	22434	44329	Yes
64	SNNP	Sidama	Aleta Wondo	Aleta Wondo	23751	23154	46905	Yes
65	SNNP	Gamo Gofa	Sawula Town	Sawula	23547	24730	48277	Yes
66	SNNP	Sidama	Wendo Genet	Kella	25354	23699	49053	Yes
67	SNNP	Kembata Timbaro	Hadaro Tunito	Hadero	24085	25995	50080	Yes
68	SNNP	Wolayita	Damot Gale	Bodditti	24932	26392	51324	Yes
69	SNNP	Kembata Timbaro	Kedida Gamela / Durame town	Durame	24826	27258	52084	Yes
70	SNNP	Sheka	Yeki	Tepi	26635	26084	52719	Yes
71	SNNP	Alaba	Alaba	Alaba	28468	28608	57076	Yes
72	SNNP	Gurage	Welkite Town	Welkite	30742	30567	61309	Yes
73	SNNP	Sidama	Dale	Yirgalem	31737	32770	64507	Yes
74	SNNP	South Omo	South Ari	Jinka	32859	32939	65798	Yes
75	SNNP	Wolayita	Bolossa Sore	Areka	32212	34603	66815	Yes
76	SNNP	Gurage	Butajira Town	Butajira	34513	36532	71045	Yes
77	SNNP	Bench Maji	Semen Bench	Mizan Teferi	36991	35333	72324	Yes
78	SNNP	Gedeo	Dila Town	Dila	63360	62239	125599	Yes
79	SNNP	Hadiya	Hosaena	Hosaena	72446	76401	148847	Yes
80	SNNP	Gamo Gofa	Arba Minch Town	Arba Minch	79961	79058	159019	Yes
81	SNNP	Wolayita	Sodo Town	Sodo	81862	79588	161450	Yes
82	SNNP	Awassa Town	Awassa Town	Awassa	166009	169499	335508	Yes

Towns more than 10,000 population in Somali Region

List of Town which has more than 10,000 Total Population in Somali Region								
No	Region	Zone	Woreda	Towns	Urban Male	Urban Female	Total	Accessed by Federal Roads or Not
1	Somali	Afder	Mirab Imi	Imi	5660	4964	10624	Yes
2	Somali	Shinile	Ayisha	Ayisha	5621	5105	10726	Yes
3	Somali	Afder	Bare	Bare	6820	4067	10887	No
4	Somali	Degehabur	Gunagado	Gunagado	6072	4835	10907	No
5	Somali	Jijiga	Harshin	Harshin	5867	5201	11068	No
6	Somali	Warder	Boh	Boh	6947	5423	12370	No
7	Somali	Warder	Geladin	Geladin	7147	5235	12382	No
8	Somali	Warder	Warder	Warder	6768	5618	12386	Yes
9	Somali	Shinile	Afdem	Afdem	6298	6207	12505	No
10	Somali	Korahe	Debewoin	Harad	7051	5528	12579	No
11	Somali	Gode	Kelafo	Kelafo	7874	7399	15273	No
12	Somali	Gode	Imiberi	Imiberi	8534	6795	15329	Yes
13	Somali	Erer	Fik	Fik	8848	7441	16289	Yes
14	Somali	Shinile	Erer	Erer	8736	8303	17039	Yes
15	Somali	Shinile	Denbel	Denbel	9808	8552	18360	No
16	Somali	Degehabur	Aware	Aware	11814	10411	22225	No
17	Somali	Shinile	Shinile	Shinile	13760	12891	26651	No
18	Somali	Jijiga	Kebri Beyah	Kebri Beyah	17879	16431	34310	Yes
19	Somali	Korahe	Kebridehar	Kebridehar	21673	17642	39315	Yes
20	Somali	Degehabur	Degehabur	Degehabur	21823	18563	40386	Yes
21	Somali	Liben	Dolo Odo	Dolo	27612	22682	50294	Yes
22	Somali	Jijiga	Awubere	Togochale	28719	24750	53469	Yes
23	Somali	Gode	Gode	Gode	32088	26039	58127	Yes
24	Somali	Jijiga	Jijiga	Jijiga	88924	80466	169390	Yes

Source: Central Statistics Agency (CSA), Projection of 2017/18

Towns more than 10,000 population in Tigray Region

List of Town which has more than 10,000 Total Population in Tigray Region								
No	Region	Zone	Woreda	Towns	Urban Male	Urban Female	Total	Accessed by Federal Roads or Not
1	Tigray	North Western Zone	Tahitay Adiyabo	Shiraro	4827	5720	10547	Yes
2	Tigray	Cenrtal Zone	Tanqua Abergele	Yechila	5850	5827	11677	Yes
3	Tigray	South Eastern Zone	Degua Temben	Hagere Selam	5770	6275	12045	Yes
4	Tigray	Eastern Zone	Hawzen	Hawzen	6127	6398	12525	Yes
5	Tigray	Southern Zone	Ambalage	Maichew	6350	6216	12566	Yes
6	Tigray	Cenrtal Zone	Mereb Leha	Rama	6256	6849	13105	Yes
7	Tigray	North Western Zone	Laelay Adiabo	Adida'iro	6070	7216	13286	Yes
8	Tigray	North Western Zone	Tselemt	May Tsebri	6928	7366	14294	Yes
9	Tigray	South Eastern Zone	Seharti Samre	Samre	7430	7806	15236	Yes
10	Tigray	Western Zone	Tsegede	Nigus	7898	7356	15254	Yes
11	Tigray	Eastern Zone	Gulo Meheda	Fatsi	7829	8892	16721	Yes
12	Tigray	North Western Zone	Asegede Tsimbila	Endabaguna	8030	8723	16753	Yes
13	Tigray	North Western Zone	Medebay Zana	Selehleha	8078	9340	17418	Yes
14	Tigray	Western Zone	Welqayet	Adi Lemets	9040	8823	17863	Yes
15	Tigray	Eastern Zone	Atsbi Wonberta	Atsbi Endasilassie	8627	9820	18447	Yes
16	Tigray	Cenrtal Zone	Tahitay Maychew	Wukiro Maray	9073	9477	18550	Yes
17	Tigray	South Eastern Zone	Hintalo Wajirat	Adi Gudom	9743	10054	19797	Yes
18	Tigray	Southern Zone	Rya Azebo	Mehoni	13195	13443	26638	Yes
19	Tigray	Cenrtal Zone	Abiyi adi Town	Abiyi adi	13541	13218	26759	Yes
20	Tigray	Cenrtal Zone	Wereilehi	Edaga Arbi	13124	14256	27380	No
21	Tigray	Southern Zone	Korem Town	Korem	13032	14868	27900	Yes
22	Tigray	North Western Zone	Shire Enida Silase Town	Shire Enida Silase	14124	14163	28287	Yes
23	Tigray	Eastern Zone	Saesi Tsadamba	Fireweyni	14484	16842	31326	Yes
24	Tigray	Western Zone	Humera Town	Humera	19716	16358	36074	Yes
25	Tigray	Cenrtal Zone	Ahiferom	Enticho	18851	19974	38825	Yes
26	Tigray	Southern Zone	Maychew Town	Maychew	19074	19765	38839	Yes

