Consultancy Services for the

Due Diligence and Options Analysis

for the proposed Mindanao Transport Connectivity Improvement Project

Draft Environment and Social Impact Assessment (ESIA) – Annexes

Version 2.3 | May 24, 2024

LIST OF ANNEXES

Annex 1. Detailed Road Works for Main Corridor Rehabilitation

No.	ROAD WORKS	LENGTH	UNIT
	Road Widening from 2/3- to 4-lanes		
1	Road Widening	8.23	kilometers
	Rehabilitation		
2	Re-blocking of concrete	9.66	kilometers
3	Road Shoulder	46.71	kilometers
4	Side Ditch / Lined Ditch	72.148	kilometers
5	Side Walks	0.495	kilometers
6	Turnouts	0.495	kilometers
7	Slope Protection	4.495	kilometers
	Road Safety		
1	Refuge Island	252	count *(4 directions)*
2	Road Side Barrier / Crash Barrier / Guardrail	57.29	kilometers
4	Improve Curve Delineation	81.61	kilometers
6	Road Lighting	9,978	count
7	Maintenance Marker Post	992	count
8	Traffic Light	1	count
9	Traffic Sign	16,503	count
10	Pavement Marking	421.12	kilometers
11	Chevron Sign	10,202	count
12	Pedestrian Overpass	90	count
13	Rumble Strips	14,100	meters
14	Median barrier	240	meters

Annex 2. Inventory of Road Works in the Main Corridor

ROAD WIDENING								
No.	**Chainage**		**No. of Lanes**	**Length (km)**	**No. of Lanes to be Widened**	**Area (sq. m)**	**Engineering Work Details**	**Structures Affected**
Existing 3-lane; Mountainous								
1	1426+550	1427+721	3	1.21	1	4053.5	Scope of Work -Remove concrete paved shoulder -Remove side ditch -Concrete widening on right side Condition -Mountainous	22
	1643+115	1643+203	3	0.088	1	294.8	Scope of Work -Concrete widening of left sides -Resurfacing (Type 1) Condition -Rolling	11
	1643+398	1643+504	3	0.106	1	355.1	Scope of Work -Concrete widening of right sides -Resurfacing (Type 1) Condition -Rolling	6
Sub-Total						**4703.4**		
Existing 3-lane; Flat								
2	1443+709	1443+853	3	0.144	1	482.4	Scope of Work -Concrete widening of 1-lane -Reconstruction of 2-lanes PCCP -Resurfacing (Type 2) Condition -Flat	10
	1554+272	1554+853	3	0.581	1	1946.35	Scope of Work -Concrete widening of left side -Resurfacing (Type 1) Condition -Flat	4
	1613+130	1613+180	3	0.05	1	167.5	Scope of Work -Concrete widening on right side -Resurfacing (Type 1) Condition Flat	0
	1634+960	1635+646	3	0.681	1	2281.35	Scope of Work -Concrete widening on right side -Resurfacing (Type 1) Condition Flat	6
	1612+808	1612+858	3	0.05	1	167.5	Scope of Work -Concrete widening on right side -Resurfacing (Type 1) Condition Flat	
Sub-Total						**4877.6**		
Existing 2-lane; Mountainous								
3	1588+532	1591+000	2	1.699	2	11383.3	Scope of Work -Concrete widening of both sides -Resurfacing (Type 1) -Ongoing road widening	25

ROAD WIDENING								
No.	**Chainage**		**No. of Lanes**	**Length (km)**	**No. of Lanes to be Widened**	**Area (sq. m)**	**Engineering Work Details**	**Structures Affected**
							project at right side of Sta. 1589 - 1590 (1 km) Condition -Mountainous	
	1591+000	1591+589	2	0.589	2	3946.3	Scope of Work -Concrete widening of both sides -Resurfacing (Type 1) Condition -Mountainous	20
	1481+783	1482+050	2	0.27	2	1809	Scope of Work -Concrete widening of both sides -Resurfacing (Type 2) Condition Rolling	15
	1482+216	1482+443	2	0.227	2	1520.9	Scope of Work -Concrete widening of both sides -Resurfacing (Type 1) Condition Rolling	0
	1482+443	1482+786	2	0.343	2	2298.1	Scope of Work -Concrete widening of both sides -Resurfacing (Type 1) Condition Mountainous	11
	1638+588	1639+000	2	0.408	2	2733.6	Scope of Work -Remove concrete paved shoulder -Concrete widening of both sides -Resurfacing (Type 1) Condition -Rolling	16
Sub-Total						**23,691.20**		
Existing 2-lane; Flat								
4	1451+562	1451+806	2	0.244	2	1634.8	Scope of Work -Remove concrete paved shoulder on both sides -Concrete widening of both sides -Resurfacing (Type 1) Condition -Flat	20
	1458+568	1458+608	2	0.04	2	268	Scope of Work -Concrete widening of both sides -Resurfacing (Type 1) Condition -Flat	4
	1482+786	1483+623	2	0.836	2	5601.2	Scope of Work -Concrete widening of both sides -Resurfacing (Type 2) Condition Flat	18
	1601+394	1601+545	2	0.151	2	1011.7	Scope of Work -Concrete widening of both	2

ROAD WIDENING								
No.	**Chainage**		**No. of Lanes**	**Length (km)**	**No. of Lanes to be Widened**	**Area (sq. m)**	**Engineering Work Details**	**Structures Affected**
							sides -Resurfacing (Type 1) Condition -Flat	
	1601+566	1601+694	2	0.128	2	857.6	Scope of Work -Concrete widening of both sides -Resurfacing (Type 1) Condition -Flat	6
	1673+220	1673+605	2	0.385	2	2579.5	Lacking SLD	10
Sub-Total						**11952.8**		
Total				**8.23**		**45,225**		

REBLOCKING							
No.	**Chainage**		**length (km)**	**No. of Defective Lane/s**	**Area (sq. m)**	**Eng work details (which lanes)**	**Remarks**
1	1425+200	1425+600	0.4	2	2,686.4	Reconstruction Type 1: inner lanes LR	Based on visual inspection
2	1425+350	1425+400	0.05	1.00	167.5	Reconstruction Type 1: inner lane R	
3	Sta.1425+600	Sta.1425+700	0.1	1	335.0	Reconstruction Type 1: inner lane L	
4	Sta.1429+400	Sta.1429+700	0.3	2	2,010.0	Reconstruction Type 2: inner lanes LR	
5	Sta.1435+200	Sta.1435+300	0.1	1	335.0	Reconstruction Type 2: inner lane L	
6	Sta.1435+500	Sta.1435+600	0.1	2	670.0	Reconstruction Type 2: inner lanes LR	
7	Sta.1435+340	Sta.1435+990	0.65	2	4,355.0	Reconstruction Type 2: inner lanes LR	
8	Sta.1437+420	Sta.1437+480	0.06	2	402.0	Reconstruction Type 2: inner lanes LR	
9	Sta.1443+100	Sta.1443+220	0.12	2	804.0	Reconstruction Type 2: inner lanes LR	
10	Sta.1443+450	Sta.1443+500	0.05	2	335.0	Reconstruction Type 2: inner lanes LR	
11	Sta.1443+750	Sta.1444+50	0.3	2	2,010.0	Reconstruction Type 2: inner lanes LR	
12	Sta.1452+500	Sta.1452+750	0.25	2	1,675.0	Reconstruction Type 2: inner lanes LR	
13	Sta.1453+700	Sta.1453+800	0.1	2	670.0	Reconstruction Type 2: inner lanes LR	
14	Sta.1490+100	Sta.1490+200	0.1	2	670.0	Reconstruction Type 2: inner lanes LR	
15	Sta.1491+500	Sta.1491+560	0.06	2	402.0	Reconstruction Type 2: inner lanes LR	
16	Sta.1518+100	Sta.1518+200	0.1	1	335.0	Reconstruction Type 2: inner lane R	
17	Sta.1519+200	Sta.1521+0	1.8	2	12,060.0	Reconstruction Type 2: inner lanes LR	
18	Sta.1521+100	Sta.1521+900	0.8	2	5,360.0	Reconstruction Type 2: inner lanes LR	
19	Sta.1522+800	Sta.1522+850	0.05	1	167.5	Reconstruction Type 2: inner lane R	
20	Sta.1524+700	Sta.1524+800	0.1	1	335.0	Reconstruction Type 2: inner lane L	
21	Sta.1588+200	Sta.1588+800	0.6	2	4,020.0	Reconstruction Type 2: inner lanes LR	
22	Sta.1597+0	Sta.1597+40	0.04	1	134.0	Reconstruction Type 2: inner lane L	
23	Sta.1598+700	Sta.1598+710	0.01	1	33.5	Reconstruction Type 2: inner lane R	
24	Sta.1603+400	Sta.1603+450	0.05	1	167.5	Reconstruction Type 2: inner lane L	
25	Sta.1603+800	Sta.1603+820	0.02	1	67.0	Reconstruction Type 2: inner lane L	
26	Sta.1614+100	Sta.1614+135	0.04	2	268.0	Reconstruction Type 2: inner lanes LR	
27	Sta.1615+300	Sta.1615+380	0.08	3	804.0	Reconstruction Type 2: inner L, outer LR	
28	Sta.1616+300	Sta.1616+360	0.06	4	804.0	Reconstruction Type 2: inner LR, outer LR	
29	Sta.1621+700	Sta.1623+300	1.6	2	10,720.0	Reconstruction Type 2: inner lanes LR	
30	Sta.1631+550	Sta.1631+800	0.25	1	837.5	Reconstruction Type 2: inner lane L	
31	Sta.1632+100	Sta.1632+600	0.5	3	5,025.0	Reconstruction Type 2: inner LR, outer L	
32	Sta.1633+200	Sta.1633+900	0.7	2	4,690.0	Reconstruction Type 2: outer LR	
33	Sta.1635+685	Sta.1635+700	0.02	1	67.0	Reconstruction Type 2: inner lane R	
34	Sta.1638+800	Sta.1638+900	0.1	2	670.0	Reconstruction Type 2: inner lane LR	
35	Sta.1639+20	Sta.1639+800	0.78	4	10,452.0	Reconstruction Type 2: inner LR, outer LR	
36	Sta.1642+450	Sta.1642+500	0.05	1	167.5	Reconstruction Type 2: inner lane L	
37	Sta.1644+475	Sta.1644+500	0.02	1	67.0	Reconstruction Type 2: inner lane R	
38	Sta.1647+200	Sta.1647+800	0.6	3	6,030.0	Reconstruction Type 2: inner L, outer LR	
39	Sta.1652+670	Sta.1652+700	0.03	1	100.5	Reconstruction Type 2: inner lane R	
40	Sta.1653+350	Sta.1653+400	0.05	1	167.5	Reconstruction Type 2: inner lane L	
41	Sta.1656+570	Sta.1656+600	0.03	1	100.5	Reconstruction Type 2: inner lane L	

REBLOCKING							
No.	**Chainage**		**length (km)**	**No. of Defective Lane/s**	**Area (sq. m)**	**Eng work details (which lanes)**	**Remarks**
42	Sta.1659+970	Sta.1660+800	0.83	2	5,561.0	Reconstruction Type 2: inner R, outer R	
43	Sta.1662+646	Sta.1662+700	0.05	1	167.5	Reconstruction Type 2: outer R	
44	Sta.1666+385	Sta.1666+400	0.02	1	67.0	Reconstruction Type 2: outer L	
45	Sta.1670+691	Sta.1670+700	0.01	1	33.5	Reconstruction Type 2: inner L	
46	Sta.1673+400	Sta.1673+500	0.1	2	670.0	Reconstruction Type 2: inner lane LR	
47	Sta.1679+0	Sta.1679+660	0.66	2	4,422.0	Reconstruction Type 2: inner lane LR	
48	Sta.1686+0	Sta.1687+0	1	4	13,400.0	Reconstruction Type 2: inner LR, middle LR	
49	Sta.1687+0	Sta.1687+900	0.9	4	12,060.0	Reconstruction Type 2: inner L, middle LR, outer R	
50	Sta.1534+891	Sta.1534+900	0.01	1	33.5	Reconstruction Type 2: inner L	
51	Sta.1541+480	Sta.1541+500	0.02	1	67.0	Reconstruction Type 2: inner R	
52	Sta.1543+255	Sta.1543+300	0.05	1	167.5	Reconstruction Type 2: middle R	
53	Sta.1546+170	Sta.1548+100	1.93	2	12,931.0	Reconstruction Type 2: inner LR	
54	Sta.1551+100	Sta.1551+400	0.3	2	2,010.0	Reconstruction Type 2: inner LR	
55	Sta.1552+670	Sta.1552+700	0.03	2	201.0	Reconstruction Type 2: inner LR	
56	Sta.1553+300	Sta.1553+500	0.2	2	1,340.0	Reconstruction Type 2: inner R, middle R	
57	Sta.1554+755	Sta.1554+800	0.05	2	335.0	Reconstruction Type 2: inner LR	
58	Sta.1555+100	Sta.1555+900	0.8	2	5,360.0	Reconstruction Type 2: inner LR	
59	Sta.1557+100	Sta.1557+500	0.4	2	2,680.0	Reconstruction Type 2: inner LR	
60	Sta.1558+100	Sta.1558+200	0.1	2	670.0	Reconstruction Type 2: inner R, middle R	
61	Sta.1560+900	Sta.1561+700	0.8	2	5,360.0	Reconstruction Type 2: inner LR	
62	Sta.1562+500	Sta.1562+900	0.4	2	2,680.0	Reconstruction Type 2: inner LR	
63	Sta.1563+0	Sta.1563+600	0.6	2	4,020.0	Reconstruction Type 2: inner LR	
64	Sta.1563+900	Sta.1564+0	0.1	2	670.0	Reconstruction Type 2: inner LR	
65	Sta.1565+900	Sta.1566+0	0.1	1	335.0	Reconstruction Type 1: inner L	
66	Sta.1567+200	Sta.1567+600	0.4	1	1,340.0	Reconstruction Type 1: inner L	
67	Sta.1569+700	Sta.1570+800	1.1	2	7,370.0	Reconstruction Type 2: inner LR	
68	Sta.1571+500	Sta.1572+0	0.5	3	5,025.0	Reconstruction Type 2: inner R, middle R, outer R	
69	Sta.1575+700	Sta.1577+0	1.3	2	8,710.0	Reconstruction Type 2: inner LR	
70	Sta.1579+400	Sta.1580+900	1.5	3	15,075.0	Reconstruction Type 2: inner LR, middle R	
71	Sta.1584+200	Sta.1585+0	0.8	4	10,720.0	Reconstruction Type 2: inner LR, middle LR	
72	Sta.1585+100	Sta.1585+800	0.7	4	9,380.0	Reconstruction Type 2: inner LR, middle LR	
73	Sta.1586+100	Sta.1587+0	0.9	4	12,060.0	Reconstruction Type 2: inner LR, middle LR	
74	Sta.1587+100	Sta.1587+500	0.4	4	5,360.0	Reconstruction Type 2: inner LR, middle LR	
75	Sta.1588+0	Sta.1589+0	1	4	13,400.0	Reconstruction Type 1 and 2: inner LR Reconstruction Type 1 and 2: middle LR	
76	Sta.1589+0	Sta.1590+0	1	2	6,700.0	Reconstruction Type 2: inner LR	
77	Sta.1590+0	Sta.1590+900	0.9	2	6,030.0	Reconstruction Type 2: inner LR	
78	Sta.1591+300	Sta.1591+400	0.1	2	670.0	Reconstruction Type 2: inner LR	
79	Sta.1592+600	Sta.1593+0	0.4	2	2,680.0	Reconstruction Type 2: inner LR	
80	Sta.1595+0	Sta.1596+0	1	3	10,050.0	Reconstruction Type 1 and 2: inner LR Reconstruction Type 2: outer R	
81	Sta.1596+100	Sta.1597+0	0.9	3	9,045.0	Reconstruction Type 2: inner LR, outer R	
82	Sta.1597+0	Sta.1598+0	1	2	6,700.0	Reconstruction Type 2: inner LR	
83	Sta.1598+200	Sta.1598+900	0.7	2	4,690.0	Reconstruction Type 2: inner R, outer L	
84	Sta.1599+500	Sta.1601+400	1.9	4	25,460.0	Reconstruction Type 2: inner LR, outer LR	
85	Sta.1601+800	Sta.1602+0	0.2	2	1,340.0	Reconstruction Type 2: inner LR	
86	Sta.1602+200	Sta.1604+700	2.5	4	33,500.0	Reconstruction Type 2: inner LR, outer LR	
87	Sta.1608+500	Sta.1609+100	0.6	2	4,020.0	Reconstruction Type 2: inner R, outer R	
88	Sta.1608+500	Sta.1610+900	2.4	4	32,160.0	Reconstruction Type 2: inner LR, outer LR	
89	Sta.1611+400	Sta.1611+500	0.1	2	670.0	Reconstruction Type 2: inner R, outer L	
90	Sta.1612+170	Sta.1612+200	0.03	3	301.5	Reconstruction Type 2: inner LR, outer R	
91	Sta.1612+350	Sta.1612+400	0.05	2	335.0	Reconstruction Type 2: inner R, outer R	