List of Town which has more than 10,000 Total Population in Tigray Region								
No	Region	Zone	Woreda	Towns	Urban Male	Urban Female	Total	Accessed by Federal Roads or Not
27	Tigray	Eastern Zone	Wekero Town	Wekero	24320	25760	50080	Yes
28	Tigray	Western Zone	Qafta Humera	Humera	26905	23416	50321	Yes
29	Tigray	Southern Zone	Alamata town	Alamata	27926	27227	55153	Yes
30	Tigray	Central Zone	Adwa Town	Adwa	31675	35390	67065	Yes
31	Tigray	Central Zone	Aksum Town	Aksum	35886	38121	74007	Yes
32	Tigray	North Western Zone	Shiraro Town	Shiraro	37835	40531	78366	Yes
33	Tigray	Eastern Zone	Adi Girat Town	Adi Girat	45003	50355	95358	Yes
34	Tigray	Mekele special Zone	Mekele	Mekele	181542	176986	358528	Yes

Source: Central Statistics Agency (CSA), Projection of 2017/1

11.8 Travel Time gain Per Trip for Selected Towns and Borders

Name Origin and Destination	Travel Time New	Total_Leng	TT_Existing	Difference
Abderafi - Humera	0.708	70.812	2.77	2.06
Abderafi - Metema	1.089	108.874	7.3	6.21
Abderafi - Gonder	2.875	287.544	3.92	1.04
Abderafi - Rama	3.621	362.111	20.63	17.01
Abderafi - Zalaanbessa	4.654	465.371	21.19	16.54
Abderafi - Adigrat	4.773	477.259	20.56	15.79
Abderafi - Mekele	5.86	586.017	17.99	12.13
Abderafi - Weldiya	7.993	799.346	12.74	4.74
Adama - Shashemene	1.979	197.883	3.35	1.37
Adama - Dire Dawa	3.225	322.47	7.18	3.96
Addis Ababa - Debre Markos	2.299	229.905	4.97	2.67
Addis Ababa - Bure	3.205	320.514	6.73	3.53
Addis Ababa - Bahir Dar	4.524	452.404	8.13	3.6
Adigrat - Zalaanbessa	0.285	28.527	0.64	0.36
Adigrat - Mekele	1.088	108.758	5.7	4.61
Adigrat - Rama	1.151	115.148	2.73	1.58
Adigrat - Weldiya	3.221	322.087	11.49	8.27
Adigrat - Humera	4.064	406.448	20.86	16.8
Adigrat - Abderafi	4.773	477.259	20.56	15.79
Adigrat - Metema	5.861	586.133	19.54	13.68
Adigrat - Gonder	6.232	623.18	16.64	10.41
Bahir Dar - Bure	1.319	131.89	4.79	3.47
Bahir Dar - Debre Markos	2.225	222.499	4.65	2.42
Bahir Dar - Addis Ababa	4.524	452.404	8.13	3.6

Name Origin and Destination	Travel Time New	Total_Leng	TT_Existing	Difference
Bahir Dar - Jinka	10.981	1098.104	19.36	8.38
Bahir Dar - Konso	12.071	1207.07	16.89	4.82
Bahir Dar - Imi	12.739	1273.874	22.85	10.12
Bahir Dar - Dolo Odo	16.498	1649.791	28.36	11.86
Bahir Dar - Moyale	20.125	2012.508	22.08	1.95
Bedele - Sodo	2.601	260.139	9.37	6.76
Bonga - Tepi	0.917	91.684	2.87	1.96
Bure - Debre Markos	0.906	90.609	1.77	0.86
Bure - Bahir Dar	1.319	131.89	4.79	3.47
Bure - Addis Ababa	3.205	320.514	6.73	3.53
Bure - Jinka	12.3	1229.994	17.97	5.67
Bure - Konso	13.39	1338.961	15.49	2.1
Bure - Imi	14.058	1405.764	21.46	7.4
Bure - Dolo Odo	17.817	1781.681	26.96	9.15
Debre Markos - Bure	0.906	90.609	1.77	0.86
Debre Markos - Bahir Dar	2.225	222.499	4.65	2.42
Debre Markos - Addis Ababa	2.299	229.905	4.97	2.67
Debre Markos - Jinka	13.206	1320.603	16.2	3
Debre Markos - Imi	14.964	1496.373	19.69	4.73
Debre Markos - Dolo Odo	18.723	1872.289	25.19	6.47
Degeh Bur - Jigjiga	1.668	166.827	2.78	1.11
Dolo Odo - Imi	3.759	375.917	9.4	5.64
Dolo Odo - Yabelo	8.806	880.624	20.5	11.69
Dolo Odo - Konso	9.699	969.889	18.83	9.13
Dolo Odo - Jinka	10.789	1078.855	21.3	10.52

Name Origin and Destination	Travel Time New	Total_Leng	TT_Existing	Difference
Dolo Odo - Bahir Dar	16.498	1649.791	28.36	11.86
Dolo Odo - Bure	17.817	1781.681	26.96	9.15
Dolo Odo - Debre Markos	18.723	1872.289	25.19	6.47
Ferfir - Gode	2.273	227.297	5.68	3.41
Gimbi - Nejo	0.552	55.172	1.23	0.68
Gode - Ferfir	2.273	227.297	5.68	3.41
Gonder - Humera	2.167	216.732	4.22	2.05
Gonder - Abderafi	2.875	287.544	3.92	1.04
Gonder - Rama	5.08	508.032	16.71	11.63
Gonder - Zalaanbessa	6.113	611.291	17.27	11.16
Gonder - Adigrat	6.232	623.18	16.64	10.41
Gonder - Mekele	7.319	731.937	14.07	6.75
Humera - Abderafi	0.708	70.812	2.77	2.06
Humera - Metema	1.797	179.686	7.6	5.8
Humera - Gonder	2.167	216.732	4.22	2.05
Humera - Rama	2.913	291.3	20.93	18.02
Humera - Zalaanbessa	3.946	394.559	21.49	17.55
Humera - Adigrat	4.064	406.448	20.86	16.8
Humera - Mekele	5.152	515.205	18.29	13.14
Humera - Weldiya	7.285	728.535	13.04	5.76
Imi - Dolo Odo	3.759	375.917	9.4	5.64
Imi - Konso	5.94	593.972	16.91	10.97
Imi - Jinka	7.029	702.938	19.38	12.35
Imi - Negele	7.088	708.806	15.2	8.11
Imi - Moyale	7.386	738.634	22.1	14.71

Name Origin and Destination	Travel Time New	Total_Leng	TT_Existing	Difference
Imi - Bahir Dar	12.739	1273.874	22.85	10.12
Imi - Bure	14.058	1405.764	21.46	7.4
Imi - Debre Markos	14.964	1496.373	19.69	4.73
Jigjiga - Degeh Bur	1.668	166.827	2.78	1.11
Jinka - Konso	1.09	108.966	2.48	1.39
Jinka - Yabelo	1.982	198.231	4.21	2.23
Jinka - Imi	7.029	702.938	19.38	12.35
Jinka - Dolo Odo	10.789	1078.855	21.3	10.52
Jinka - Bahir Dar	10.981	1098.104	19.36	8.38
Jinka - Bure	12.3	1229.994	17.97	5.67
Jinka - Debre Markos	13.206	1320.603	16.2	3
Kebri Dehar - Shilabo	1.028	102.801	1.71	0.69
Konso - Yabelo	0.893	89.265	1.74	0.84
Konso - Jinka	1.09	108.966	2.48	1.39
Konso - Imi	5.94	593.972	16.91	10.97
Konso - Dolo Odo	9.699	969.889	18.83	9.13
Konso - Bahir Dar	12.071	1207.07	16.89	4.82
Konso - Bure	13.39	1338.961	15.49	2.1
Mekele - Adigrat	1.088	108.758	5.7	4.61
Mekele - Zalaanbessa	1.373	137.285	6.33	4.96
Mekele - Weldiya	2.133	213.329	8.91	6.78
Mekele - Rama	2.239	223.906	5.77	3.53
Mekele - Humera	5.152	515.205	18.29	13.14
Mekele - Abderafi	5.86	586.017	17.99	12.13
Mekele - Metema	6.949	694.891	16.97	10.02

Name Origin and Destination	Travel Time New	Total_Leng	TT_Existing	Difference
Mekele - Gonder	7.319	731.937	14.07	6.75
Metema - Abderafi	1.089	108.874	7.3	6.21
Metema - Humera	1.797	179.686	7.6	5.8
Metema - Rama	4.71	470.985	19.61	14.9
Metema - Zalaanbessa	5.742	574.245	20.17	14.43
Metema - Adigrat	5.861	586.133	19.54	13.68
Metema - Mekele	6.949	694.891	16.97	10.02
Metema - Weldiya	9.082	908.22	11.72	2.64
Moyale - Dolo Odo	3.627	362.717	24.02	20.39
Moyale - Negele	7.092	709.232	15.31	8.22
Moyale - Imi	7.386	738.634	22.1	14.71
Moyale - Bahir Dar	20.125	2012.508	22.08	1.95
Negele - Dolo Odo	3.465	346.515	8.71	5.24
Negele - Imi	7.088	708.806	15.2	8.11
Negele - Moyale	7.092	709.232	15.31	8.22
Nejo - Gimbi	0.552	55.172	1.23	0.68
Rama - Zalaanbessa	1.033	103.26	3.37	2.34
Rama - Adigrat	1.151	115.148	2.73	1.58
Rama - Mekele	2.239	223.906	5.77	3.53
Rama - Humera	2.913	291.3	20.93	18.02
Rama - Abderafi	3.621	362.111	20.63	17.01
Rama - Weldiya	4.372	437.235	11.56	7.18
Rama - Metema	4.71	470.985	19.61	14.9
Rama - Gonder	5.08	508.032	16.71	11.63
Shashemene - Adama	1.979	197.883	3.35	1.37

Name Origin and Destination	Travel Time New	Total_Leng	TT_Existing	Difference
Shashemene - Dire Dawa	5.204	520.353	10.53	5.33
Shilabo - Kebri Dehar	1.028	102.801	1.71	0.69
Sodo - Bedele	2.601	260.139	9.37	6.76
Tepi - Bonga	0.917	91.684	2.87	1.96
Weldiya - Mekele	2.133	213.329	8.91	6.78
Weldiya - Adigrat	3.221	322.087	11.49	8.27
Weldiya - Zalaanbessa	3.506	350.614	12.12	8.61
Weldiya - Rama	4.372	437.235	11.56	7.18
Weldiya - Humera	7.285	728.535	13.04	5.76
Weldiya - Abderafi	7.993	799.346	12.74	4.74
Weldiya - Metema	9.082	908.22	11.72	2.64
Yabelo - Konso	0.893	89.265	1.74	0.84
Yabelo - Jinka	1.982	198.231	4.21	2.23
Yabelo - Imi	5.047	504.707	18.58	13.53
Yabelo - Dolo Odo	8.806	880.624	20.5	11.69
Yabelo - Bahir Dar	12.963	1296.335	18.56	5.6
Yabelo - Bure	14.282	1428.226	17.17	2.88
Yabelo - Debre Markos	15.188	1518.834	15.4	0.21
Zalaanbessa - Adigrat	0.285	28.527	0.64	0.36
Zalaanbessa - Rama	1.033	103.26	3.37	2.34
Zalaanbessa - Mekele	1.373	137.285	6.33	4.96
Zalaanbessa - Weldiya	3.506	350.614	12.12	8.61
Zalaanbessa - Humera	3.946	394.559	21.49	17.55
Zalaanbessa - Abderafi	4.654	465.371	21.19	16.54
Zalaanbessa - Metema	5.742	574.245	20.17	14.43

Name Origin and Destination	Travel Time New	Total_Leng	TT_Existing	Difference
Zalaanbessa - Gonder	6.113	611.291	17.27	11.16
Total	883.615	983.63	1945.63	1062.06
Difference				1062 hrs or 44 Days

11.9 Comments on the Draft Final Report

Response to Comments to the draft Final 5 and 10 Years Federal Road Network Master Plan

1. <u>Project Background</u>	
Project:	Supplementary Agreement No-1 for Consultancy Service for Preparation of Road Functional Classification for Federal and Regional Roads (Preparation of Five (5) and Ten (10) Years Federal Road Network Master Plan of Ethiopia)
Client:	Ethiopian Roads Authority/ERA/
Consultant:	Seoyoung Engineering Co., Ltd in JV with Kyong Dong Engineering Co., Ltd in Sub – Consultancy with AFRI Geo-information Engineering Plc. and Alert Engineering Plc.
Financer:	Government of Ethiopia/GoE/
Contract Signing Date:	July 31, 2019
Effective Date: (date of commencement)	August 15, 2019
Contract expiration date:	April 15, 2020 (already passed)
Presented Deliverable:	<u>Draft Final Report on Preparation of 5 and 10 Years Federal Road Network Master Plan</u>

Page No.	Reference	Description	Comment	Response to comments
	General		➤ In general, the document is comprehensive and detail enough in basing the arguments and overall recommendations in the plan based on detail socio-economic data.	Comment Accepted
			In the first part of the document, different facts and information from different sources is presented. However the consultant, beyond presenting different facts and statistics from different reports, has not analyzed them critically and show the implication of same. The link between the socio-economic analysis and the recommendations should be clearly established and indicated. The high level objectives and pictures of the implication of the ten year plan shall be seen	Comment Accepted,
			The middle income Country benchmarking and analysis assumes average road density of 190 km/1000 sq.km and estimated 231,700 k.m. for Ethiopia. There are two important issues which need to be clearly established in the document. The first one is that the benchmarking should be based on clearly defined assumptions and criteria. There is no clear basis for picking the selected countries.	Comment Noted and modified During the preparation of this document. So the consultant has proposed taking criterion by averaging the road density of middle income nation countries.