REBLOCKING							
No.	**Chainage**		**length (km)**	**No. of Defective Lane/s**	**Area (sq. m)**	**Eng work details (which lanes)**	**Remarks**
92	Sta.1613+440	Sta.1613+500	0.06	1	201.0	Reconstruction Type 2: outer R	
93	Sta.1616+0	Sta.1616+400	0.4	2	2,680.0	Reconstruction Type 2: inner R. outer R	
94	Sta.1617+0	Sta.1618+500	1.5	2	10,050.0	Reconstruction Type 2: inner R. outer R	
95	Sta.1621+100	Sta.1621+600	0.5	3	5,025.0	Reconstruction Type 2: inner L, outer LR	
96	Sta.1622+300	Sta.1622+700	0.4	4	5,360.0	Reconstruction Type 2: inner LR, outer LR	
97	Sta.1622+900	Sta.1622+980	0.08	2	536.0	Reconstruction Type 2: inner L, outer L	
98	Sta.1623+500	Sta.1624+0	0.5	4	6,700.0	Reconstruction Type 2: inner LR, outer LR	
99	Sta.1628+100	Sta.1628+900	0.8	3	8,040.0	Reconstruction Type 2: inner LR, outer L	
100	Sta.1629+591	Sta.1629+600	0.01	2	67.0	Reconstruction Type 2: inner L, outer L	
101	Sta.1631+391	Sta.1631+400	0.01	1	33.5	Reconstruction Type 2: outer L	
102	Sta.1637+800	Sta.1640+500	2.7	2	18,090.0	Reconstruction Type 2: inner LR	
103	Sta.1645+691	Sta.1645+700	0.01	2	67.0	Reconstruction Type 2: inner LR	
Total			**50.03**		**446,058.9**		

ROAD SHOULDER							
No.	**Chainage (From)**	**Chainage (To)**	**length (linear meter)**	**Side**	**No. of Sides**	**Area (sq. m)**	**Eng work details**
1	1425+000	1426+058	1058	Left	1	2645	2.5m width, 28 cm thickness concrete shoulder
2	1425+000	1425+223	223	Right	1	557.5	
3	1426+000	1426 + 055	55	Right	1	137.5	
4	1426+546	1427 + 757	1211	Left	1	3027.5	
5	1426+546	1427 + 757	1211	Right	1	3027.5	
6	1431 + 538	1432 +851	1313	Left	1	3282.5	
7	1432 + 538	1433 +851	1313	Right	1	3282.5	
8	1437 + 425	1439 + 867	2442	Left	1	6105	
9	1437 + 425	1439 + 867	2442	Right	1	6105	
10	1443 + 707	1443 + 856	149	Left	1	372.5	
11	1443 + 707	1443 + 856	149	Right	1	372.5	
12	1445 + 039	1445 +310	271	Left	1	677.5	
13	1445 + 332	1446 + 313	981	Right	1	2452.5	
14	1446 + 003	1446 + 177	174	Left	1	435	
15	1446 +513	1447 + 932	1419	Left	1	3547.5	
16	1446 + 949	1448 + 445	1496	Right	1	3740	
17	1448 + 158	1448 + 431	273	Left	1	682.5	
18	1448 + 922	1449 + 633	711	Right	1	1777.5	
19	1448 + 922	1449 + 633	711	Left	1	1777.5	
20	1451 + 559	1451 + 804	245	Right	1	612.5	
21	1451 + 559	1451 + 804	245	Left	1	612.5	
22	1454 + 789	1456 + 12	1223	Left	1	3057.5	
23	1454 + 789	1456 + 12	1223	Right	1	3057.5	
24	1458 + 569	1458 + 612	43	Left	1	107.5	
25	1458 + 569	1458 + 612	43	Right	1	107.5	
26	1461 + 284	1463 + 87	1803	Left	1	4507.5	
27	1461 + 284	1463 + 87	1803	Right	1	4507.5	
28	1463 + 813	1463 + 857	44	Left	1	110	
29	1463 + 813	1463 + 857	44	Right	1	110	
30	1469 + 797	1469 + 944	147	Left	1	367.5	
31	1469 + 797	1469 + 944	147	Right	1	367.5	
32	1471 + 138	1471 + 380	242	Left	1	605	
33	1471 + 138	1471 + 380	242	Right	1	605	
34	1473 + 450	1475 + 532	2082	Left	1	5205	
35	1473 + 450	1475 + 532	2082	Right	1	5205	
36	1481 + 785	1482 + 51	266	Left	1	665	
37	1481 + 785	1482 + 51	266	Right	1	665	
38	1482 + 217	1483 + 624	1407	Left	1	3517.5	
39	1482 + 217	1483 + 624	1407	Right	1	3517.5	
40	1486 + 348	1487 + 298	950	Left	1	2375	
41	1486 + 348	1487 + 298	950	Right	1	2375	
42	1488 + 000	1488 + 124	124	Right	1	310	
43	1500 + 509	1500 + 975	466	Left	1	1165	
44	1500 + 509	1500 + 975	466	Right	1	1165	

ROAD SHOULDER							
No.	**Chainage (From)**	**Chainage (To)**	**length (linear meter)**	**Side**	**No. of Sides**	**Area (sq. m)**	**Eng work details**
45	1503 + 397	1503 + 728	331	Left	1	827.5	
46	1503 + 397	1503 + 728	331	Right	1	827.5	
47	1504 + 064	1506 + 289	2225	Right	1	5562.5	
48	1504 + 064	1507 + 23	2959	Left	1	7397.5	
49	1506 + 659	1507 + 81	422	Right	1	1055	
50	1509 + 879	1510 + 004	125	Left	1	312.5	
51	1512 + 000	1512 + 061	61	Right	1	152.5	
52	1512 + 935	1512 + 992	57	Left	1	142.5	
53	1513 + 000	1513 + 743	743	Left	1	1857.5	
54	1517 + 000	1518 + 764	1764	Left	1	4410	
55	1517 + 000	1518 + 764	1764	Right	1	4410	
56	1523 + 077	1524 + 000	923	Left	1	2307.5	
57	1523 + 077	1524 + 000	923	Right	1	2307.5	
58	1524 + 256	1525 + 202	946	Left	1	2365	
59	1524 + 256	1525 + 202	946	Right	1	2365	
60	1527 + 568	1528 + 477	909	Left	1	2272.5	
61	1527 + 568	1528 + 477	909	Right	1	2272.5	
62	1529 + 593	1531 + 528	1935	Left	1	4837.5	
63	1529 + 593	1531 + 528	1935	Right	1	4837.5	
64	1532 + 347	1533 + 159	812	Left	1	2030	
65	1533 + 435	1533 + 540	105	Right	1	262.5	
66	1533 + 701	1533 + 906	205	Right	1	512.5	
67	1535 + 372	1536 + 403	1031	Right	1	2577.5	
68	1536 + 000	1536 + 403	403	Left	1	1007.5	
69	1537 + 267	1539 + 000	1733	Left	1	4332.5	
70	1537 + 267	1539 + 000	1733	Right	1	4332.5	
71	1539 + 766	1540 + 000	234	Left	1	585	
72	1539 + 766	1540 + 000	234	Right	1	585	
73	1543 + 000	1544 + 000	1000	Left	1	2500	
74	1543 + 000	1544 + 000	1000	Right	1	2500	
75	1552 + 000	1559 + 000	7000	Left	1	17500	
76	1552 + 000	1559 + 000	7000	Right	1	17500	
77	1560 + 238	1563 + 502	3264	Left	1	8160	
78	1560 + 238	1563 + 502	3264	Right	1	8160	
79	1564 + 539	1564 + 991	452	Left	1	1130	
80	1564 + 539	1564 + 991	452	Right	1	1130	
81	1571 + 000	1572 + 000	1000	Left	1	2500	
82	1571 + 000	1572 + 000	1000	Right	1	2500	
83	1573 + 593	1577 + 734	4141	Left	1	10352.5	
84	1573 + 593	1577 + 734	4141	Right	1	10352.5	
85	1581 + 954	1583 + 003	1049	Left	1	2622.5	
86	1581 + 954	1583 + 003	1049	Right	1	2622.5	
87	1592 + 678	1593 + 316	638	Left	1	1595	
88	1592 + 678	1593 + 316	638	Right	1	1595	
89	1593 + 348	1593 + 638	290	Left	1	725	
90	1593 + 348	1593 + 638	290	Right	1	725	
91	1601 + 919	1603 + 056	1137	Left	1	2842.5	
92	1601 + 919	1603 + 056	1137	Right	1	2842.5	
93	1612 + 806	1612 + 860	54	Left	1	135	
94	1612 + 806	1612 + 860	54	Right	1	135	
95	1613 + 132	1613 + 180	48	Left	1	120	
96	1613 + 132	1613 + 180	48	Right	1	120	
97	1634 + 954	1635 + 645	691	Left	1	1727.5	
98	1634 + 954	1635 + 645	691	Right	1	1727.5	
99	1638 + 584	1639 + 000	416	Left	1	1040	
100	1638 + 584	1639 + 000	416	Right	1	1040	
101	1639+ 019	1640 +000	981	Left	1	2452.5	
102	1639+ 019	1640 +000	681	Right	1	1702.5	
103	1643 + 000	1643 + 398	398	Left	1	995	
104	1643 + 000	1643 + 398	398	Right	1	995	
105	1643 + 398	1643 + 504	106	Left	1	265	
106	1643 + 398	1643 + 504	106	Right	1	265	
107	1655 + 145	1655 + 298	153	Left	1	382.5	
108	1655 + 146	1655 + 389	243	Right	1	607.5	
109	1655 + 381	1655 + 579	198	Left	1	495	
110	1655 + 489	1655 + 580	91	right	1	227.5	
111	1673 + 221	1673 + 607	386	Left	1	965	
112	1673 + 222	1673 + 597	375	right	1	937.5	

ROAD SHOULDER							
No.	**Chainage (From)**	**Chainage (To)**	**length (linear meter)**	**Side**	**No. of Sides**	**Area (sq. m)**	**Eng work details**
113	1684 + 000	1684 + 886	886	Left	1	2215	
114	1684 + 000	1685 + 882	882	right	1	2205	
115	1692 + 574	1692 + 757	183	Left	1	457.5	
116	1692 + 576	1696 + 096	3520	right	1	8800	
117	1692 + 758	1696 + 841	4083	Left	1	10207.5	
118	1696 + 172	1696 + 874	702	right	1	1755	
119	1697 + 643	1697 + 674	31	Right	1	77.5	
120	1697 + 759	1697 + 825	66	Left	1	165	
121	1697 + 826	1699 + 072	1246	Right	1	3115	
122	1697 + 940	1698 + 063	123	Left	1	307.5	
123	1699 + 034	1699 + 595	561	Left	1	1402.5	
124	1699 + 827	1700 + 307	480	Left	1	1200	
125	1699 + 913	1700 + 135	222	Right	1	555	
126	1700 + 368	1700 + 389	21	Left	1	52.5	
127	1700 + 674	1700 + 883	209	Left	1	522.5	
128	1700 + 873	1700 + 979	106	Right	1	265	
129	1701 + 91	1702 + 32	909	Right	1	2272.5	
130	1701 + 112	1702 + 246	1134	Left	1	2835	
131	1513 + 136	1513 + 420	284	Left	1	710	
132	1513 + 390	1513 + 700	310	Right	1	775	
133	1520 + 109	1520 + 789	680	Left	1	1700	
134	1528 + 755	1528 + 860	105	Left	1	262.5	
135	1528 + 769	1529 + 467	698	Right	1	1745	
136	1530 + 004	1530 + 307	303	Right	1	757.5	
137	1530 + 116	1530 + 277	161	Left	1	402.5	
138	1530 + 749	1531 + 058	309	Right	1	772.5	
139	1531 + 12	1531 + 246	234	Left	1	585	
140	1535 + 414	1536 + 386	972	Right	1	2430	
141	1536 + 373	1537 + 000	627	Left	1	1567.5	
142	1540 + 048	1540 + 249	201	Left	1	502.5	
143	1542 + 588	1542 + 848	260	Right	1	650	
144	1549 + 499	1550 + 209	710	Right	1	1775	
145	1549 + 558	1550 + 208	650	Left	1	1625	
146	1554 + 354	1554 + 856	502	Left	1	1255	
147	1554 + 360	1554 + 861	501	Right	1	1252.5	
148	1556 + 747	1556 + 945	198	Right	1	495	
149	1556 + 878	1557 + 288	410	Left	1	1025	
150	1557 + 087	1557 + 179	92	Right	1	230	
151	1557 + 211	1557 + 526	315	Right	1	787.5	
152	1557 + 689	1557 + 725	36	Right	1	90	
153	1557 + 869	1558 + 217	348	Right	1	870	
154	1561 + 138	1562 + 81	943	Left	1	2357.5	
155	1562 + 464	1562 + 743	279	Right	1	697.5	
156	1562 + 560	1562 + 609	49	Left	1	122.5	
157	1562 + 883	1563 + 115	232	Right	1	580	
158	1563 + 007	1563 + 270	263	Left	1	657.5	
159	1563 + 312	1563 + 450	138	Right	1	345	
160	1563 + 381	1563 + 417	36	Left	1	90	
161	1564 + 010	1564 + 064	54	Right	1	135	
162	1564 + 307	1564 + 403	96	Left	1	240	
163	1564 + 333	1564 + 356	23	Right	1	57.5	
164	1564 + 434	1564 + 459	25	Right	1	62.5	
165	1565 + 642	1566 + 291	649	Left	1	1622.5	
166	1566 + 009	1566 + 293	284	Right	1	710	
167	1566 + 416	1567 + 127	1711	Left	1	4277.5	
168	1566 + 430	1567 + 075	645	Right	1	1612.5	
169	1568 + 037	1568 + 183	146	Left	1	365	
170	1568 + 240	1568 + 444	204	Left	1	510	
171	1572 + 030	1572 + 293	263	Right	1	657.5	
172	1572 + 031	1575 + 429	3398	Left	1	8495	
173	1572 + 420	1578 + 000	5580	Right	1	13950	
174	1575 + 510	1578 + 000	2490	Left	1	6225	
175	1575 + 510	1578 + 000	2490	Right	1	6225	
176	1581 + 415	1583 + 000	1585	Left	1	3962.5	
177			1585	Right	1	3962.5	
178	1588 + 539	1591 + 587	3048	Left	1	7620	
179			3048	Right	1	7620	
180	1601 + 390	1601 + 544	154	Right	1	385	

ROAD SHOULDER							
No.	Chainage (From)	Chainage (To)	length (linear meter)	Side	No. of Sides	Area (sq. m)	Eng work details
181	1601 + 393	1601 + 547	154	Left	1	385	
182	1601 + 561	1601 + 690	129	Right	1	322.5	
183	1601 + 565	1601 + 690	125	Left	1	312.5	
184	1613 + 537	1616 + 453	2916	Left	1	7290	
185	1614 + 128	1615 + 179	1051	Right	1	2627.5	
186	1615 + 393	1616 + 451	1058	Right	1	2645	
187	1625 + 000	1626 + 375	1375	Right	1	3437.5	
188	1625 + 006	1625 + 725	719	Left	1	1797.5	
189	1626 + 045	1626 + 390	345	Left	1	862.5	
190	1638 + 000	1639 + 000	1000	Right	1	2500	
191	1638 + 000	1639 + 918	1918	Left	1	4795	
192	1643 + 000	1649 + 166	6166	Left	1	15415	
193	1643 + 000	1649 + 886	6886	Right	1	17215	
194	1649 + 220	1649 + 720	500	Left	1	1250	
195	1649 + 980	1650 + 181	201	Right	1	502.5	
196	1649 + 979	1650 + 100	121	Left	1	302.5	
197	1650 + 113	1650 + 437	1537	Right	1	3842.5	
198	1650 + 722	1651 + 87	1929	Right	1	4822.5	
199	1651 + 286	1651 + 702	1365	Right	1	3412.5	
200	1651 + 449	1654 + 924	3475	Left	1	8687.5	
201	1654 + 761	1655 + 000	1894	Right	1	4735	
Total			**197.29**			**493,220.00**	