			Countries for benchmarking should be selected based on relevance and appropriateness. Some of the countries (E.g. Djibouti, Cameroon, Tanzania, etc.) in the analysis have road network size which can be considered as outliers and hence significantly distort the average. Second, the analysis shall be based on proper baseline and target as well as actual national scenarios on the ground. The 190 km/1000 sq.km density and the proposed optimum road network size (231,700k.m.) don't match	
			The document indicates the national road network size to be 120,313 k.m. We understand this figure disregards urban roads. However, the figure may not only give the wrong picture but also to wrong analysis, particularly density and related analysis.	Comment Accepted and modified
			On page 12/254, paragraph 1, it says "maximum effort is made to ensure fair and equitable network distribution among regions." such arguments are very generic and may have different implications. Hence, objective and data backed statements shall be included	Comment Accepted and modified
			In the document, it is not clearly indicated (shown) what specific approach/methodology is used to identify missing links	Comment is accepted and modified

			The way the consultant utilized Random Model Approach should be checked. It is not validated based on the actual fact on the ground. The proposed estimated length of new roads for each region is both misleading and inappropriate. The figures indicated (Somali 60,609 k.m.; SNNPR 803 k.m.; Oromia 13,799 k.m.; Afar 13,958 k.m.; etc.) are not professionally analyzed and the row data is simply put. In this regard, the subsequent table on accessibility is not logical and doesn't match with the fact on the ground	Comment Accepted and modified
			The Expressway list indicated is neither exhaustive nor clear on how it is organized. For instance, Expressway 2.4 (Dire-dawa – Harar – Jijiga – Togowuchale) is indicated as part of the Expressway to Dire-dawa Dewelle. Similarly, Under Expressway 3 (Addis – Kombolcha – Mekelle – Zalambessa), it is indicated Kombolcha outer ring, Mekelle outer ring, Adwa – Rama; both the list and the categorization is misleading	Comment Accepted and modified
			The document is not sufficiently clear about Expressways and Outer-rings both conceptually and in practice. The basis of differentiation and recommendation is not clear. Similarly, the issue of major outer rings and minor rings (major town rings) shall be clearly shown. For instance, as part of the	Comment Noted: The identification and priorities for roads to be upgraded for 4 lanes are done using strategic analysis of HDM-4 on the existing roads. And those roads which have positive NPV are prioritized based on their NPV

			proposed outer ring of Ambo- Woliso- Butajira-Meki-Metehara-Fiche-Ambo, there is the section from Butajira-Meki but not clear how this will be seen vis-à-vis the existing Butajira-Zeway and the ongoing Kela-Meki road. How the consultant does approached the prioritization considering the existing/ongoing roads?	values. Then these roads and other Trunks and links are overplayed with their TGA classes and roads with higher class (Class 0 and Class I) TGAs are considered for Expressway. It should be noted that Roads classified to Expressway are based on TGAs they connect and attributes on logistic corridor. Identified rings are also classified based on their overlaying TGAs.
			➤ This is a Grand National Master Plan document that's for 5 and 10 years, the report in general seems compressive; however, it needs proper review of report writing as several misspelling and grammar errors are observed; and there are expressions without a context. In addition it's important to review included figures and tables to check quality; it's also advisable to appropriate paper size in certain cases for better presentation. In general the document needs critical review and editorial work as there are silly mistakes which may imply negligence and hence the consultant is required to make this document of required the standard. This includes annexing very long tables (E.g., table 4.1, 4.2, 4.3, 6.3.2, 6.6, etc).	Comment Noted and modified accordingly.

			Regarding the review of the previous program, the discussion is mainly focused on GTP II program, it's understood that review of target indicators of GTP II is important in this document; However, reviewing and analyzing the whole Road Sector Development Programs (RSDPs) is also important. Thus, the discussion on the review of the previous program should incorporate the discussion on the whole RSDPs	Comment Accepted and modified.
			Identified projects that are to be implemented on the next five and ten years should be categorized under package, packaging helps to easily capture the projects importance in each category. Packaging sector wise such as tourism projects, mining projects, industrial park projects, etc. is important in addition to the project type. Hence, the consultant shall indicate which specific roads serve which purposes	Comment noted and modified
			While prioritizing and preparation of the implementation plan, it's important to consider the effect on the road corridor rather than treating a particular segment as a single project. For Example, as per the implementation plan the road segment Chenchha – Chano is to be implemented in 2029/30, even though the road up to Chenchha is under construction and after Chano is under design; which will	Comment Accepted and Considered.

			make this particular segment to be missing for the next 10 years. Therefore, it's important to take in to consideration of the corridor context while prioritizing such projects. Otherwise, the prioritization may not be logical and based on ongoing facts	
			➤ In this project, a considerable time has been passed for data verification, especially in refining the projects that are under ERA, ongoing, design and so on. However, still there are roads that are excluded, miss represented in the prepared plan as compared to ERA Road Network, which have been provided various times, like Nefasam – Bichana gravel road that is supposed to be included in upgrading projects. It's required to identify and revise such missed segments and inconsistencies.	Comment Noted. Nifasm-Bichena is already included with the name "Debremarkos-Bichena". The road name is corrected to "Nifasm-Bichena".
			Regarding the multi criteria analysis for prioritization of the missing links it's important to undertake certain assessment (iterative exercise) by making certain change on the value given for each criteria and see the result, to make the criteria more appealing	Comment Accepted and modified.
			Starting page 40/254 (under 2.6 and 2.7) the indicated rationale and principles for project identification, selection and prioritization do not give clear direction	Comment Accepted and modified. The Rational of the proposed master plan declares the logical principles and targets set to be achieved nationally and more emphasis

				on ERA's duties in the short term period. Basic Project selection principles are also reviewed.
			There are outdated maps in the document. For instance, on page 65/254 under 3.1.9.2, location of boarder entries – map – and figure 3.11 Regional Logistic Area is not exhaustive. Being 2014 map, it doesn't show potential and new developments	Comment Accepted. The data is checked and exhausted
			➤ The HDM-4 analysis is applied for strategic analysis such as identification of gravel roads to be upgraded to AC, rehabilitation and upgrading of Asphalt roads to better standard. The result of the analysis depends on the inputs and considerations taken, it may be difficult to scan input data of HDM-4 regarding its quality; rather, it is better to interpret HDM-4 results for each road to come up with an acceptable proposal. Thus, the output of the HDM-4 strategic analysis requires contextual interpretation for each road projects as simple application will be misleading whether it is from input data quality or application. In order to support you in interpretation we already forwarded the feedback from our RNSMBDs regarding the projects to be upgraded and rehabilitated, please use it as a reference to come up with a proposal that is	Comment Accepted and modified.

			meaningful to ERA and the public in general.	
			In case of the link with the Functional Classification, the class of each road segment is mentioned in your report, that includes collector and feeder roads, even though the jurisdiction is not yet proposed or decided, there is a tendency that ERA will not undertake the construction of at least collector and feeder roads, yet again presented in the implementation plan even in most cases to be implemented before better class roads. The other point, it's understood that the classification is undertaken based on TGA and the prioritization is also based on the same criteria, it's understood that the output from the two can't be exactly the same and it's possible that a particular road that is with lower class as per RFCS can come before the better class road due to the weighting given in each situation. However, how a feeder or collector can come before trunk road as our major base is TGA in both cases, which is highly unlikely. Please take a serious review of such scenario as it will put all the effort to come up with the plan to be questioned. Hence, the consultant is strongly advised to further work on relating the functional classification and the selection as well as prioritization of proposed roads based on clear justification.	Comment Noted and high attention has been given and exercised again as per the comment. Projects are prioritized based on the Rank gained and as per their marks using the priority exercise regardless of their functions. In addition to selected TGA criterion used in the road functional classification, the consultant has introduced additional criterion in the priority ranking which may result in the implementation of feeder or collector roads before other high class roads.

			In several parts of the report you mentioned the geometric standard of the road (for example, number of lanes for better standard roads), which will be decided later on during design of the particular road segment or project actual implementation, which is might be different from what we are proposing now. It's important to understand that mentioning such standards at this stage is not required. So, please remove any mentioned geometric standard from the report while submitting the final version	Comment Accepted and modified.
			The five and ten year's implementation plan starts in 2020/21(2013 E.C), in mean time the 2013 E.C. plan is in advanced stage, which is different from the implementation plan. Thus, you are required to collect the 2013 E.C plan and make the required adjustments accordingly. All in all, this has its own implication on the implementation plan preparation	Comment Accepted and modified
			On the methodology under the inception report (please see page 51 of inception report) you have mentioned to prepare implementation strategy of the projects, which is very important parts that should be included in the master plan; however, this report doesn't incorporate any implementation strategy. Thus, you should prepare implementation strategy as per your methodology, which is part of the	Comment Accepted and modified. A chapter is included to deal with implementation strategy

			contract agreement. In relation to this, it's also required to mention on the related human capacity, knowledge and so on	
			➤ The Korean experience (page 135/254) is not well organized and structured in a way it can clearly imply the lessons to Ethiopia.	Comment accepted and modified

3. Detail of comments on Draft Final Report on Preparation of 5 and 10 Years Federal Road Network Master Plan

Page No.	Reference	Description	Comment	Response
	Executive summary	Master plan study initiation	➤ The first paragraph is said that, the master plan study was initiated by ERA. The initiation and the direction not only by ERA but also the Government of Ethiopia's too, in the aim of lifting up the economy into middle income and reducing poverty. So that, the ten years road sector master plan is part of the government home growing economy policies. Thus, correct the sentences accordingly while submitting the final.	➤ Comment Accepted and modified

Page No.	Reference	Description	Comment	Response
1-2	1 Project Background and Review of Ethiopian Economic Profile	1.1 Project Background and the status of existing network	➤ On Page 1 of the report, it is mentioned that “Road Transport accounts for more than 95% of domestic passenger and cargo traffic.” On other side, during the first RSDP plan study it also accounts about 95%. However, now a day the road transport is not the only means of the transportation of goods and passengers, but also Railway transport was emerged and has its own contribution on the transportation system. Thus, it is important to check the percentage proportion of road transport after the engagement of new railway transport.	➤ Comment Noted. Even though the rail transport has been emerged and implemented in the transportation sector, still its contribution is very minimal and the road transport shares the same percentage, 97% for passengers and 95% for freight.
			➤ On Page 2, Table 2.2 column 2 shows number of woredas in all regions and city administrations of the country. However, some of the numbers are not showing the real numbers of the woredas in region. Thus, it is important to update with the latest figures.	➤ Comment Accepted and modified
11-25		Implementation of previous master plan	➤ On page 11, about the implementation of previous master plan the report only evaluated GTP II. But the implementation of the existing master plan uses the past 20 years including GTP I. Thus, it is important reconsider all implementation periods of the master plan.	➤ Comment Accepted and modified accordingly.
		Review of 10 years	➤ Under this section, it is mentioned that the two consultants hired by ERA had performed detail condition survey <i>all federal and gravel roads</i> . It is not clear, the word that's all <u>federal</u> and <u>gravel</u>	➤ Comment Accepted and modified

Page No.	Reference	Description	Comment	Response
	2. Review of the Previous Studies, GTP II Program, Ongoing and Planned Projects, New Proposed Targets	Maintenance Master Plan	road, thus, make it clear in your final report. ➤ On page 12, third paragraph, it is mentioned that the unpaved or gravel data taken from five <i>Districts</i> . According to ERA organizational structure there is no districts. Thus, correct and change it by RNSMBD (Road Network and Safety Management Branch Directorate).	➤ Comment Accepted and modified
		Table number	➤ On page 13 paragraph two line two is said that, table <u>vindicate</u> . The underline word is not clear for all; in addition to that the table number also is not indicated. Please, correct the word and insert the table number.	➤ Comment Accepted and modified
		2.4 Review of Target Indicators of GTP II	➤ On page 16, Table 2.3 explains about the current road network of the country. In this table it is shown that the total road network is around 115,430.7 km as of 2011 E.C. However, by the same year, the real figure of the total road network of the country is about 144,027.8 km or 120,313.4 if urban roads are excluded. Thus, check and correct it with the new figures accordingly and same correction should be made to the indicators	➤ Comment Accepted and modified
		Road network formula	➤ On page 21 random road network formula write in the form of $e^{-d/m}$. please, define each words in the form of = e' stand for _____ = -d' stand for _____ and = m' stand for _____	➤ Comment Accepted and modified

Page No.	Reference	Description	Comment	Response
	2. Review of the Previous Studies, GTP II Program, Ongoing and Planed Projects, New Proposed Targets	2.5.3 Expected Volume of Work from ERA, Regional Road Authorities and Woredas	➤ On page 24, on the first paragraph it is mentioned that, the analyzing of the trend of the road network in the past 23 years. However, total RSDP year is 22 years as shown on the table 2-9. Thus, correct it by 22 years.	➤ Comment Accepted and modified
		2.6 Rationale of Proposed Master Plan	➤ Under this section, in item number 1 & 2 it is mentioned that connecting any two capitals and access all regional capital etc. with one day trip in 2050 G.C. However, the master plan implementation period is 10 years which is up to 2030 G.C. Thus, it is important to correct the years/targets within the implementation period only while submitting the final.	➤ Comment Noted. even though the master plan target period is 2030 G.C, the consultant propose and set long term vision for 2050 G.C especially for the proposal of expressway and introduction of ring structure (connecting two expressways radiating from the capital) in the Ethiopian network. So the this master plan has considered this long term vision for preparation of implementation Plan
		2.7 Basic project selection principles	➤ Under this section, in item number 5, rather than saying identified high mining and potential areas and provide better access for them, it is better to say mining and natural resources potential areas.	➤ Comment Accepted and modified
26-49	3. Identification of Potential Economic Centers and Corridors	3.1 Identification of Potential Centers and Corridors Criteria to identify missing links	➤ Under this section, detail explanations on the main criterions to identify missing links such as <i>tourism and livestock populations</i> are missed. It is important to reconsider it while submitting the final. ➤ It is well known that Ethiopia is one of the richest nations in the world with potential diversified tourist attraction resource (I.e. Natural, Cultural, Historical & Spiritual). And it is also known that the contribution of the tourism sector to	➤ Comment Accepted and Modified