SIDE WALKS						
No.	Chainage	School	Length (m)	Side	Total Side Length (m)	Area (sq. m)
Cagayan de Oro (Puerto - Davao City (Ulas)						
1	1445 + 715	Dicklum Elementary School	15	2	30	45
2	1447 + 380	Manolo Fortich National High School	15	2	30	45
3	1447 + 560	Manolo Fortich Central Elementary School	15	2	30	45
4	1455 + 730	Dalirig Elementary School	15	2	30	45
5	1462 + 330	Maluko Elementary School	15	2	30	45
6	1470 + 920	San Vicente National High School	15	2	30	45
7	1474 + 425	Kisolon Central Elementary School	15	2	30	45
8	1486 + 660	Impalutao Integrated School	15	2	30	45
9	1494 + 400	Dalwangan Elementary School	15	2	30	45
10	1496 + 450	Patpat Elementary School	15	2	30	45
11	1511 + 590	San Jose Elementary School	15	1	15	22.5
12	1513 + 750	Laguitas Elementary School	15	2	30	45
13	1521 + 755	Cabangahan Elementary School	15	2	30	45
14	1524 + 300	Bangcud National High School	15	2	30	45
15	1524 + 455	Bangcud Central Elementary School	15	2	30	45
16	1528 + 120	Dabongdabong Elementary School	15	2	30	45
17	1535 + 460	Valencia City Central School	15	2	30	45
18	1535 + 570	Valencia National High School	15	2	30	45
19	1543 + 600	Central Mindanao University	15	1	15	22.5
20	1548 + 245	Tubigon Elementary School	15	2	30	45
21	1554 + 340	Philippine Countryville College	15	2	30	45

SIDE WALKS						
No.	**Chainage**	**School**	**Length (m)**	**Side**	**Total Side Length (m)**	**Area (sq. m)**
22	1557 + 930	San Andres Academy of Maramag Inc.	15	2	30	45
23	1562 + 150	Camp I Elementary School	15	2	30	45
24	1571 + 380	San Jose Integrated School	15	2	30	45
25	1575 + 700	Quezon Institute of Technology	15	2	30	45
26	1578 + 700	Salawagan National High School	15	2	30	45
27	1590 + 600	Puntian Elementary School	15	2	30	45
28	1592 + 885	Palacapao Elementary School	15	2	30	45
29	1613 + 650	Kabalansihan Elementary School	15	2	30	45
30	1618 + 730	Sinuda National High School	15	2	30	45
31	1621 + 500	Buda National High School	15	2	30	45
32	1631 + 245	Bayanihan Elementary School	15	2	30	45
33	1640 + 720	Ladian Elementary School	15	2	30	45
34	1647 + 000	Pamuhatan Primary School	15	2	30	45
35	1649 + 320	Balite Elementary School	15	2	30	45
36	1653 + 000	Kibalang Elementary School	15	2	30	45
37	1657 + 000	San Jose Primary School	15	2	30	45
38	1659 + 720	Marilog Central Elementary School	15	2	30	45
39	1663 + 000	Lumondao Elementary School	15	2	30	45
40	1684 + 190	Holy Cross College of Calinan	15	2	30	45
41	1689 + 900	Los Amigos Elementary School	15	2	30	45
42	1693 + 900	Tugbok Central Elementary School	15	2	30	45
43	1695 + 940	University of Southeastern Philippines - Mintal Campus	15	2	30	45
44	1696 + 350	Mintal Elementary School	15	2	30	45
45	1696 + 575	Mintal Comprehensive High School	15	2	30	45
46	1698 + 085	Holy Child - Green Meadows Campus	15	2	30	45
47	1698 + 155	Holy Child College of Davao	15	2	30	45
48	1700 + 100	City College of Davao	15	2	30	45
49	1701 + 390	San Pedro College - Ulas Campus	15	2	30	45
50	1511 + 000	Magallanes Elementary School	15	2	30	45
51	1512 + 805	Ateneo de Davao - Matina Campus	15	2	30	45
52	1512 + 960	Malayan Colleges Mindanao	15	2	30	45
53	1517 + 075	Davao City Special National High School	15	2	30	45
54	1517 + 480	Ateneo de Davao University Senior High School	15	2	30	45
55	1520 + 820	Erico T. Nograles National High School	15	2	30	45
56	1522 + 950	Dr. P. Ocampo College Davao Campus	15	2	30	45
57	1523 + 300	Jose Bastida Elementary	15	2	30	45

SIDE WALKS						
No.	**Chainage**	**School**	**Length (m)**	**Side**	**Total Side Length (m)**	**Area (sq. m)**
		School				
58	1525 + 130	St. Peter College of Davao	15	2	30	45
59	1529 + 580	Sirawan Elementary School	15	2	30	45
60	1531 + 310	Binugao Central Elementary School	15	2	30	45
61	1533 + 625	Inawayan National High School	15	2	30	45
62	1537 + 400	Almendras Elementary School	15	2	30	45
63	1540 + 000	Federico Yap National High School	15	2	30	45
64	1542 + 980	Coronon Elementary School	15	2	30	45
65	1547 + 920	Apolinar Franco, Sr. Elementary School	15	2	30	45
66	1557 + 580	Bato Elementary School	15	1	15	22.5
67	1563 + 285	Polytechnic College of Davao del Sur	15	2	30	45
68	1564 + 200	Digos City Central Elementary School	15	1	15	22.5
69	1564 + 800	Digos Seventh-Day Adventist Elementary School, Inc.	15	2	30	45
70	1564 + 960	Digos City National High School	15	2	30	45
71	1572 + 610	Guihing Central Elementary School	15	2	30	45
72	1575 + 430	Mariano Sorona Elementary School	15	2	30	45
73	1576 + 910	Southeastern College of Padada, Inc.	15	2	30	45
74	1579 + 860	Talas Elementary School	15	2	30	45
75	1581 + 920	Sulop Central Elementary School	15	1	15	22.5
76	1594 + 060	Malungon Gamay Elementary School	15	2	30	45
77	1594 + 555	Malungon Gamay National High School	15	1	15	22.5
78	1602 + 280	Banate National High School	15	2	30	45
79	1604 + 085	Tagaytay Elementary School	15	1	15	22.5
80	1611 + 300	Malalag Cogon Elementary School	15	2	30	45
81	1615 + 640	Malungon Central Elementary School & Special Education Center	15	2	30	45
82	1625 + 930	Malandag Central Elementary School	15	2	30	45
83	1631 + 050	Pulatana Elementary School	15	2	30	45
84	1638 + 575	Datu Andiam Manza National High School	15	2	30	45
85	1638 + 670	Tinagacan Elementary School	15	2	30	45
86	1643 + 100	Katangawan Central Elementary School	15	2	30	45
87	1643 + 225	Johnny Ang National High School	15	2	30	45
88	1652 + 000	Notre Dame of Dadiangas university	15	2	30	45
Total			**1.32**			**3,803**

TURNOUTS/LAYBY (NEAR PEDESTRIAN OVERPASS)						
No.	**Chainage**	**School**	**Length (m)**	**Side**	**Total Side Length (m)**	**Area (sq. m)**
Cagayan de Oro (Puerto - Davao City (Ulas)						

TURNOUTS/LAYBY (NEAR PEDESTRIAN OVERPASS)						
No.	**Chainage**	**School**	**Length (m)**	**Side**	**Total Side Length (m)**	**Area (sq. m)**
1	1445 + 715	Dicklum Elementary School	15	2	30	45
2	1447 + 380	Manolo Fortich National High School	15	2	30	45
3	1447 + 560	Manolo Fortich Central Elementary School	15	2	30	45
4	1455 + 730	Dalirig Elementary School	15	2	30	45
5	1462 + 330	Maluko Elementary School	15	2	30	45
6	1470 + 920	San Vicente National High School	15	2	30	45
7	1474 + 425	Kisolon Central Elementary School	15	2	30	45
8	1486 + 660	Impalutao Integrated School	15	2	30	45
9	1494 + 400	Dalwangan Elementary School	15	2	30	45
10	1496 + 450	Patpat Elementary School	15	2	30	45
11	1511 + 590	San Jose Elementary School	15	1	15	22.5
12	1513 + 750	Laguitas Elementary School	15	2	30	45
13	1521 + 755	Cabangahan Elementary School	15	2	30	45
14	1524 + 300	Bangcud National High School	15	2	30	45
15	1524 + 455	Bangcud Central Elementary School	15	2	30	45
16	1528 + 120	Dabongdabong Elementary School	15	2	30	45
17	1535 + 460	Valencia City Central School	15	2	30	45
18	1535 + 570	Valencia National High School	15	2	30	45
19	1543 + 600	Central Mindanao University	15	1	15	22.5
20	1548 + 245	Tubigon Elementary School	15	2	30	45
21	1554 + 340	Philippine Countryville College	15	2	30	45
22	1557 + 930	San Andres Academy of Maramag Inc.	15	2	30	45
23	1562 + 150	Camp I Elementary School	15	2	30	45
24	1571 + 380	San Jose Integrated School	15	2	30	45
25	1575 + 700	Quezon Institute of Technology	15	2	30	45
26	1578 + 700	Salawagan National High School	15	2	30	45
27	1590 + 600	Puntian Elementary School	15	2	30	45
28	1592 + 885	Palacapao Elementary School	15	2	30	45
29	1613 + 650	Kabalansihan Elementary School	15	2	30	45
30	1618 + 730	Sinuda National High School	15	2	30	45
31	1621 + 500	Buda National High School	15	2	30	45
32	1631 + 245	Bayanihan Elementary School	15	2	30	45
33	1640 + 720	Ladian Elementary School	15	2	30	45
34	1647 + 000	Pamuhatan Primary School	15	2	30	45
35	1649 + 320	Balite Elementary School	15	2	30	45
36	1653 + 000	Kibalang Elementary School	15	2	30	45
37	1657 + 000	San Jose Primary School	15	2	30	45
38	1659 + 720	Marilog Central Elementary School	15	2	30	45
39	1663 + 000	Lumondao Elementary School	15	2	30	45
40	1684 + 190	Holy Cross College of Calinan	15	2	30	45
41	1689 + 900	Los Amigos Elementary School	15	2	30	45
42	1693 + 900	Tugbok Central Elementary School	15	2	30	45
43	1695 + 940	University of Southeastern Philippines - Mintal Campus	15	2	30	45
44	1696 + 350	Mintal Elementary School	15	2	30	45
45	1696 + 575	Mintal Comprehensive High School	15	2	30	45

TURNOUTS/LAYBY (NEAR PEDESTRIAN OVERPASS)						
No.	**Chainage**	**School**	**Length (m)**	**Side**	**Total Side Length (m)**	**Area (sq. m)**
46	1698 + 085	Holy Child - Green Meadows Campus	15	2	30	45
47	1698 + 155	Holy Child College of Davao	15	2	30	45
48	1700 + 100	City College of Davao	15	2	30	45
49	1701 + 390	San Pedro College - Ulas Campus	15	2	30	45
Davao City (Poblacion) - General Santos City						
50	1511 + 000	Magallanes Elementary School	15	2	30	45
51	1512 + 805	Ateneo de Davao - Matina Campus	15	2	30	45
52	1512 + 960	Malayan Colleges Mindanao	15	2	30	45
53	1517 + 075	Davao City Special National High School	15	2	30	45
54	1517 + 480	Ateneo de Davao University Senior High School	15	2	30	45
55	1520 + 820	Erico T. Nograles National High School	15	2	30	45
56	1522 + 950	Dr. P. Ocampo College Davao Campus	15	2	30	45
57	1523 + 300	Jose Bastida Elementary School	15	2	30	45
58	1525 + 130	St. Peter College of Davao	15	2	30	45
59	1529 + 580	Sirawan Elementary School	15	2	30	45
60	1531 + 310	Binugao Central Elementary School	15	2	30	45
61	1533 + 625	Inawayan National High School	15	2	30	45
62	1537 + 400	Almendras Elementary School	15	2	30	45
63	1540 + 000	Federico Yap National High School	15	2	30	45
64	1542 + 980	Coronon Elementary School	15	2	30	45
65	1547 + 920	Apolinar Franco, Sr. Elementary School	15	2	30	45
66	1557 + 580	Bato Elementary School	15	1	15	22.5
67	1563 + 285	Polytechnic College of Davao del Sur	15	2	30	45
68	1564 + 200	Digos City Central Elementary School	15	1	15	22.5
69	1564 + 800	Digos Seventh-Day Adventist Elementary School, Inc.	15	2	30	45
70	1564 + 960	Digos City National High School	15	2	30	45
71	1572 + 610	Guihing Central Elementary School	15	2	30	45
72	1575 + 430	Mariano Sorona Elementary School	15	2	30	45
73	1576 + 910	Southeastern College of Padada, Inc.	15	2	30	45
74	1579 + 860	Talas Elementary School	15	2	30	45
75	1581 + 920	Sulop Central Elementary School	15	1	15	22.5
76	1594 + 060	Malungon Gamay Elementary School	15	2	30	45
77	1594 + 555	Malungon Gamay National High School	15	1	15	22.5
78	1602 + 280	Banate National High School	15	2	30	45
79	1604 + 085	Tagaytay Elementary School	15	1	15	22.5
80	1611 + 300	Malalag Cogon Elementary School	15	2	30	45
81	1615 + 640	Malungon Central Elementary School & Special Education Center	15	2	30	45
82	1625 + 930	Malandag Central Elementary School	15	2	30	45
83	1631 + 050	Pulatana Elementary School	15	2	30	45
84	1638 + 575	Datu Andiam Manza National High School	15	2	30	45
85	1638 + 670	Tinagacan Elementary	15	2	30	45

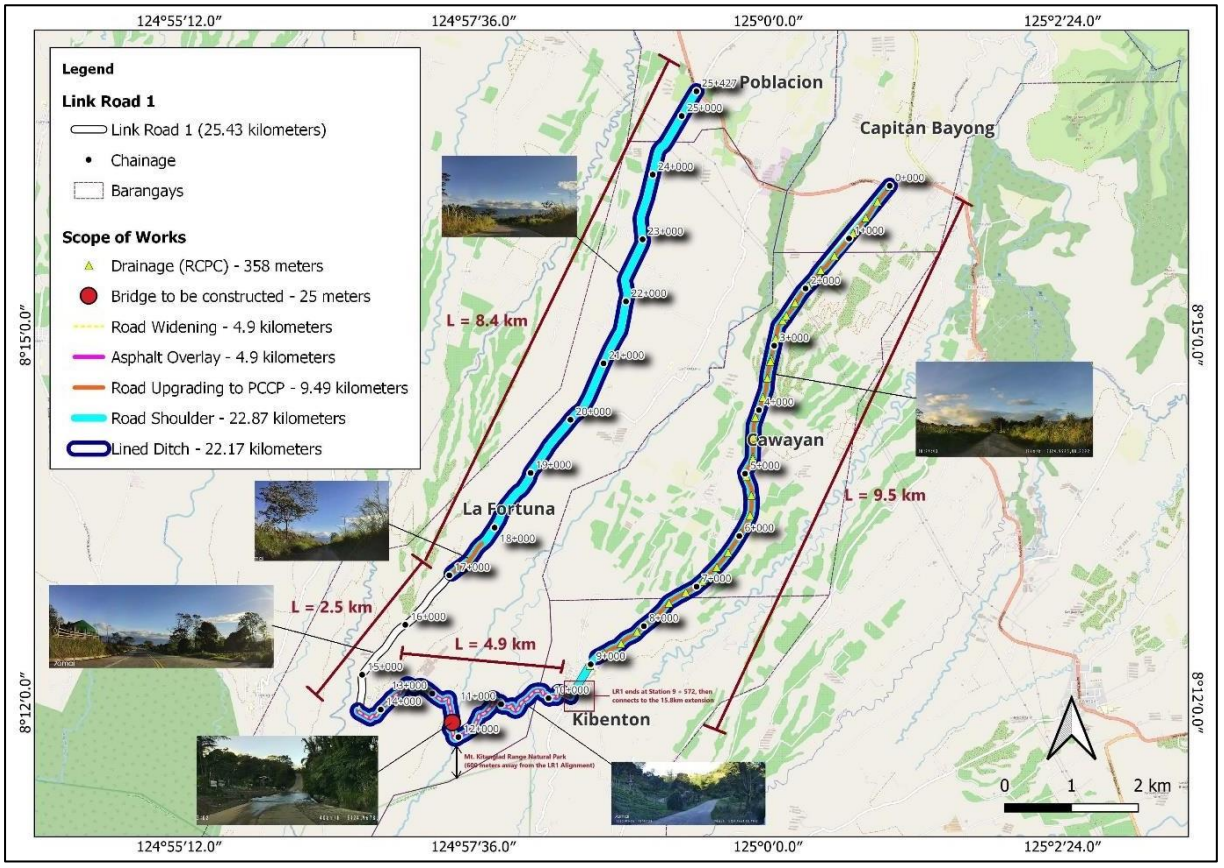
TURNOUTS/LAYBY (NEAR PEDESTRIAN OVERPASS)						
No.	**Chainage**	**School**	**Length (m)**	**Side**	**Total Side Length (m)**	**Area (sq. m)**
		School				
86	1643 + 100	Katangawan Central Elementary School	15	2	30	45
87	1643 + 225	Johnny Ang National High School	15	2	30	45
88	1652 + 000	Notre Dame of Dadiangas University	15	2	30	45
Total			**1.32**			**3,803**