Page No.	Reference	Description	Comment	Response
			the national economy is way below compared to the potential. This is mainly due to lack of adequate infrastructure that will facilitate & create a better opportunity to exploit the benefit tied up in the sector. One of the major infrastructures that will impact the tourism sector is road. Thus, identifying tourist attraction areas & considering them as one of the major traffic generation centers should be mandatory.	
		Spelling error	➤ On page 26 number 5, population of large scale <u>faming</u> . Please, correct the word faming into farming.	➤ Comment Accepted and Modified
		3.1.5 Surplus Production and Cash Crop Area	➤ On page 40, under surpluses Crop production in Amhara Region, it is mentioned that, the number of Woreda in Amahara Region is 104. But, in Table 3.7 summary shown that, the total number of Woreda is 102. Thus, correct the number and avoid the inconsistency.	➤ Comment Accepted and modified
	3. Identification of Potential Economic	The sources of the data	➤ When we see Chapter three, only three tables show the sources of the data as part of the input of this study, but the publication years of the document is not mentioned. Furthermore, 15 tables have not the data sources and publication years. Similarly the Map and the Figure too. Even though those sources of data mentioned in other reports, this report shall be full by itself. Therefore, this study needs evidences and data sources to prepare implementable master plan. So, please, incorporate the	➤ Comment Accepted and modified

Page No.	Reference	Description	Comment	Response
	Centers and Corridors		necessary missing information in to the report.	
		3.1.9 Transport and Logistics Hubs 3.1.9.1. The Dry Ports	➤ On page 48, (The Dry Ports) According to the consultant the dry ports locations are using as part of the identification of missing links. But the location of the dry ports is the side of the existing roads. So that, this information is better to use the upgrading of existing roads rather than missing link. Thus, check and correct the assumption	➤ Comment noted but they are included mainly to ensure they have a proposed access and to get background knowledge for the proposal of expressway and rings as some of them are missing links.
		3.1.9.2 Customs and Border entries	➤ On page 49, about Customs. The location of the customs station is on the existing roads side. So, how it's used for identification of missing links. Thus, check and correct the assumption	➤ Comment noted but they are included mainly to ensure they have a proposed access and to get background knowledge for the proposal of expressway and rings as some of them are missing links.
68	4. Traffic Count Survey	4.3.5 Traffic Count Survey Result	➤ The input that the computations of AADT analysis of project roads are normal, generated and diverted traffic is necessary. But the consultant presented only normal traffic on page 68 and 69, which is partial. Please, incorporate the missing AADT data which is generated from the Diverted and Generated traffic . Additionally, please, include Non-motorized AADT traffic too.	➤ Comment noted but traffic count survey is done for existing ERA roads which are not included in the yearly ERA's traffic Count Survey. The survey doesn't include OD and Non-Motorized traffic count.
83-	5. Unit Cost Estimate	5.1.2 Proposed Unit Cost	➤ Under 5.1.2, on table 5.6 you have proposed average unit cost for different types of works/interventions. Does the estimated average per Km cost includes the costs of the road design part? Please put a remark	➤ Comment Accepted. The cost include design and supervision cost.
		6.1 Consideration of Major Nodes	➤ Under 6.1 1st paragraph 5th line it is mentioned that "In the exercise of identification of missing links, socioeconomic data which forms	➤ Comment Accepted and modified. The process is also included.

Page No.	Reference	Description	Comment	Response
83-		and Economic Growth poles	TGAs are taken as background maps and also so many maps have been prepared for the purpose of identification. Instead of saying "... so many maps have been prepared..." it is better to state the process followed or what type of map used & why for the stated purpose. For example:- ➤ "In the exercise of identification of missing links, socioeconomic data which forms TGAs are taken as background maps and also so many maps having different spatial & socioeconomic data with different scenarios have been prepared & used for the purpose of identification.	
		6.3 Identification of Missing Links within Corridor	➤ While identifying & analyzing the missing links within corridors, in almost all corridors same statement as bellow is used to explain the process used in identifying the missing links: "Based on this analysis, the consultant has tried to identify all missing links in Central Eastern Corridor. The possible number of missing links is exhaustively exercised on the map which consists of all the nodes, links and other topography features such as rivers, mountains etc." This doesn't explain the "how" question. After identifying the	➤ Comment accepted and modified accordingly.

Page No.	Reference	Description	Comment	Response
	Chapter 6: NEW MISSING LINKS WITHIN CORRIDOR AND BETWEEN CORRIDORS		major towns & the potential development areas, the document doesn't explain how it is analyzed & come up with the 195 missing links with 16,039 km. It also lacks the general explanation regarding where the missing links are? Is it on the main corridor? Is it between the main corridor & major towns? Is it between the main corridor & potential development areas...? Thus, detail explanation is needed regarding the mentioned points.	
		6.4(6.1) Priority of Missing Links	➤ Under the 1st paragraph it says "The consultant has proposed and analyzed the criterion to set priority for missing links. The multi criterion has been discussed with the <i>client</i> and the weights are assigned to each criterion." Instead of stating the discussion with ERA regarding the multi criteria selection & weight assignment; it is important to discuss the professional reasoning behind MCA & weight assignment. If needed minute of such discussions should be attached as annex	➤ Comment Accepted and modified.
		Comments On Missing Roads Link	➤ As can be seen from the map, Namraputh is located at the border point and there is existing road, Woito-Turmi-Omorate-Namraputh of which Turmi-Omorate-Namraputh is existing asphalt road	➤ Comment accepted and modified in the functional classification.

Page No.	Reference	Description	Comment	Response
			but not include under road class connecting border points ➤ In addition, even if Najo-Jarso-Begi-South Sudan is a missing link it should also be included under border routes functional classification	
131-	7. Identification of Gravel Roads to be Upgraded	7.1 Identification of Existing Gravel Roads for Analysis	➤ The road length to be upgraded (which is to be considered in the HDM 4 analysis) indicated in the Table 7-1 and paragraph under the same table is inconsistent. In the table it is indicated that the gravel road in the process of design for upgrading is 3272 and gravel road to be upgraded is 3476.9 whereas under second paragraph that the total gravel road identified for further analysis is 4762 out of which 1719km length of road is under design. Does this mean from road length indicated in the table to be upgraded (3476.9) there is a road section which is excluded? ➤ In the second paragraph it is stated that "The following table shows the list of Gravel roads which are identified for further analysis. Having all the above information the consultant has nominated 81 gravel roads of length about 4762 km." what are the criterias for selection of those roads? For example the first section Woto – Erbore is included whereas the second section Erbore – Turmi which is currently floated for tender.	➤ Comment Accepted and Corrected. ➤ Erbore – Turmi is include in the 2013 EC plan of ERA for construction works so that the consultant has excluded from the analysis of HDM-4 economic analysis model. ➤ Regarding the criteria, the selection of roads for HDM-4, the consultant has considered all existing gravel roads which are not included in the construction works of ERA.
		7.3.5 The Output or Result of HDM-	➤ Under Table 7-8; Strategies by the consultant to perform the analysis; It is indicated that the intervention	➤ Comment Accepted. Regarding Gravel Roads to be upgraded to Asphalt concrete, it is proposed to

Page No.	Reference	Description	Comment	Response
	to Asphalt Concrete, Rehabilitation and Upgrading of Asphalt Roads to Better Standard	4 Road Economic Analysis	for upgrading of gravel roads is upgrading two lanes gravel to two Asphalt concrete. Does it mean "...to two lanes Asphalt Concrete" or "two layer of asphalt concrete" as it is proposed for pavement reconstruction? If the second case is proposed is it really reasonable (the traffic load within 10 years demand double layer asphalt concrete? In our observation some of the roads proposed for upgrading to better standard Asphalt (which the consultant proposed 4 lanes asphalt concrete) are not required additional two lanes (or to upgrade to 4 lanes) rather as these roads (eg, Chanco – Derba, Modjo – Edjere – Ararti – Kesem, Alemgena - Butajira) are/will (if there is proposed development in the corridor) accommodating high traffic loading (not traffic volume) which are not congested because of the traffic types using the road they need improvement of the pavement thickness or pavement type (like introducing Macadam or change the pavement to rigid pavements. So what is the consultant interpretation of the HDM-4 output or you have accepted the output as it is what you have got from the software analysis?	two lanes and two layers Asphalt concrete. ➤ Regarding existing Asphalt roads upgrade to better standard roads, it is proposed to 4 lanes (and two layers) taking the traffic volume and traffic composition into consideration. If the client believes that some roads require Macadam or rigid pavement, it will be considered during detail stage.
		7.3.5.1 The Output of the First Strategic Analysis (Upgrading of	➤ In our observation some of the roads proposed for upgrading to better standard Asphalt (which the consultant proposed 4 lanes asphalt concrete) are not required	➤ Regarding existing Asphalt roads upgrade to better standard roads, it is proposed to 4 lanes (and two layers) taking the traffic volume and traffic composition into

Page No.	Reference	Description	Comment	Response
		Asphalt to Better Standard Roads)	additional two lanes (or to upgrade to 4 lanes) rather as these roads (eg, Chanco – Derba, Modjo – Edjere – Ararti – Kesem, Alemgena - Butajira) are/will (if there is proposed development in the corridor) accommodating high traffic loading (not traffic volume) which are not congested because of the traffic types using the road they need improvement of the pavement thickness or pavement type (like introducing Macadam or change the pavement to rigid pavements. So what is the consultant interpretation of the HDM-4 output or you have accepted the output as it is what you have got from the software analysis?	consideration. If the client believes that some roads require Macadam or rigid pavement, it will be considered and decided during detail Design stage.
	7. Identification of Gravel Roads to be Upgraded to Asphalt Concrete, Rehabilitation	7.3.5.3 The Output of the Third Strategic Analysis (Upgrading of Existing Gravel Roads to Asphalt Concrete)	➤ It is stated that “Under this strategy the consultant has proposed 84 existing gravel roads with the total length of 5,723.53km for economic analysis of HDM-4 Model” whereas on page 131 it is stated “Having all the above information, the consultant has nominated 81 gravel roads of length about 4762 km”. Please avoid such inconsistency in the document. ➤ In general, since is very critical document and to be communicated to higher officials and stakeholders, the document should be Clear, Self-Explanatory and the idea and figures in all sections, tables and paragraph shall be consistent. Furthermore the consultant needs to thoroughly review/scrutinize the analysis	➤ Comment Accepted and modified. Source of the data is included.

Page No.	Reference	Description	Comment	Response
	and Upgrading of Asphalt Roads to Better Standard		output/result with the actual scenario of the road, current and future development in the corridor and types of traffic using the roads. ➤ Besides please indicate the source of input data (Like; Economic and Financial Unit Cost for construction roads, Vehicle category and traffic growth rates...) of HDM-4 analysis.	
		Upgrading	➤ We have observed that some gravel roads are neither included under upgrading of gravel roads nor under Annex-IV-4 that shows Newly Identified Missing Links and their Implementation Plan. Example:- ○ Debretabor-Ibnat which is 30km ○ Arbaya Belesa - Guhala Belesa town ➤ Tselemt – Fiyelwuha	➤ Comment Noted: Debretabor-Ibnat is not in the list of ERA's gravel road, so to be included in the new missing links, Arbaya Belesa-Guhala Belesa town is included in the new missing link as Belese-Arba Tsegur Jun and Tselemt – Fiyelwuha is ongoing project under the name Maytseberi-Dima-Fiyelwuha-Tekeze
152-	8. Proposed 5 And 10 Year Implementation Plan	8.1 Proposed Yearly Plan for the next 10 Years	“The consultant has analyzed and determined the future expected performance growth rate in each type of intervention from the analysis of 21 years performance and specifically from the last 4 years implementation capacity of ERA.” Not clear why the Consultant used Past Performance Trend to Determine Expected Future Plan. It is well noted that there are different contributing factor for the results of past performance. In addition to this, as our Plan has to follow a principle of	Comment Noted. It is common practice to use past performance for planning the future. But still the consultant has proposed very ambitious and continuously increasing performance growth for the next 10 years. This could be seen in the proposed volume of the different interventions in the implementation plan.

Page No.	Reference	Description	Comment	Response
			Stretched Plan, instead of using Past performance trend it will be better to use Past Plan as a basis in determining our future plan.	
			➤ “The consultant has proposed 15%, 7.5%, 5% and 2% increment for Construction of link roads, Upgrading of link roads, Rehabilitation of Trunk roads and Construction of Expressway respectively.” The basis of the Consultant assumption to use the past performance increment trend is not clear. It misleads us if the focus area in the coming program period is different from the past years. The Consultant has assumed to use the same trend, as in the past 4 years, in terms of the volume of works in the different component.	➤ Comment noted. We have some information regarding government plan. It includes upgrading of all ERA’s gravel roads to Asphalt Concrete in the plan period. Expansion of new network to those inaccessible areas and construction of expressways in the main import and export corridor and existing trunk roads. So the implementation has revised and considered this information as an input.
		8.2 Last 10 years Financial Accomplishment and Estimated Budget for the next 10 Years	➤ The Consultant has used the 1999 to 2011 Years (EFY) Capital Budget of ERA to get the average annual growth rate of allocated budget to apply for future use. As the budget during the 1999 to 2002 are different or relatively low from GTP and if we consider them it will highly inflate the growth rate. Thus, it is better to focus only on the GTP period, EFY 2003 to 2012. ➤ In table 8-3, the consultant presented the 13 years capital budget of ERA while the table label says 21 years capital budget of ERA. Thus, correct the mistake and also show the 2012 capital budget allocated to ERA.	➤ Comment Accepted and modified accordingly. The financial plan has checked against the actual demand and implementation plan for the next 10 years. The GTP plan is reflected on the financial plan.