SLOPE PROTECTION					
No.	**Chainage (From)**	**Chainage (To)**	**Length (m)**	**Length (km)**	**Area (km^2)**
Masonry Wall					
MC.1	K1427+462.5	K1427+532.5	70	0.07	0.00018
MC.5	K1463+988	K1464+988	1000	1	0.0021
MC.7	K1465+085	K1465+325	240	0.24	0.00066
MC.8	K1466+811	K1467+361	550	0.55	0.0015
MC.12	K1606+523	K1607+083	560	0.56	0.0015
MC.13	K1607+167	K1607+667	500	0.5	0.0015
MC.14	K1607+867	K1607+967	100	0.1	0.0003
MC.15	K1607+967	K1608+217	250	0.25	0.00072
MC.16	K1609+116.5	K1609+716.5	600	0.6	0.00177
MC.19	K1633+360	K1633+560	200	0.2	0.00045
MC.21	K1640+071	K1640+271	200	0.2	0.00247
Sub-Total				**4.27**	**0.01315**
Soil Nailing W/ Netting					
MC.1	K1427+462.5	K1427+532.5	70	0.07	0.00042
MC.2	K1451+380.8	K1451+530.8	150	0.15	0.0012
MC.4	K1459+667.5	K1459+742.5	75	0.075	0.0007
MC.5	K1463+988	K1464+988	1000	1	0.49
MC.7	K1465+085	K1465+325	240	0.24	0.0022
MC.8	K1466+811	K1467+361	550	0.55	0.0055
MC.12	K1606+523	K1607+083	560	0.56	0.0055
MC.13	K1607+167	K1607+667	500	0.5	0.0095
MC.14	K1607+867	K1607+967	100	0.1	0.001
MC.15	K1607+967	K1608+217	250	0.25	0.0024
MC.16	K1609+116.5	K1609+716.5	600	0.6	0.01003
MC.19	K1633+360	K1633+560	200	0.2	0.00105
MC.21	K1640+071	K1640+271	200	0.2	0.00057
Sub-Total				**4.495**	**0.53007**

LINED DITCH					
No.	**Chainage (From)**	**Chainage (To)**	**Length (m)**	**Length (km)**	**Side**
Left					
Cagayan de Oro (Puerto - Davao City (Ulas)					
1	1427 + 797	1431 + 439	3642	3.642	left side
2	1440 + 90	1441 + 332	1242	1.242	left side
3	1441 + 955	1443 + 129	1174	1.174	left side
4	1443 + 951	1444 + 634	683	0.683	left side
5	1465 + 87	1466 + 50	963	0.963	left side
6	1467 + 0	1467 + 179	179	0.179	left side
7	1482 + 534	1489 + 0	6466	6.466	left side
8	1490 + 480	1491 + 0	520	0.52	left side
9	1491 + 39	1491 + 553	514	0.514	left side
10	1494 + 820	1499 + 86	4266	4.266	left side
11	1499 + 845	1500 + 513	668	0.668	left side
12	1500 + 555	1500 + 861	306	0.306	left side
13	1563 + 0	1565 + 422	2422	2.422	left side
14	1565 + 578	1569 + 94	3516	3.516	left side
15	1593 + 686	1595 + 501	1815	1.815	left side
16	1595 + 659	1596 + 198	539	0.539	left side
17	1596 + 578	1597 + 412	834	0.834	left side
18	1605 + 909	1606 + 48	139	0.139	left side
19	1606 + 469	1607 + 167	698	0.698	left side

LINED DITCH					
No.	**Chainage (From)**	**Chainage (To)**	**Length (m)**	**Length (km)**	**Side**
20	1608 + 511	1608 + 695	184	0.184	left side
21	1616 + 84	1616 + 740	656	0.656	left side
22	1616 + 795	1617 + 550	755	0.755	left side
23	1618 + 66	1618 + 609	543	0.543	left side
24	1618 + 748	1619 + 294	546	0.546	left side
25	1619 + 690	1620 + 302	588	0.588	left side
26	1620 + 586	1620 + 910	324	0.324	left side
27	1621 + 88	1621 + 392	304	0.304	left side
28	1621 + 508	1621 + 662	154	0.154	left side
29	1621 + 747	1621 + 905	158	0.158	left side
30	1663 + 296	1665 + 149	1853	1.853	left side
31	1667 + 565	1668 + 52	487	0.487	left side
32	1669 + 578	1669 + 831	253	0.253	left side
33	1670 + 55	1674 + 583	4528	4.528	left side
Davao City (Poblacion) - General Santos City					
142	1613 + 400	1613 + 498	98	0.098	left side
143	1614 + 278	1614 + 792	514	0.514	left side
Right					
Cagayan de Oro (Puerto - Davao City (Ulas)					
190	1427 + 172	1428 + 43	871	0.871	right side
191	1441 + 351	1442 + 0	649	0.649	right side
192	1443 + 105	1444 + 0	895	0.895	right side
193	1465 + 228	1470 + 939	5711	5.711	right side
194	1487 + 589	1489 + 380	1525	1525	right side
195	1489 + 598	1489 + 647	49	0.049	right side
196	1489 + 905	1490 + 96	191	0.191	right side
197	1492 + 973	1493 + 307	334	0.334	right side
198	1494 + 70	1494 + 740	670	0.67	right side
199	1495 + 50	1496 + 195	1145	1.145	right side
200	1496 + 299	1497 + 932	1633	1.633	right side
201	1500 + 553	1501 + 389	836	0.836	right side
202	1530 + 114	1531 + 718	1604	1.604	right side
203	1534 + 0	1535 + 121	1121	1.121	right side
204	1562 + 539	1563 + 285	746	0.746	right side
205	1564 + 774	1564 + 898	124	0.124	right side
206	1593 + 673	1594 + 93	420	0.42	right side
207	1594 + 894	1595 + 37	143	0.143	right side
208	1595 + 589	1595 + 824	235	0.235	right side
209	1596 + 261	1596 + 555	294	0.294	right side
210	1596 + 844	1597 + 183	339	0.339	right side
211	1597 + 366	1597 + 842	476	0.476	right side
212	1606 + 357	1607 + 289	932	0.932	right side
213	1607 + 440	1608 + 771	1331	1.331	right side
214	1617 + 836	1618 + 71	235	0.235	right side
215	1618 + 670	1620 + 255	1585	1.585	right side
216	1620 + 619	1620 + 928	309	0.309	right side
217	1621 + 72	1621 + 921	849	0.849	right side
218	1663 + 621	1663 + 919	298	0.298	right side
219	1664 + 109	1665 + 98	989	0.989	right side
220	1665 + 339	1665 + 472	133	0.133	right side
221	1665 + 784	1665 + 932	148	0.148	right side
222	1666 + 259	1666 + 720	461	0.461	right side
223	1666 + 820	1668 + 199	1379	1.379	right side
224	1670 + 0	1670 + 366	366	0.366	right side
225	1671 + 635	1671 + 818	183	0.183	right side
226	1672 + 225	1672 + 633	408	0.408	right side
Total			**72,148.00**	**72.148**	

Annex 3. Road Works Map for Link Road 1



Annex 4. Detailed Road Works for Link Road 1

No.	ROAD WORKS	LENGTH	UNIT
1	Road Upgrading to PCCP	9.49	kilometers
2	Road Widening	4.9	kilometers
3	Asphalt Overlay	4.9	kilometers
4	Bridge to be Constructed	30	linear meter
5	Road Shoulder	22.87	kilometers
6	Drainage (RCPC)	358	linear meter
7	Drainage (Lined Ditch)	22.17	kilometers
8	Road Safety: Roadside Barrier	10	kilometers
9	Road Safety: Road Lighting	253	count
10	Road Safety: Road Safety Signages	30	count
11	Pavement Markings	25.43	kilometers

Annex 5. Inventory of Road Works in the Link Road 1

ROAD UPGRADING TO PCCP						
No.	**Chainage**		**Length (km)**	**No. of Lanes**	**Area (sq. m)**	**Engg work details**
1	0 + 000	8 + 837	8.84	2	59,228.00	
2	17 + 054	17 + 700	0.646	2	4,328.20	
Total			**9.49**		**59,228.00**	

ROAD WIDENING						
No.	**Chainage**		**Length (linear meter)**	**No. of Lanes**	**Area (sq. m)**	**Engg work details**
1	9 + 572	14 + 500	4928	2	13,305.60	Proposed road strip widening of 1.35meters on both sides, with thickness = 0.28 meters.
Total			**4.9**		**13,305.60**	

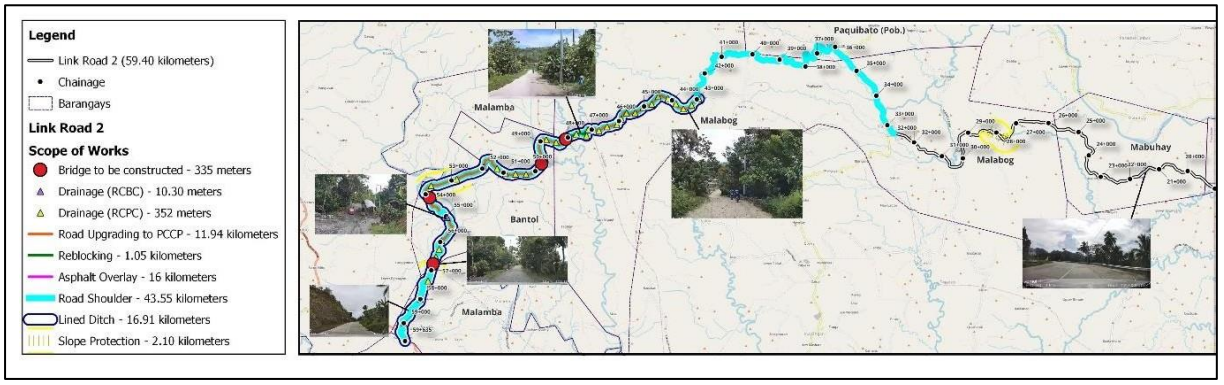
ASPHALT OVERLAY						
No.	**Chainage**		**Length (linear meter)**	**No. of Lanes**	**Area (sq. m)**	**Engg work details**
1	9 + 572	14 + 500	4928	2	33,017,600.00	Proposed asphalt overlay of 100mm on the existing pavement.
Total			**4.9**		**33,017,600.00**	

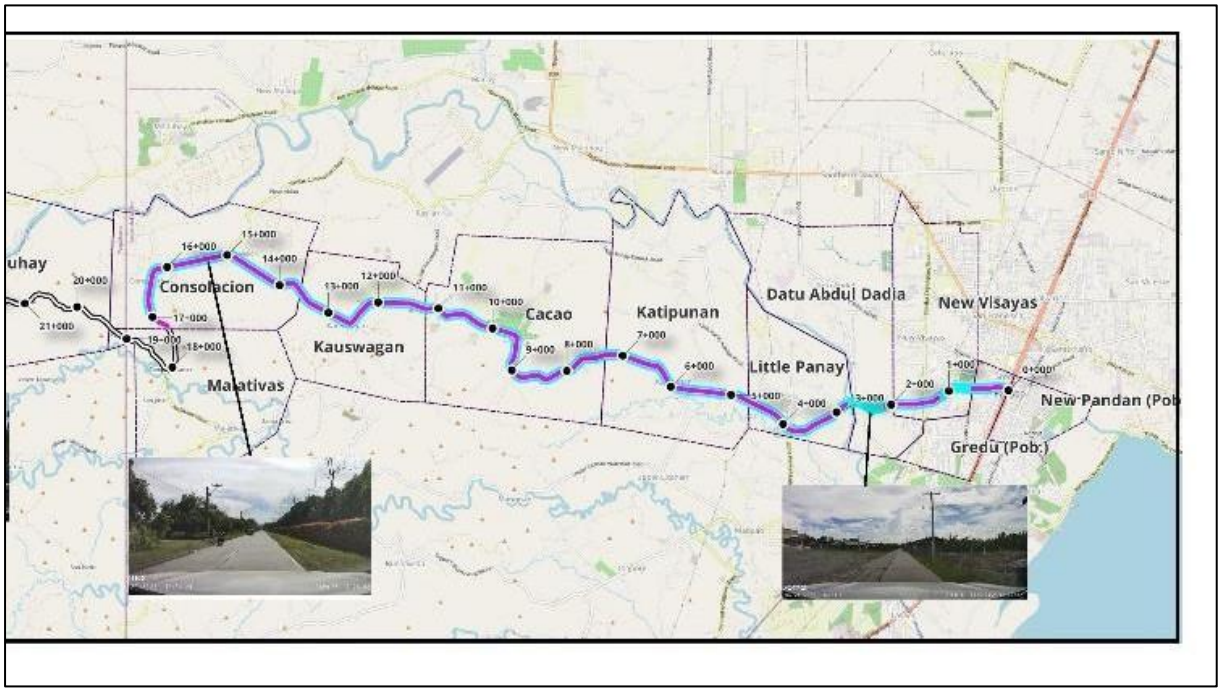
BRIDGE TO BE CONSTRUCTED					
No.	**Chainage**	**Length (linear meter)**	**No. of Lanes**	**Name**	**Engg work details**
1	10 + 448	30	2	Atugan River Crossing Spillway	
Total		**30.0**			

DRAINAGE (RCPC)			
No.	**Chainage**	**Length (linear meter)**	**Engg work details**
RCPC - Cross Drain			
1	0 + 005	11	
2	0 + 300	11	
3	0 + 600	11	
4	0 + 900	11	
5	1 + 340	11	
6	1 + 640	11	
7	1 + 940	11	
8	2 + 290	11	
9	2 + 590	11	
10	2 + 890	11	
11	3 + 202	11	
12	3 + 502	11	
13	3 + 802	11	
14	4 + 122	11	
15	4 + 422	11	
16	4 + 722	11	
17	5 + 045	11	
18	5 + 345	11	
19	5 + 645	11	
20	5 + 945	11	
21	6 + 300	11	

DRAINAGE (RCPC)			
No.	**Chainage**	**Length (linear meter)**	**Engg work details**
22	6 + 582	11	
23	6 + 882	11	
24	7 + 184	11	
25	7 + 484	11	
26	7 + 784	11	
27	8 + 133	11	
28	8 + 433	11	
29	8 + 733	11	
30	9 + 022	11	
Sub-Total		**330**	
RCPC - Lateral Pipe			
1	2 + 266	7	910 mm size
2	2 + 500	7	
3	3 + 245	7	
4	4 + 750	7	
Sub-Total		**28**	
Total		**358**	

Annex 6. Road Works Map of Link Road 2





Annex 7. Detailed Road Works for Link Road 2

No.	Scope of Works	Length (new)	Unit
1	Road Upgrading to PCCP	11.94	kilometers
2	Reblocking	1.05	kilometers
3	Bridge to be Constructed	315	linear meter
4	Drainage (RCBC)	10.30	linear meter
5	Drainage (RCPC)	352	linear meter
6	Drainage Lined Ditch	16.91	linear meter
7	Road Shoulder	43.55	kilometers
8	Slope Protection	2.10	kilometers
9	Road Safety: Road Side Barrier	57.311	kilometers
10	Road Safety: Road Lighting	2,343	count
11	Road Safety: Rumble Strips	57.311	kilometers
12	Road Safety: Pavement Markings	59.40	kilometers

Annex 8. Inventory of Road Works in Link Road 2

ROAD UPGRADING TO PCCP						
No.	**Chainage**		**Length (m)**	**No. of Lanes**	**Area (sq.m)**	**Eng work details**
1	42+932	46+932	4,000	2	26,800.00	Pavement width is 6.7 meter
2	47+940	54+698	6,758	2	45,278.60	
3	54+950	55+955	1,005	2	6,733.50	
4	56+645	56+818	173	2	1,159.10	
Total			**11.94**		**79,971.20**	

REBLOCKING						
No.	**Chainage**		**Length (m)**	**No. of Lanes**	**Area (sq. m)**	**Engineering Works**
1	46+932	47+980	1048	2	7021.6	Removal of existing substandard PCCP Preparation of subgrade and subbase Paving of PCCP with gravel shoulder
Total			**1.05**		**7,021.60**	

BRIDGE TO BE CONSTRUCTED					
No.	**Chainage**	**Length (linear meters)**	**No. of Lanes**	**Bridge Name**	**Engineering work details**
1	48 + 084	100.00	2.00	Siao Bridge	
2	49 + 707	90.00	2.00	Masupit Bridge	
3	54 + 163	120.00	2.00	Bantol - Davao River Bridge	
Total		**310.00**	**linear meters**		