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			➤ In addition to the above, please note that the budgets used as a base for the next year's financial demand are not actual expenditure/accomplishment/ rather they are just approved budgets. In addition, these budgets do not express the actual demand because budget is constrained by government revenue generating capacity. Page 153. Hence, the financial forecast has to be based on actual demand (i.e. as per physical plan) and implementing capacity/ institutional/.	
155		3. Construction of Expressway	➤ Does the Consultant think that we can manage to start 5 New Expressway projects during the year 2021/22 while there is no any new Expressway project planned during the year 2022/23? ➤ Is Awash – Mieso and Mieso – Erer – Diredawa expressway projects considered as on-going projects as it is not shown under table 9.1? ➤ Please check the length of Chiro – Dire Dawa (132km), and the road section must be Chiro – Dengego as Dengego – Dire Dawa section of the road are already considered. ➤ Does the Consultant think D/Markos – Bahir Dar and Kombolcha – Mekele roads are less feasible as compared to some of the proposed expressway projects which are included/ considered in the 10 years plan?	➤ Comment noted and revision is made accordingly. ➤ Awash – Mieso and Mieso – Erer – Diredawa expressway projects are considered as pipeline projects and their priority are readjusted. ➤ Projects are listed and prioritized based on their NPV values and few readjustment is made considering existing plan of ERA.
		Table 9.1	➤ The average per km construction cost used for the Construction of New link roads looks high, which is	➤ Comment noted. The average cost of construction has considered the design and supervision cost and also consider right-of-way cost.

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	9. Projects for The 10 Years Master Plan And Costs	Average per km construction cost	about 30 million on average (478.4 billion birr vs. 16039km). ➤ Is the cost estimate at all components of the program considered right of way/compensation/ price escalation and supervision costs which are highly increasing from time to time?	
		4. Construction of New link road	From the figure we can realize that majority of the roads are planned to start in the 2nd five years, and the consultant has to check this	➤ Comment noted. Currently ERA's has so many ongoing projects and other GTP II projects planned for the next physical year. So according to the implementation capacity of the past plans, it is difficult to bring new identified projects in the first 5 year implementation period.
		Figure 9.8	➤ Only 1 completed project, Addis – Adama expressway project, is shown while it is planned to show projects in all components (not only expressway). Therefore, as there are other completed projects, it is better to exclude completed projects in the legend or include all	➤ Comment accepted and modified accordingly.
		General Chapter 9 on	➤ As seen from the implementation plan, the number of projects to be launched every year is as follows: 1. Rehabilitation 6 Projects – 2020/21 2 >> - 2021/22 No Project in -2022/23	➤ Comment noted. The consultant has prepared a draft plan which could be changed during the actual implementation of the master plan by considering so many other factors such as implementation capacity constraints, budget allocation, environmental etc

Page No.	Reference	Description	Comment	Response
			2 >> - 2023/24 2 >> - 2024/25 3 >> - 2025/26 3 >> - 2026/27 9 >> - 2027/28 6 >> - 2028/29 6 >> - 2029/30 2. Upgrading 40 Projects in - 2020/21 No Project -2021/22 3 >> - 2022/23 19 >> - 2023/24 No Project in -2024/25 10 projects in - 2025/26 32 >> - 2026/27 No project in -2027/28 24 projects - 2028/29 12 >> - 2029/30	
	9. Projects for The 10 Years Master Plan And Costs			

Page No.	Reference	Description	Comment	Response
			3. Missing Link 23 Projects in -2020/21 22 >> - 2021/22 No Project in -2022/23 63 Projects - 2023/24 No Project in -2024/25 10 Projects - 2025/26 80 >> - 2026/27 10 >> - 2027/28 5 >> - 2028/29 65 >> - 2029/30 ➤ As can be seen above, the proportion of projects in every year across the 10 years period is not proportional; even though the Consultant considered the projects that are at various stages of project cycle. So, please revise the implementation plan by looking at the trends of ERA – how many projects are handled every year at various stages of the project cycle.	

Page No.	Reference	Description	Comment	Response
164	10. Expected Impacts Of The Master Plan	10.1 Increase in Road Network Volume and Density	➤ Is the total Federal road network and Asphalt roads by 2029/30 are the same, 52900km? If so, it implies that in addition to the new asphalt roads which are planned to be constructed all the existing gravel roads will be upgraded to asphalt. But we can see from the document, proposed Upgrading Plan, it is not the case and need explanation. ➤ It is not clear how “All Weather Road Density” and “Federal Road Network Density” were calculated. Not sure on the Value of the Denominator the Consultant used to calculate the Density, area in sq. km. If it is 1.1 million sq. km the value is different which shows that the consultant used different value of area to calculate each density. Please note that total country area under Table 1.1, 1.3 and 2.6 in the report are 1.129 million sq. km, 1.125 million sq. km and 1.147 million sq. km respectively, which are different in the three cases. Need to check or give some explanation. ➤ Table 10 -1 shows that the current road density per 1000 sq km of area is 126.3km. But as of the 22 years assessment of RSDP; with total road network of 144 027.8 km (including URRAP and municipality roads); the density per 1000 sq km is 130.9. Could you please check it again so that it will be consistent with RSDP report?	➤ Comment accepted and modified accordingly. ➤ The consultant will use uniform Land area for Ethiopia in all calculation. ➤ All weather road density considers Federal + Regional + URRAP roads while Federal Road density consider only Federal Roads
			➤ It is good to elaborate more on the methodology used to calculate the	➤ Comment accepted and modified. The methodology is included. The

Page No.	Reference	Description	Comment	Response
		10.2 Improved in Mean Distance, Travel time from all-weather roads and % of area farther than 3Km and 5 Km	Mean Distance and Travel Time Indicator. ➤ Why do the consultant measure accessibility in 3km mean distance since the widely acknowledged indicator is 2 km mean distance from all-weather roads? Is there any logic or experience behind changing from 2km to 3km? ➤ What is the difference between the two remarks mentioned under table 10.2, last column of the table? "Assuming 232,000 km of roads in 2029/30" vs. "Including Woreda and Urban Roads" ➤ In Table 10 -2, the consultant estimated the accessibility indicators by including the urban roads. As we discussed in the web conference, we should totally avoid urban roads from accessibility indicators (even though we kept urban roads for measuring road density indicators; which of course needs discussion and recommendation from the consultant) since there is no urban dweller that travels 3 or 5 km to reach all weather road. In addition, does the 232,000 km forecast of road network also include urban roads?	mean distance will be calculated for 2km and 5km. ➤ The two remarks are almost the same ➤ Urban roads will be excluded in the accessibility analysis. ➤ The total forecast includes Urban roads
			➤ Need to have some few notes or explanation on the methodology the Consultant used to reach to the figures	➤ Comment accepted and modified.

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	10 Expected Impacts Of The Master Plan			
	Annex IV. Implementation Plan	Priority ranking	Is there any exercise made by the Consultant to balance the difference/ imbalance among the different regions other than the normal priority ranking used in projects (Equity among Regions).	➤ Comment noted. The priority ranking has elements or parameters to privilege equity among regions. This includes Federal road density.