DRAINAGE (RCBC)					
No.	**Chainage**	**Length (m)**	**Total lane length**	**Name**	**Engineering work details**
1	55 + 049	10.30	2.00	Banuayan Wooden Footbridge	Existing Banuayan Wooden Footbridge to be replaced with Box Culvert
Total		**10.300**			

DRAINAGE (RCPC)			
No.	**Chainage**	**Length (m)**	**Engineering work details**
1	42 + 932	11.00	
2	43 + 300	11.00	
3	43 + 600	11.00	
4	43 + 900	11.00	
5	44 + 140	11.00	
6	44 + 440	11.00	
7	44 + 740	11.00	
8	45 + 045	11.00	
9	45 + 345	11.00	
10	45 + 645	11.00	
11	45 + 945	11.00	
12	46 + 145	11.00	
13	46 + 445	11.00	
14	46 + 745	11.00	
15	47 + 125	11.00	
16	47 + 425	11.00	
17	47 + 725	11.00	

DRAINAGE (RCPC)			
No.	**Chainage**	**Length (m)**	**Engineering work details**
18	48 + 516	11.00	
19	48 + 816	11.00	
20	50 + 300	11.00	
21	50 + 600	11.00	
22	50 + 900	11.00	
23	51 + 230	11.00	
24	51 + 937	11.00	
25	52 + 837	11.00	
26	53 + 640	11.00	
27	55 + 945	11.00	
28	56 + 245	11.00	
29	56 + 545	11.00	
30	57 + 340	11.00	
31	58 + 000	11.00	
32	59 + 000	11.00	
Total		**352.000**	

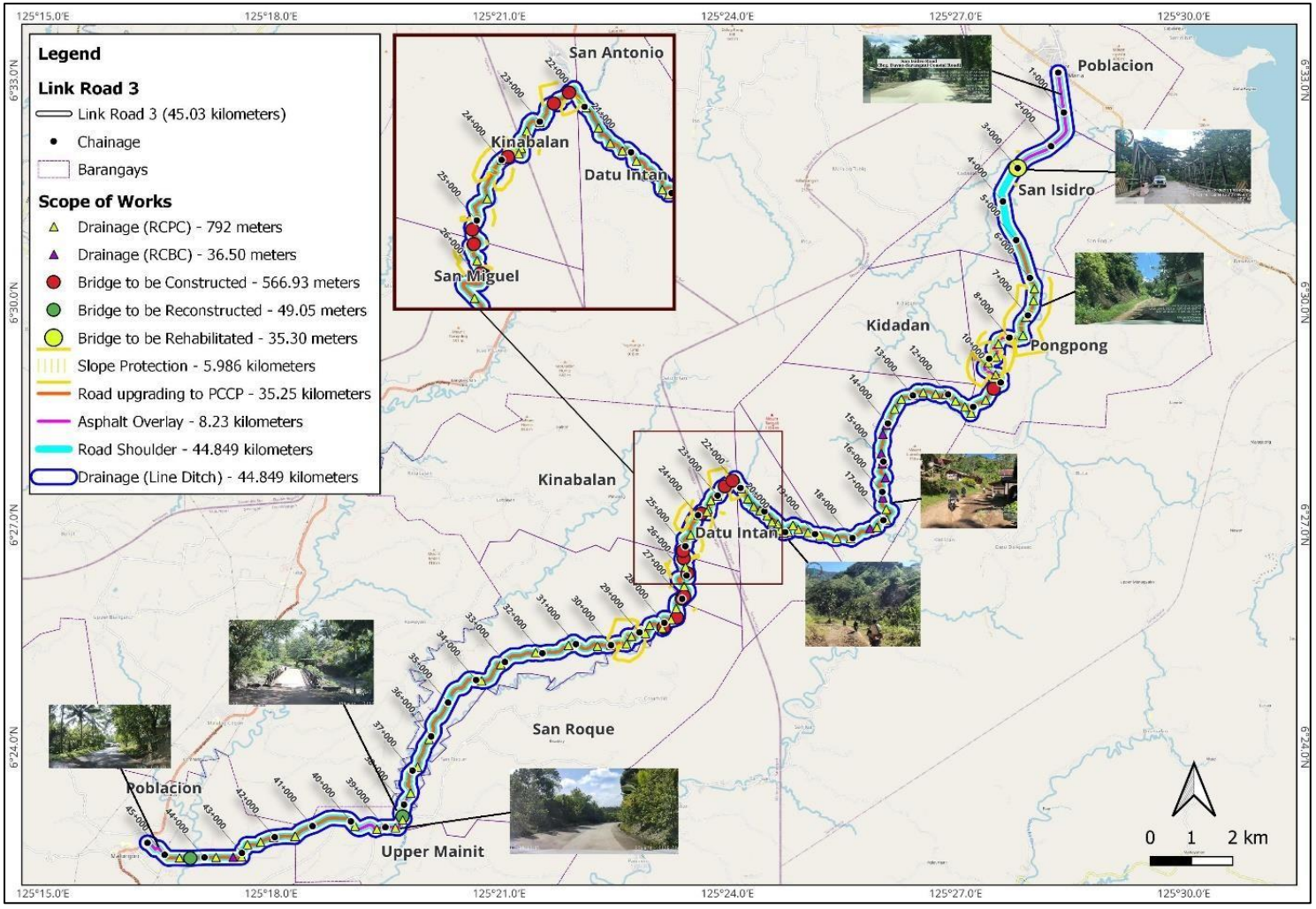
DRAINAGE (LINED DITCH) - OPEN & COVERED					
No.	**Chainage**		**Length (linear meters)**	**Total Sides**	**Total Quantity (linear meter)**
OPEN LINED DITCH					
1	42 + 932	45 + 680	2,748	2	5,496.00
1	45 + 780	47 + 540	1,760	2	3,520.00
1	47 + 630	51 + 750	4,120	2	8,240.00
1	51 + 870	54 + 485	2,615	2	5,230.00
1	54 + 485	56 + 799	2,314	2	4,628.00
1	56 + 799	59 + 491	2,692.00	2	5,384.00
Sub-Total			**16,249.00**		**32,498.00**
COVERED LINED DITCH					
1	54 + 485	55 + 000	515.00	2	1,030.00
2	59 + 491	59 + 635	144.13	2	288.26
Sub-Total			**659.13**		**1,318.26**
Total			**16.91 km**		

PAVED/ROAD SHOULDER							
No.	**Chainage**		**Length (linear meters)**	**Total Sides**	**Total Quantity (linear meter)**	**Area (sq. m)**	**Remarks**
CONCRETE ROAD SHOULDER							
1	0 + 010	2 + 684	2674	2	5,348.00	8,022.00	150mm thickness,
2	2 + 716	5 + 637	2,921.00	2	5,842.00	8,763.00	
3	5 + 669	17 + 000	11,331.00	2	22,662.00	33,993.00	
4	32 + 700	42 + 932	10,232.00	2	20,464.00	30,696.00	
5	42 + 932	45 + 680	2,748	2	5,496.00	8,244.00	
6	45 + 780	47 + 540	1,760	2	3,520.00	5,280.00	
7	47 + 630	51 + 750	4,120	2	8,240.00	12,360.00	
8	51 + 870	54 + 485	2,615	2	5,230.00	7,845.00	
9	54 + 485	59 + 635	5,150	2	10,300.00	15,450.00	
Total			**43.55**		**87.10**	**130,653.00**	

SLOPE PROTECTION						
No.	**Chainage (From)**	**Chainage (To)**	**Length (m)**	**Length (km)**	**Height (m)**	**Area (sq. m.)**
Masonry Wall						
LR2.1	K56+850	K57+000	150	0.15	2.80	420

SLOPE PROTECTION						
No.	**Chainage (From)**	**Chainage (To)**	**Length (m)**	**Length (km)**	**Height (m)**	**Area (sq. m.)**
LR2.2	K52+550	K53+800	1250	1.25	2.64	3,300
LR2.3	K27+517	K28+217	700	0.7	3.00	2,100
Sub-Total				**2.1**		5,820
Soil Nailing W/ Netting						
LR2.1	K56+850	K57+000	150	0.15	9.33	1,400
LR2.2	K52+550	K53+800	1250	1.25	8.80	11,000
LR2.3	K27+517	K28+217	700	0.7	10.00	7,000
Sub-Total				**2.1**		19,400
Total				**4.2**		**25,220**

Annex 9. Road Works Map of Link Road 3



Annex 10. Detailed Road Works for Link Road 3

No.	SCOPE OF WORKS	LENGTH (new)	UNIT
1	Road Upgrading to PCCP	35.25	kilometers
2	Bridge to be Constructed	566.90	linear meter
3	Bridge to be Reconstructed	49.05	linear meter
4	Bridge to be Rehabilitated	35.30	linear meter
5	Drainage (RCBC)	36.50	linear meter
6	Drainage (RCPC)	792.00	linear meter
7	Drainage Lined Ditch	44.849	kilometers
8	Road Shoulder	44.849	kilometers
9	Slope Protection	5.986	kilometers
10	Road Safety: Guard Rail	12.240	kilometers
11	Road Safety: Road Lighting	1,116	count
12	Road Safety: Traffic Sign	3,316	kilometers
13	Road Safety: Reflectorized Pavement Studs	2,640	count

Annex 11. Inventory of Road Work in Link Road 3

ROAD UPGRADING TO PCCP						
No.	**Chainage**		**Length (m)**	**No. of Lanes**	**Area (sq. m)**	**Engineering work details**
1	5+060	7+653	2,593	2	17,373,100.00	
2	7+653	7+887	234	2	1,567,800.00	
3	10+031	13+498	3467	2	23,228,900.00	
4	13+498	34+552	21,054.00	2	141,061,800.00	
5	34+700	37+216	2,516.00	2	16,857,200.00	
6	37+216	37+527	311.00	2	2,083,700.00	
7	37+662	37+905	243.00	2	1,628,100.00	
8	39+807	43+901	4,094.00	2	27,429,800.00	
9	43+929	44+672	737.00	2	4,937,900.00	
Total			**35.25 km**		**236,168,300.00**	

BRIDGE TO BE CONSTRUCTED					
No.	**Chainage**	**Length (m)**	**No. of Lanes**	**Bridge Name**	**Engineering work details**
1	28 + 125	31.40	2	Bridge 1	
2	27 + 550	22.50	2	Bridge 2	
3	27 + 000	21.00	2	Bridge 3	
4	26 + 900	22.50	2	Bridge 4	
5	25 + 943	22.50	2	Bridge 5	
6	25 + 323	121.50	2	Bridge 6	
7	25 + 021	60.00	2	Bridge 7	
8	23 + 803	121.50	2	Bridge 8	
9	22 + 581	121.50	2	Bridge 9	
10	22 + 291	22.50	2	Bridge 10	
Total		**566.90**			

BRIDGE TO BE RE-CONSTRUCTED					
No.	**Chainage**	**Length (m)**	**No. of Lanes**	**Bridge Name**	**Engineering work details**
1	44 + 345	27.50	2	Kityan Bailey Bridge	
2	38 + 333	21.55	2	Upper Mainit Bailey Bridge	Total removal and replacement of entire bridge
Total		**49.05**			

BRIDGE TO BE REHABILITATED					
No.	**Chainage**	**Length (m)**	**No. of Lanes**	**Bridge Name**	**Engineering work details**
1	3 + 000	35.30	2.00	Mamulawan Bridge	Basically, both superstructure and substructure; More on maintenance like abutment slope protection repair, approach slab replacement, bridge connector replacement, repainting etc.
Total		**35.30**			

DRAINAGE (RCBC)					
No.	**Chainage**	**Length (m)**	**Name**	**Engineering work details**	**Remarks**
TO BE CONSTRUCTED					
1	14 + 300	3.00	Box Culvert 1	Paluhan Creek III	Proposed 1- barrel 2.80m x 3.0m x 10.30m box culvert
2	14 + 790	4.00	Box Culvert	Sabang-Lumabat	Proposed 1- barrel 2m x 4m x 10.30m

DRAINAGE (RCBC)					
No.	**Chainage**	**Length (m)**	**Name**	**Engineering work details**	**Remarks**
			2	Creek	box culvert (skewed @ 20-30 degrees left forward)
3	14 + 970	3.00	Box Culvert 3	Paluhan Creek II	Proposed 1- barrel -2.5m x 3.0m x 10.30m box culvert
4	15 + 070	2.00	Box Culvert 4	Paluhan Creek I	Proposed 1- barrel -1.70m x 2.0m x 10.30m box culvert
5	15 + 500	4.00	Box Culvert 5	Sitio Libug I Creek	Proposed 1- barrel -2.8m x 4.0m x 10.30m box culvert
6	16 + 160	4.00	Box Culvert 6	Sitio Libug II Creek	Proposed 1- barrel -2.8m x 4.0m x 10.30m box culvert
7	17 + 490	3.00	Box Culvert 7	Sitio Lais Creek	Proposed 2- barrel -1.70m x 2.0m x 15m box culvert skewed @ 30 degrees right forward
Sub-Total		**23.000**			
TO BE REHABILITATED					
1	14 + 060	4.50	Panamin Box Culvert	Existing 1 - 3m x 4m diameter size with 6m length	Extend the barrel to 10.30m and construct headwalls, wingwalls, apron slab.
2	41 + 510	4.50	Kityan Box Culvert	Existing 1 -3m x 3m diameter size with 6m length	
3	43 + 310	4.50	Kityan Box Cuvlert I	Existing 1 - 1.80m x 1.80m diameter size with 6m length	
Sub-Total		**13.500**			
Total		**36.500**			

DRAINAGE (RCPC)				
No.	**Chainage**	**Length (m)**	**Engineering work details**	**Remarks**
1	6 + 300	11.00		
2	6 + 600	11.00		
3	7 + 068	11.00		
4	7 + 565	11.00		
5	8 + 400	11.00		
6	8 + 859	11.00		
7	9 + 167	11.00		
8	9 + 684	11.00		
9	10 + 645	11.00		
10	11 + 165	11.00		
11	11 + 476	11.00		
12	11 + 765	11.00		
13	12 + 061	11.00		
14	12 + 368	11.00		
15	12 + 695	11.00		
16	13 + 000	11.00		
17	13 + 300	11.00		
18	13 + 600	11.00		
19	16 + 522	11.00		
20	16 + 912	11.00		
21	17 + 310	11.00		
22	18 + 050	11.00		
23	18 + 406	11.00		
24	18 + 842	11.00		
25	19 + 180	11.00		
26	19 + 482	11.00		

DRAINAGE (RCPC)				
No.	**Chainage**	**Length (m)**	**Engineering work details**	**Remarks**
27	19 + 670	11.00		
28	19 + 912	11.00		
29	20 + 040	11.00		
30	20 + 226	11.00		
31	20 + 424	11.00		
32	20 + 645	11.00		
33	20 + 890	11.00		
34	21 + 131	11.00		
35	21 + 345	11.00		
36	21 + 645	11.00		
37	21 + 953	11.00		
38	23 + 000	11.00		
39	23 + 260	11.00		
40	23 + 560	11.00		
41	23 + 700	11.00		
42	24 + 000	11.00		
43	24 + 600	11.00		
44	25 + 735	11.00		
45	26 + 568	11.00		
46	27 + 320	11.00		
47	27 + 708	11.00		
48	28 + 170	11.00		
49	28 + 540	11.00		
50	28 + 823	11.00		
51	29 + 250	11.00		
52	29 + 571	11.00		
53	30 + 000	11.00		
54	30 + 370	11.00		
55	31 + 270	11.00		
56	32 + 170	11.00		
57	33 + 120	11.00		
58	33 + 860	11.00		
59	36 + 088	11.00		
60	36 + 850	11.00		
61	37 + 670	11.00		
62	38 + 450	11.00		
63	38 + 750	11.00		
64	39 + 215	11.00		
65	39 + 850	11.00		
66	41 + 500	11.00		
67	42 + 027	11.00		
68	42 + 330	11.00		
69	42 + 715	11.00		
70	43 + 100	11.00		
71	43 + 725	11.00		
72	44 + 605	11.00		
Total		**792.00**		

DRAINAGE (LINED DITCH) - OPEN & COVERED						
No.	**Chainage**		**Length (linear meter)**	**Total Sides**	**Total Quantity (linear meter)**	**Engineering work details**
OPEN LINED DITCH						
1	7 + 855	13 + 000	5,145	2		
2	15 + 000	22 + 000	7,000	2		

DRAINAGE (LINED DITCH) - OPEN & COVERED						
No.	**Chainage**		**Length (linear meter)**	**Total Sides**	**Total Quantity (linear meter)**	**Engineering work details**
3	22 + 000	45 + 500	23,500	2		
Sub-Total			**35,645**			
	bridges removed in total length		*651.25*			
COVERED LINED DITCH						
1	0 + 000	7 + 855	7,855.00	2		
2	13 + 000	15 + 000	2,000.00	2		
Sub-Total						
		TOTAL	**44.849 km**			

PAVED/ROAD SHOULDER							
No.	**Chainage**		**Length (linear meter)**	**Total Sides**	**Total Quantity (linear meter)**	**Area (sq. m)**	**Remarks**
CONCRETE ROAD SHOULDER							
1	0 + 000	45 + 500	45,500	2		136,500.00	entire length
	bridges removed in total length		*651.25*				
Total			**44.849 km**			**136,500.000**	

SLOPE PROTECTION					
No.	**Chainage (From)**	**Chainage (To)**	**Length (linear meter)**	**Height (m)**	**Area (sq. m.)**
Masonry Wall					
1	3 + 000	3+032	80	3	240
2	6 + 200	7 + 856	1656	3	4968
3	8 + 491	8 + 891	400	3	1200
4	8 + 955	9 + 555	600	3	1800
5	22 + 350	22 + 550	200	3	600
6	23 + 500	23 + 600	100	3	300
7	24 + 000	24 + 300	300	3	900
8	24 + 900	25 + 000	100	3	300
9	25 + 500	25 + 600	100	3	300
10	25 + 750	25 + 850	100	3	300
11	26 + 925	26 + 975	50	3	150
12	29 + 228	29 + 728	500	3	1500
Sub-Total			**4,186.00**		**12,558.00**
Soil Nailing W/ Netting					
1	8 + 491	8 + 891	400	11	4400
2	8 + 955	9 + 555	600	13	7800
3	24 + 000	24 + 300	300	13	3900
4	29 + 228	29 + 728	500	13	6500
Sub-Total			**1,800.00**		**22,600.00**
Total			**5.986**		**35,158.00**

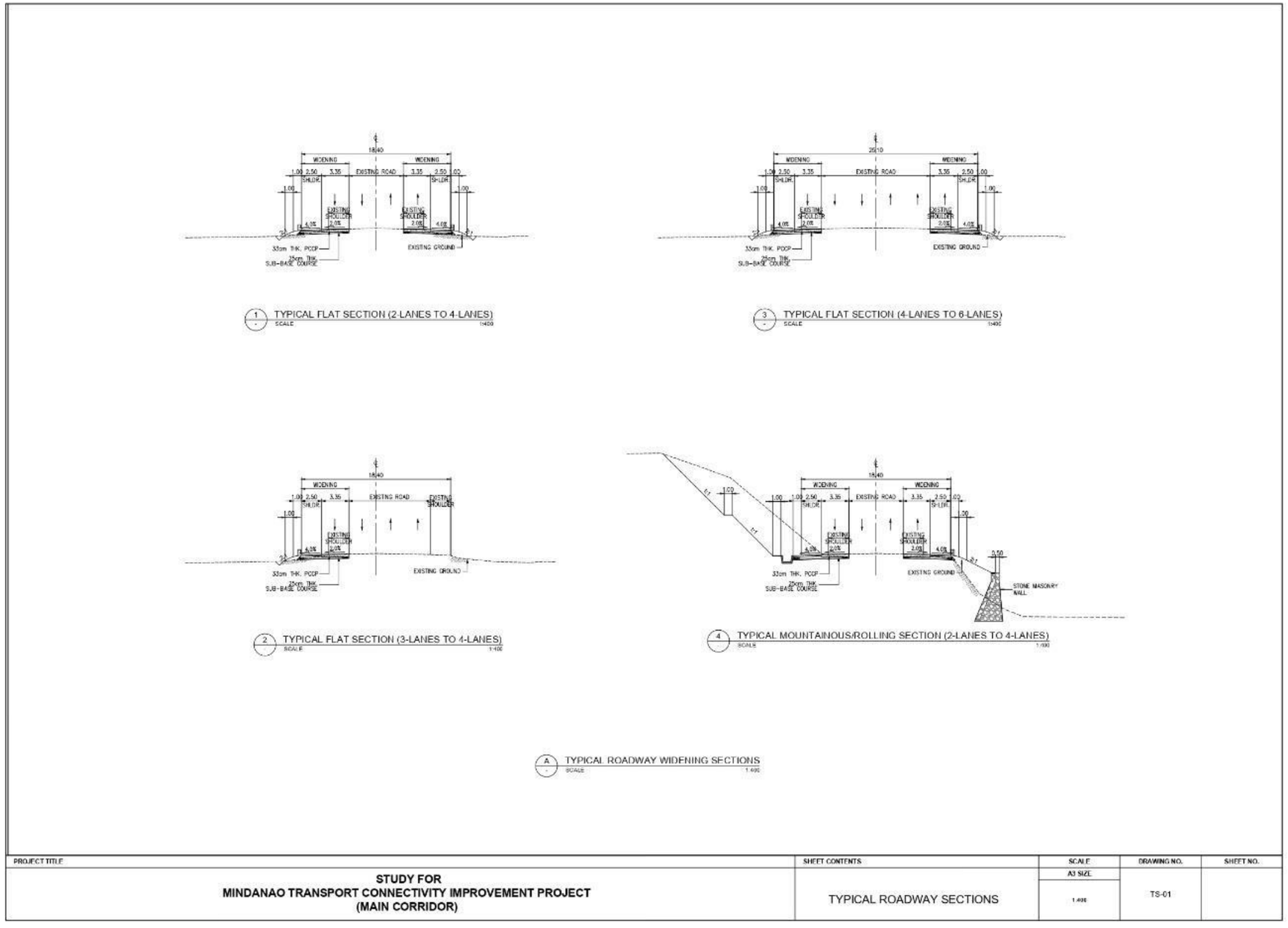
Annex 12. Road Safety Countermeasures

Road ID Sections	Location	Accident Type Severity (count) (DPWH/PNP) - 2016 to 2020			Recommendations/Countermeasures	How many every 100 meter segment (count)
		Fatal	Serious	Minor		
S00577MN	Puerto Alae (9.569 km)	6.2	35.6	6.2	1. Provision of streetlights and shoulder rumble strips	2.39
					2. Steel railings on road curves and speed signages	26.75
					3. Improve delineation especially on curves	1.33
					4. Clear roadside hazards	7.80
					5. Provide central hatching	0.96
	95.69				6. Provision of footpath	19.14
S00621MN	Manolo Fortich, Mangima Road Sumilao, San Vicente Road (37.577 km)	12	20.4	18	1. Provision of traffic signages	8.00
					2. Pedestrian overpass or vehicle lay-by on areas where schools are located	0.02
					3. Footpath provision	7.52
					4. Clear Roadside hazards	7.80
					5. Traffic calming devices (Población area)	4.00
					6. Provide Roadside barriers	5.02
	375.77				7. Provide central hatching	3.76
S00639MN	Impasug-ong,Sayre highway Malaybalay,Casisang road Valencia, Bagontaas, Poblacion, Lumbo (67.465 km)	32	64.2	15.4	1. Provision of streetlights and shoulder rumble strips	16.87
					2. Pedestrian overpass or vehicle lay-by on areas where schools are located	0.02
					3. Footpath provision	19.14
					4. Clear Roadside hazards	7.80
					5. Traffic calming devices (Población area)	4.00
					6. Provide Roadside barriers	9.02
	674.65				7. Provide central hatching	6.75
S00654MN	Quezon Overview road - Palacapao San Jose Road, Sinuda road (33.44 km)	4.8	4.2	0.8	1. Improve delineation on curves	4.64
					2. Provide roadside barriers	4.47
					3. Sight distance (Remove obstructions)	0.30
					4. Provide central hatching	3.34
					5. Clear roadside hazards	7.80
					6. Shoulder rumble strips	6.69
	334.4				7. Provision of street lights	8.36
SO1406MN	Calinan, Los Amigos Road (1.75 km)	0	0	0	1. Footpath provision	0.35
					2. Pedestrian overpass or vehicle lay-by on areas where schools are located	0.06
					3. Traffic / Speed signages	8.00
	17.5				4. Provide Central Hatching	0.18
S00039MN	Matina Crossing and Talomo Road, Davao city (7.37 km)	1.8	39.6	5.6	1. Footpath provision	1.47
					2. Pedestrian overpass or vehicle lay-by on areas where schools are located	0.08
					3. Traffic / Speed signages	8.00
	73.7				4. Provide Central Hatching	0.74
S00160MN	Davao City, Toril road (2.2 km)	3.8	32.6	8	1. Traffic calming	4.00
					2. Provide Central hatching	0.22
					3. Clear roadside hazards	7.80
					4. Traffic / Speed signages	8.00
					5. Footpath provision	0.44
	22				6. Pedestrian overpass or vehicle lay-by on areas where schools are located	0.27
S00162MN	Digos City, Cogon Road (2.42 km)	11.2	21.2	11.2	1. Provision of traffic signages	8.00
					2. Pedestrian overpass or vehicle lay-by on areas where schools are located	0.33
					3. Footpath provision	0.48
					4. Clear Roadside hazards	7.80
					5. Traffic calming devices (Población area)	4.00
					6. Provide Roadside barriers	0.32
	24.2				7. Provide central hatching	0.24
S00184MN	Zone III, Digos City (1.21 km)	9.2	64.2	15.6	1. Provision of traffic signages	8.00
					2. Pedestrian overpass or vehicle lay-by on areas where schools are located	0.66

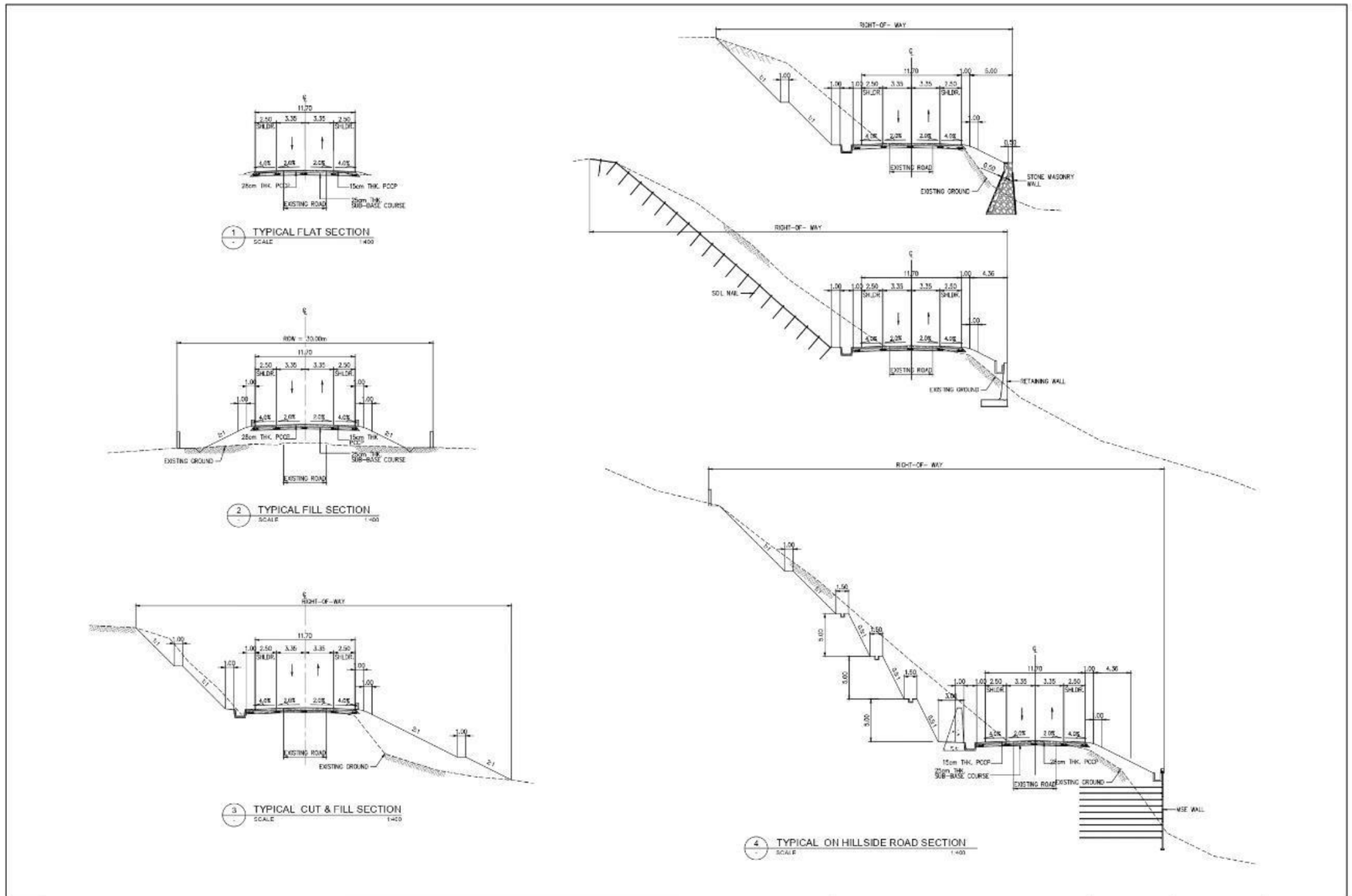
Road ID Sections	Location	Accident Type Severity (count) (DPWH/PNP) - 2016 to 2020			Recommendations/Countermeasures	How many every 100 meter segment (count)
		Fatal	Serious	Minor		
					3. Footpath provision	0.24
					4. Clear Roadside hazards	7.80
					5. Traffic calming devices (Población area)	4.00
					6. Provide Roadside barriers	0.16
	12.1				7. Provide central hatching	0.12
S00202MN	Malalag, Tagansule road (3.75 km)	3.2	5.4	0.6	1. Provision of street lights and shoulder rumble strips	0.94
					2. Pedestrian overpass or vehicle lay-by on areas where schools are located	0.21
					3. Footpath provision	0.75
					4. Clear Roadside hazards	7.80
					5. Traffic calming devices (Población area)	4.00
					6. Provide Roadside barriers	0.50
	37.5				7. Provide central hatching	0.38
S00220MN	Malungon, Poblacion road (4.04 km)	7.6	26.2	4.2	1. Provision of street lights and shoulder rumble strips	1.01
					2. Pedestrian overpass or vehicle lay-by on areas where schools are located	0.20
					3. Footpath provision	0.81
					4. Clear Roadside hazards	7.80
					5. Traffic calming devices (Población area)	4.00
					6. Provide Roadside barriers	0.54
	40.4				7. Provide central hatching	0.40
S00231MN	General Santos City Road (22.36 km)	5.2	56	69.4	1. Provide Roadside barriers	2.99
					2. Provide central hatching	2.24
					3. Clear Roadside hazards	7.80
					4. Traffic calming devices	4.00
	223.6				5. Traffic / Speed signages	8.00
Note: Can also use 2017 iRAP counter measures as basis before the Detailed Engineering Design (DED)						

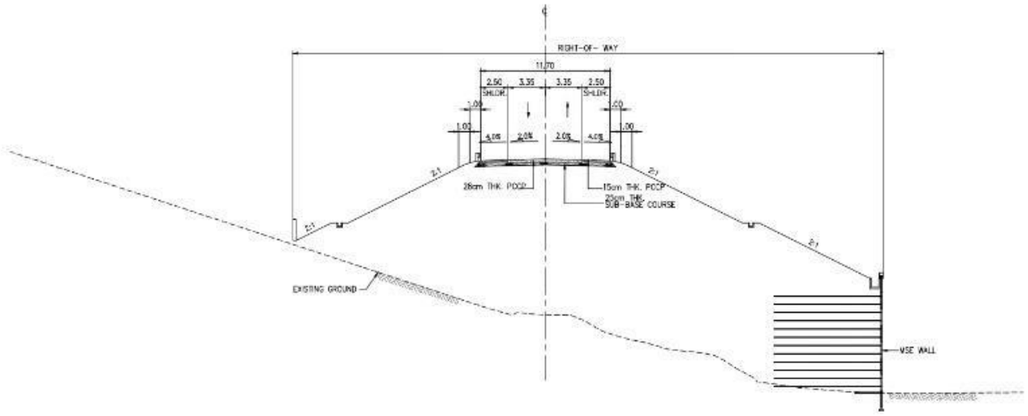
Annex 13. Typical Section

Main Corridor

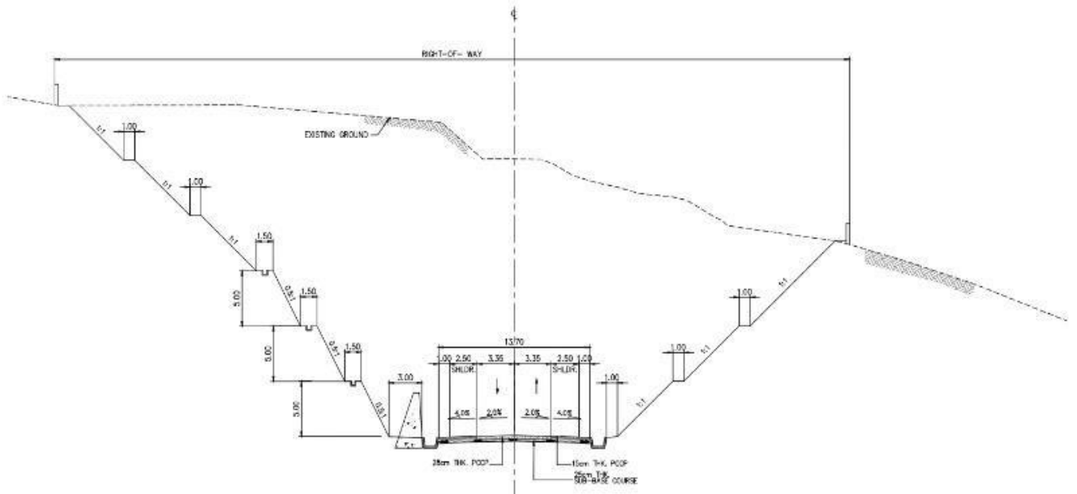


Link Road


1 TYPICAL FLAT SECTION
SCALE 1:400
2 TYPICAL FILL SECTION
SCALE 1:400
3 TYPICAL CUT & FILL SECTION
SCALE 1:400
4 TYPICAL ON HILLSIDE ROAD SECTION
SCALE 1:400
RIGHT-OF-WAY
EXISTING ROAD
EXISTING GROUND
STONE MASONRY WALL
SOIL NAIL
RETAINING WALL
MSE WALL
PROJECT TITLE
STUDY FOR
MINDANAO TRANSPORT CONNECTIVITY IMPROVEMENT PROJECT
(LINK ROAD 3)
SHEET CONTENTS
TYPICAL ROADWAY SECTIONS
(1 of 3)
SCALE
A3 SIZE
AS SHOWN
DRAWING NO.
TS-01
SHEET NO.



5 TYPICAL @ HIGH EMBANKMENT SECTION
SCALE 1:400



6 TYPICAL @ DEEP CUT SECTION
SCALE 1:400

PROJECT TITLE	SHEET CONTENTS	SCALE	DRAWING NO.	SHEET NO.
STUDY FOR **MINDANAO TRANSPORT CONNECTIVITY IMPROVEMENT PROJECT** **(LINK ROAD 3)**	TYPICAL ROADWAY SECTIONS (2 of 3)	A3 SIZE AS SHOWN	TS-01	

Annex 14. DENR Certification

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
KAGAWARAN NG KAPALIGIRAN AT LIKAS YAMAN

BAGONG PILIPINAS

CERTIFICATION

To Whom It May Concern:

This is to certify that the Proposed Mindanao Transport Connectivity Project (MTCIP), specifically the Link Roads in Brgy, La Fortuna and Brgy, Kibenton Impasug-ong, Bukidnon does not fall within the Boundary of Mt. Kitanglad Range Natural Park (MKRNP)-ASEAN Heritage Park per Republic Act No. 8978, also known as the Mt. Kitanglad Range Protected Area Act of 2000.

This certification is issued upon the request of ***Galerio Environmental Consultancy, Inc.,*** through Ms. Oda Beltran for whatever legal purpose it may serve best.

Done this 15TH day of March 2024 in Malaybalay City, Bukidnon Province, Philippines.

THOMAS L. CARDENTE II, Ph.D.
OIC, PENR Officer
DENR Bukidnon

San Victores St., Barangay 9, Malaybalay City, Bukidnon
E-mail add: penrobukidnon@denr.gov.ph Telephone No.: (088) 813-2104

Annex 15. Flora and Fauna Assessment Methodology

Flora Assessment

The methodology used in the flora assessment is based on the Terrestrial Ecosystems Biodiversity and Assessment Monitoring Manual (DENR-BMB, 2017). A 20-meter transect line was established and identified from the center line for both sides of the road in Main Corridor, Link Road 1, Link Road 2, & Link Road 3 as the basis for identifying existing species in the affected areas.

Nested quadrats were established along transects for the in-depth survey. The nested quadrats were marked by stakes and enclosed by nylon rope. Three dimensions of the nested quadrats were made to stratify the object of study, i.e. the secondary-growth forest and plantations:

- 10 m x 10 m - for sampling of trees with more than 10 cm diameter at breast height (DBH) and more than 4 m in height (Canopy Layer)
- 5 m x 5 m – for sampling of small to medium size trees, large herbs (e.g. banana), and large grasses (bamboo). Small to medium size trees include those having less than 10 cm DBH, less than 4 m in height. (Under Canopy Layer)
- 1 m x 1 m – for sampling of wildlings (< 1 m height), grasses, herbs, ferns, other plant forms that grow close to the ground (Ground Layer / Undergrowth)

All floral species within the established plots were identified, counted and listed for computation of diversity analysis. The species outside of the sampling plots were captured by conducting a transect walk. These floral species were listed only for determination of species richness and computation of diversity values. All plant species were assessed based on their form/habit, ecological status, conservation status and economic value/uses using available references and existing policies, local or international.

The parameters used in the assessment include the relative values for density, frequency, and dominance. Also included are the computed importance values, which determine the ranks of the species within the sampled area. Importance value determines the measure of how dominant a species is in a sampled area, thereby indicating the ecological importance of a species in a given ecosystem. As such, it gives a view of prioritizing a selected range of species for conservation, which, in turn, would greatly influence its ecosystem in terms of nutrient cycling, energy transfer, and micro-climatic effects.

The parameters mentioned and their corresponding formulas are as follows:

- **Abundance (Abun)** - the number of individuals of a species regardless of area size
- **Relative Abundance (RAbun)** - percent composition of an organism of a particular kind relative to the total number of organisms in the area

$$\frac{Abundance\ (Abun)}{Total\ abundance} \times 100$$

- **Density (Den)** – the number of individuals of a species in a given area
- **Relative Density** - Proportion of the number of individuals of one species relative to the total number of individuals of all species

$$\frac{Density\ (Den)}{Total\ Density} \times 100$$

- **Frequency (Freq)** - Number of nested quadrats or subplots in which a species is found.

$$\frac{No.of\ times\ a\ species\ occurred\ in\ all\ plots}{Total\ number\ of\ plots}$$

- ***Relative Frequency (RFreq***)- the proportion of the frequency of a species relative to all frequencies of all species in the transect

$$\frac{Frequency\ (Freq)}{Relative\ frequency\ (RFreq)} \times 100$$

- **Basal Area** - circumference at breast height occupied by each species
- **Dominance (Dom)** – the average basal area of all individuals of a species

$$\frac{Basal\ dominance\ of\ A\ species}{Total\ basal\ area}$$

- **Relative Dominance (RDom)** - Proportion of the average basal area of one species relative to the total basal area of all species

$$\frac{Dominance\ (Dom)}{Relative\ Dominance\ (RDom)} \times 100$$

- **Importance Value (IV)** - total of all relative values per species, the species with the highest value indicating the dominant species that would exert influence on the ecosystem.

$$Sum\ of\ relative\ values\ /_{No.of\ relative\ values\ used}$$

Density, Frequency and Dominance shall be used to compute the Importance Value for plant diversity, while fauna diversity will utilize relative values of Abundance and Frequency.

Biodiversity measurements were computed and analyzed using the Shannon-Weiner Diversity and Pielou's Evenness Indexes, with formulas illustrated below:

Shannon Diversity Index = H' = -[∑(pi)(ln pi)]

Where:
"H'"- represents the symbol for the amount of diversity in ecosystem (species diversity)
"pi"- represents the proportion or relative abundance of each individual species to the total (measured from 0 to 1)
"ln pi" - represents the natural logarithm of pi

Pielou's Evenness Index = J = H/Hmax = -[∑(pi)(ln pi)]/lnS,

Where:
"J" – represents the symbol for the species richness
"H'" – species diversity
"Hmax" – species maximum diversity

"S" – number of species in the community

The interpretation of the values obtained using the above formulas was based on the Fernando Biodiversity Scale, 1998 shown in the table below.

Table. Fernando Biodiversity Scale

Relative Values	Shannon-Weiner Index (H')	Pielou's Evenness Index (J')
Very High	3.5 & above	0.77-1.00
High	3.0-3.49	0.50-0.74
Moderate	2.5-2.99	0.25-0.49
Low	2.0-2.49	0.15-0.24
Very Low	1.9 & below	0.05-0.14

Fauna Assessment

The methodology used in the fauna assessment is based on the Terrestrial Ecosystems Biodiversity and Assessment Monitoring Manual (DENR-BMB, 2017).

Passive Methods

Mist Netting

Mist nets were set up along recognized flyways in the research area, providing feeding trees and roosting sites. In order to estimate the population and identify different species, volant mammals (such as fruit and insect bats) and avian (bird) species were caught using mist nets. The species that were captured in the nets were properly documented and handled before they were released back into their natural habitat. To minimize the negative ecological impact of the survey, the nets were checked twice a day: once in the evening from 9:00 p.m. to 10:00 p.m. and once early in the morning, at 4:00 a.m. to 5:00 a.m. All captured species underwent thorough documentation prior to their release. During the course of the activity, no voucher specimens were gathered.

Live Trapping

During the evaluation, spring-loaded live traps were used to capture non-volant mammals, specifically rodents. To increase the chances of catching prey, the traps were smoked to eliminate any metal odor and other smells. Peanut butter-covered roasted coconut flesh was used as bait in the traps to attract them. The traps were placed near the mist net's location, such as under fallen trees and close to its habitat. They were checked regularly in the evening after being set and again early in the morning the next day. The traps were inspected for any captures, reset if triggered, and rebaited if necessary. If the bait was discovered to be infested with ants, it was replaced.

Key Informant Interviews (KII)

Key Informant Interviews, including discussions with workers familiar with the area, were conducted to identify fauna not captured by other methods. Information on species presence and usage was gathered through field guides. The opportunistic interviews, carried out informally during the assessment, involved workers encountered on-site or nearby residents. This approach encouraged spontaneous conversations, avoiding the unease often caused by formal questionnaires. Local residents' feedback played a vital role in assessing the overall

fauna, and the collected information was systematically documented. Stakeholder engagement and the Knowledge, Information, and Intelligence (KII) process are crucial for a comprehensive fauna assessment, tapping into the valuable knowledge of nearby communities. Listening to their concerns provides firsthand insights into the project's impact on local wildlife and habitats.

Active Methods

Transect Count and Point Counts

The designated transect line was traversed twice daily, from approximately 6:00–8:00 AM and 4:00–6:00 PM, to observe active birds and other fauna. Point counts were utilized in specific areas known for frequent bird activity. The collected information encompassed identified bird species, their observed calls, and ecological details such as habits, habitat type, associations with other species, and involvement in mixed-species flocks.

Annex 16. Ambient Air Quality Sampling Methodology

List of Reference Methods for the Air Sampling Activity

Parameter	Reference Method	
	Method ID	Method Title
TSP	40 CFRPart 50: Appendix B	Method for the Determination of Suspended Particulate Matter in the Atmosphere *(High-volume Method)*
PM_{10}	40 CFR Part 50: Appendix J	Method for the Determination of PM_{10} in the Atmosphere
SO_2	40 CFR Part 50: Appendix A2	Method for the Determination of SO_2 in the Atmosphere
NO_2	James P. Lodge. Methods of Ambient Air Sampling & Analysis: Method 406	Determination of Nitrogen Dioxide Content of the Atmosphere *(Griess-Saltzman Reaction)*

Sampling Method

The collection of ambient air samples used the active, integrated sampling technique over a longer period of time. The active, integrated sampling technique extracts ambient air within the vicinity of the project area (outdoor location) through an air flow controller that regulates the rate at which air samples enter the sampling container.

List of Sampling Methods for the Air Sampling Activity

Parameter	Sampling Method	Equipment Used	Responsible Party
TSP	Filtration	BGI PQ200 Air Sampler *(Mesa laboratories, Inc.)*	GECI
PM_{10}			
SO_2	Wet Impinger	Standard Impinger *(JCG 3-gas Sampler)*	
NO_2			

Sampling Method for Airborne Particulate Matter (TSP/ PM_{10})

Ambient air was drawn at a constant flow rate into a specialty-shaped inlet using a high-volume sampler (BGI PQ200 Air Sampler), where suspended particulate matter (aerodynamic diameter =/< 100 m) was inertially separated and collected on a separate filter element. The high-volume samples can be used to determine the average ambient particulate matter over the sampling period *(United States Environmental Protection Agency, 1999)*. The filter element was then sent to a third-party DENR-accredited laboratory and analyzed. A general diagram of the typical high-volume sampler set-up is shown below:

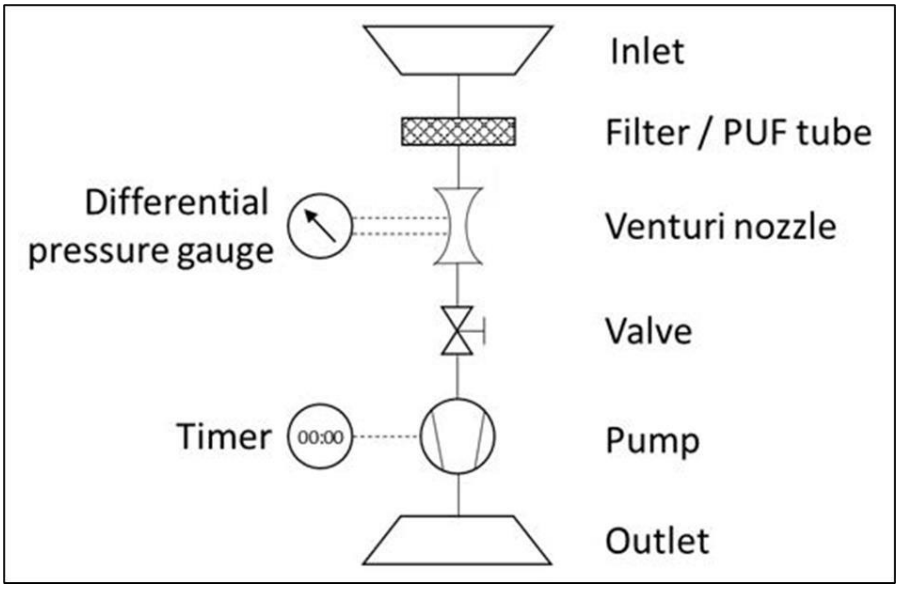


Figure. Diagram of a Typical High-volume Air Sampler (Hermanson, 2019)

Sampling Method for SO_2 and NO_2

SO_2 and NO_2 were collected using an all-glass impinger (3-gas sampler) by causing the drawn ambient air to impinge on a surface submerged in an absorbing solution passing through a control device (to determine the volume of air that passed through the filter and impinged on the absorbing solution for each parameter). The SO_2 and NO_2 present in the collected sample react with the reagents in the absorbing solutions, forming azo dyes. The collected samples were transferred to a third-party DENR-accredited laboratory and analyzed. A general diagram of a typical 3-gas sampler set-up is shown below:

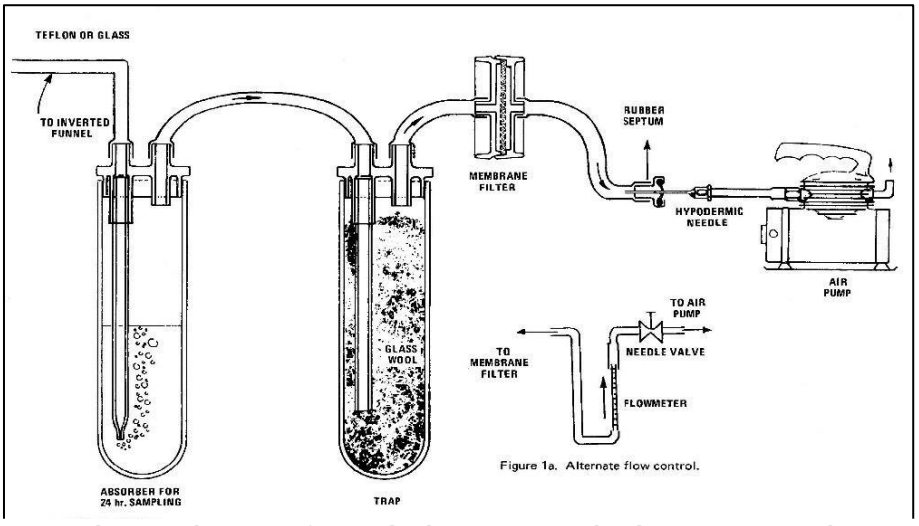


Figure. Diagram of a Typical 3-Gas Sampler (US - EPA, 1999)

Sample Analytical Method

Each sampling station was monitored for one hour using an ambient air particle sampler, BGI PQI 200, with calibration validity from February 17, 2023, to February 17, 2024, and a gas sampler, JCG Tri-gas Sampler, with calibration validity from February 17, 2023, to February 17, 2024. SO_2 and NO_2 samples were preserved in a pre-cleaned and sterilized icebox to

avoid contamination. The TSP filter was placed in a sealed envelope, while the PM_{10} and $PM_{2.5}$ filters were placed in a pre-cleaned and sterilized plastic petri dish. TSP, PM_{10}, PM2.5, SO_2, and NO_2 samples were transported and analyzed at ELARSI, Inc., Quezon Ave., Quezon City, a Department of Environment and Natural Resources (DENR)-accredited laboratory.

List of Analytical Methods Used for the Laboratory Analysis Procedure

Parameter	Analysis Method	Responsible Party
TSP	Gravimetric	3RD Party DENR Accredited Laboratory *(Elarsi, Inc.)*
SO_2	Pararosaniline *(Colorimetric)*	
NO_2	Griess-Saltzman	
PM_{10}	Gravimetric	

The following provides a description of the parameters:

- **Total Suspended Particulate (TSP)**: Total suspended particulate (TSP) refers to the mixture of a multi-phase system of airborne solid matter and low-vapor pressure liquid particles having an aerodynamic particle size of 0.01–100 micrometers and larger.
- **Sulfur Dioxide (SO2)**: Sulfur Dioxide is a colorless gas with a pungent smell at low concentrations. When SO2 emissions from fuel burning mix with water and oxygen in the air, it forms sulfate aerosols—acidic compounds that fall to the earth as acid rain.
- **Nitrogen Dioxide (NO2)**: NO2 is a reddish-brown gas with an odorless, pungent smell. NO2 is formed when fossil fuels are burned in an internal combustion engine at high temperatures. NO2 in the atmosphere interacts with water, oxygen, and other chemicals present in the air to form other toxic NOx compounds and nitrate particulates. The nitrate particles that result from NOx contribute to haze and can decrease visibility.
- **PM10**: PM10 is a type of suspended inhalable coarse particle, either solid or liquid, with a diameter of 10 mm or less. PM10 can remain suspended in the atmosphere for days to weeks, allowing the particulates to travel over long distances before deposition on the surface via gravity.
- **PM2.5:** PM2.5 is also a type of suspended particulate matter, but much finer than PM10. Pollution from fine particulates (PM2.5) is a concern when levels in the air are unhealthy. Breathing in unhealthy levels of PM2.5 can increase the risk of health problems like heart disease, asthma, and low birth weight. Unhealthy levels can also reduce visibility and cause the air to appear hazy.

The air sampling parameters and guideline values are lifted from DAO 2000–81 and DAO 2013–13. Due to instrument sensor malfunctions, ozone, carbon monoxide, and lead were not measured in all sampling sites. Philippine legislation related to air quality comprises:

- Republic Act (RA) 8749: Clean Air Act of 1999
- DAO 2000-81: Implementing Rules and Regulations of RA 8749
- DAO 2013-13: PM2.5 Guideline Values

Annex 17. PAGASA Climatological Normal and Extreme

Republic of the Philippines
Department of Science and Technology
Philippine Atmospheric, Geophysical and Astronomical Services Administration
Climatology and Agrometeorology Division
CLIMATE AND AGROMET DATA SECTION
PAGASA Science Garden Complex, Agham Road, Diliman Quezon City, Philippines
Telefax: (632)-434-2698

CLIMATOLOGICAL EXTREMES

STATION: **DAVAO CITY, DAVAO DEL SUR**
YEAR: **AS OF 2021**

LATITUDE: **07°07'40.41"N**
LONGITUDE: **125°39'17.43"E**
ELEVATION: **17.29m**

MONTH	TEMPERATURE (°C)				GREATEST DAILY RAINFALL (mm)		STRONGEST WINDS (mps)			SEA LEVEL PRESSURES (mbs)			
	HIGH	DATE	LOW	DATE	AMOUNT	DATE	SPD	DIR	DATE	HIGH	DATE	LOW	DATE
JAN	35.0	01-15-1973	17.0	01-10-1912	122.4	01-28-2000	22	N	01-25-1962	1018.6	01-17-1959	1000.1	01-22-1989
	35.0	01-22-2016											
FEB	36.7	02-25-1915	16.1	02-03-1962	124.3	02-20-1970	20	NNE	02-08-2004	1018.4	02-27-1969	1001.9	02-13-2001
MAR	36.7	03-25-1915	17.4	03-16-1912	132.2	03-27-1988	15	N	03-03-1976	1018.5	03-30-1958	1000.1	03-19-2004
APR	37.0	04-30-1977	19.1	04-13-1912	193.0	04-02-1993	18	N	04-23-1974	1016.6	04-07-1965	1001.8	04-12-1985
MAY	37.3	05-05-1905	20.2	05-01-1914	174.3	05-08-1966	31	NNW	05-15-1976	1016.5	05-09-1957	1002.3	05-30-1970
JUNE	35.2	06-02-1905	20.3	06-10-1961	176.4	06-06-2008	21	NW	06-18-1962	1016.6	06-06-1966	1001.2	06-30-1970
JULY	36.0	07-25-2021	20.0	07-03-1917	179.6	07-02-1902	19	NE	07-06-2001	1016.0	07-02-1965	999.6	07-03-2001
AUG	36.0	08-02-1905	18.5	08-07-1918	242.6	08-02-1902	15	N	08-14-1998	1015.7	08-03-1965	1001.2	08-17-1990
							15	N	08-17-2019				
SEP	35.1	09-17-1977	20.0	09-03-1916	123.7	09-21-1911	20	S	09-21-1983	1018.2	09-22-1950	1001.3	09-24-1970
OCT	35.9	10-08-2016	19.2	10-19-1918	153.7	10-08-2013	16	NW	10-22-1995	1016.1	10-07-1959	998.6	10-18-1970
NOV	36.2	11-17-1908	19.1	11-14-1911	114.4	11-24-2002	15	N	11-08-1974	1016.8	11-17-1965	999.8	11-06-1996
DEC	35.0	12-08-1987	16.2	12-24-1918	153.6	12-02-1910	15	N	12-15-1962	1016.7	12-12-2002	1001.2	12-05-2001
	35.0	12-05-2017											
ANNUAL	**37.3**	**05-05-1905**	**16.1**	**02-03-1962**	**242.6**	**08-02-1902**	**31**	**NNW**	**05-15-1976**	**1018.6**	**01-17-1959**	**998.6**	**10-18-1970**
Period of Record	**1903 - 2021**				**1902 - 2021**		**1950 - 2021**			**1949 - 2021**			

PREPARED BY: **CADS/CAD/PAGASA**

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CLIMATOLOGICAL EXTREMES

STATION: **MALAYBALAY, BUKIDNON**
YEAR: **AS OF 2021**

LATITUDE: **08°09'04.80"N**
LONGITUDE: **125°08'02.04"E**
ELEVATION: **627m**

MONTH	TEMPERATURE (°C)				GREATEST DAILY RAINFALL (mm)		STRONGEST WINDS (mps)			SEA LEVEL PRESSURES (mbs)			
	HIGH	DATE	LOW	DATE	AMOUNT	DATE	SPD	DIR	DATE	HIGH	DATE	LOW	DATE
JAN	34.0	01-23-1988	11.7	01-16-1956	140.6	01-14-2014	22	NE	01-07-1974	1020.5	01-28-1949	987.0	01-07-1972
FEB	35.2	02-05-2002	10.0	02-04-1973	109.2	02-07-1962	19	NE	02-10-1974	1019.4	02-19-1949	998.1	02-28-1972
MAR	35.5	03-31-1990	12.0	03-01-1949	170.6	03-19-1982	14	NE	03-01-1992	1019.6	03-26-1949	998.9	03-17-1970
APR	36.4	04-15-2016	12.5	04-02-1996	184.2	04-06-1999	21	NW	04-05-1966	1019.2	04-27-1949	996.6	04-24-1971
MAY	36.2	05-16-1998	14.0	05-08-2010	126.3	05-15-1991	18	WNW	05-05-1966	1019.9	05-02-1949	997.9	05-25-1971
JUNE	34.5	06-14-2017	13.0	06-26-1962	130.4	06-07-2002	18	N	06-20-1985	1019.6	06-11-1949	999.4	06-14-1974
JULY	33.4	07-12-2021	14.0	07-04-2017	138.2	07-26-2018	15	S	07-28-1992	1015.3	07-22-2015	997.4	07-04-1967
AUG	34.0	08-31-2021	15.0	08-24-2010	113.6	08-01-1978	22	SW	08-28-1984	1016.2	08-11-1997	998.0	08-23-1967
			15.0	08-10-2016									
			15.0	08-22-2020									
SEP	34.0	09-03-2007	15.3	09-21-1986	128.6	09-29-2010	18	NW	09-02-1971	1015.9	09-30-1997	998.6	09-20-1971
OCT	34.0	10-31-1995	14.9	10-30-1968	195.9	10-08-1979	20	N	10-21-1982	1016.3	10-11-1997	960.6	10-12-1970
NOV	34.8	11-29-1968	13.1	11-29-1967	144.8	11-20-1993	19	SW	11-22-1973	1015.9	11-07-1997	996.1	11-20-1973
DEC	33.6	12-08-2002	12.5	12-06-2009	112.4	12-21-2017	14	NE	12-21-1973	1017.4	12-12-2002	998.2	12-24-1954
ANNUAL	**36.4**	**04-15-2016**	**10.0**	**02-04-1973**	**195.9**	**10-08-1979**	**22**	**NE**	**01-07-1974**	**1020.5**	**01-28-1949**	**960.6**	**10-12-1970**
							22	**SW**	**08-28-1984**				
Period of Record	**1949 - 2021**				**1952 - 2021**		**1966 - 2021**			**1949 - 2021**			

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CLIMATOLOGICAL EXTREMES

STATION: **GENERAL SANTOS, SOUTH COTABATO**
YEAR: **AS OF 2021**

LATITUDE: **06°03'25.85"N**
LONGITUDE: **125°06'11.19"E**
ELEVATION: **132.199m**

MONTH	TEMPERATURE (°C)				GREATEST DAILY RAINFALL (mm)		STRONGEST WINDS (mps)			SEA LEVEL PRESSURES (mbs)			
	HIGH	DATE	LOW	DATE	AMOUNT	DATE	SPD	DIR	DATE	HIGH	DATE	LOW	DATE
JAN	37.5	01-24-1988	17.1	01-24-1965	105.9	01-17-1966	20	S	01-09-1982	1017.0	01-16-1959	1000.2	01-28-1988
FEB	38.0	02-18-1992	17.2	02-04-1958	96.5	02-22-2000	16	NNE	02-03-1975	1017.0	02-12-2019	999.7	02-15-1988
	38.0	02-04-2016											
MAR	38.9	03-28-1991	16.9	03-09-1963	60.8	03-28-2017	18	SW	03-22-1983	1017.7	03-30-1958	1001.3	03-29-1988
APR	39.4	04-16-2016	18.3	04-11-1963	109.0	04-17-2004	19	S	04-19-1971	1016.8	04-01-1966	1000.5	04-11-1985
MAY	38.5	05-05-1998	18.7	05-14-1951	151.8	05-18-2021	16	NNE	05-19-2007	1017.3	05-09-1957	1001.6	05-13-1990
							16	ENE	05-07-2021				
JUNE	37.0	06-06-1991	17.9	06-10-1961	142.0	06-22-1983	17	S	06-24-1972	1016.0	06-02-1966	1001.4	06-11-1986
	37.0	06-02-2014											
JULY	37.0	07-16-2016	17.2	07-09-1985	76.0	07-22-1983	17	SSE	07-24-1972	1017.3	07-02-1965	1002.2	07-26-1992
AUG	36.5	08-29-2016	17.5	08-16-1985	126.0	08-28-1959	18	NW	08-23-2000	1015.8	08-23-1965	1002.0	08-12-1986
SEP	37.0	09-23-1992	18.0	09-05-1985	189.5	09-08-1977	18	SSE	09-14-1972	1016.0	09-15-1963	1001.8	09-26-1988
OCT	37.0	10-16-1980	18.2	10-08-1961	101.0	10-18-1970	17	S	10-12-1972	1016.0	10-08-1959	1001.0	10-12-1970
NOV	37.0	11-01-1994	18.3	11-28-1951	102.1	11-09-1962	25	SE	11-06-2007	1018.2	11-16-1965	1000.5	11-06-1996
DEC	37.5	12-04-1987	18.0	12-30-1950	62.2	12-14-1964	15	NE	12-05-1997	1017.1	12-02-1966	1000.9	12-08-1984
ANNUAL	**39.4**	**04-16-2016**	**16.9**	**03-09-1963**	**189.5**	**09-08-1977**	**25**	**SE**	**11-06-2007**	**1018.2**	**11-16-1965**	**999.7**	**02-15-1988**
Period of Record	**1949 - 2021**				**1949-2021**		**1966 - 2021**			**1949 - 2021**			

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CLIMATOLOGICAL NORMALS

STATION: **MALAYBALAY, BUKIDNON**
PERIOD: **1991 - 2020**

LATITUDE: **08°09'04.80"N**
LONGITUDE: **125°08'02.04"E**
ELEVATION: **689.5 m**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16a)	(16b)
MONTH	RAINFALL		TEMPERATURE						VAPOR PRESS. (mbs)	RH (%)	MSLP (mbs)	WIND		CLOUD AMT. (okta)	NO. OF DAYS W/	
	AMOUNT (mm)	NO. OF RD	MAX (°C)	MIN (°C)	MEAN (°C)	DRY BULB (°C)	WET BULB (°C)	DEW POINT (°C)				DIR (16pt)	SPD (mps)		TSTM	LTNG
JAN	174.8	14	29.1	17.9	23.5	23.3	21.5	20.7	24.5	86	1010.0	S	1	6	2	1
FEB	112.8	10	29.7	17.6	23.6	23.4	21.4	20.5	24.2	84	1010.3	E	1	5	2	1
MAR	104.1	10	30.7	17.7	24.2	24.1	21.7	20.6	24.5	82	1010.1	S	1	5	2	2
APR	118.3	10	31.6	18.3	25.0	24.8	22.3	21.3	25.4	81	1009.3	S	1	5	5	3
MAY	240.1	17	31.1	19.2	25.2	25.1	22.9	22.1	26.6	84	1009.0	S	1	6	11	6
JUN	319.5	20	29.9	19.2	24.6	24.4	22.7	22.0	26.5	87	1009.1	S	1	6	9	6
JUL	350.2	21	29.1	19.0	24.0	23.8	22.3	21.7	26.0	88	1009.2	S	1	7	10	6
AUG	300.7	19	29.2	18.9	24.0	23.8	22.3	21.6	25.9	88	1009.3	S	1	7	10	6
SEP	290.8	20	29.5	18.8	24.1	23.8	22.3	21.6	25.9	88	1009.5	S	1	7	11	7
OCT	292.1	19	29.8	18.8	24.3	24.0	22.4	21.7	26.1	87	1009.2	S	1	6	10	7
NOV	177.6	15	30.1	18.5	24.3	24.1	22.3	21.5	25.8	86	1008.9	S	1	6	5	4
DEC	160.9	14	29.8	18.3	24.0	23.9	22.0	21.2	25.4	86	1009.2	S	1	6	3	3
ANNUAL	**2,641.9**	**189**	**30.0**	**18.5**	**24.2**	**24.0**	**22.2**	**21.4**	**25.6**	**86**	**1009.5**	**S**	**1**	**6**	**80**	**52**

Definition of Terms:

Climatological Normals
- Period averages computed for a uniform and relative long period comprising at least three (3) consecutive10-year period.

Rainfall Amount (column 2)
- The amount of precipitation (rain, hail, etc.) expressed in millimeters depth of the layer of the water which has fallen.

Number of Rainy Days (column 3)
- A rainy day is defined as a period of 24 hours beginning at 8AM to 8 AM of the next day during which at least 1 mm of rain is recorded.

Maximum Temperature (column 4)
- The maximum temperature in °C recorded for the day, usually occurring in the early afternoon.

Minimum Temperature (column 5)
- The minimum temperature in °C recorded for the day, usually occurring during early hours of the morning (before sunrise).

Mean Temperature (column 6)
- The average of the maximum and minimum temperature in °C recorded for the day. Mean Temperature = Maximum + Minimum / 2

Dry Bulb Temperature (column 7)
- It gives the air temperature in °C at the time of observation.

Wet Bulb Temperature (column 8)
- It gives the temperature in °C that an air parcel would have if cooled adiabatically to saturation at constant pressure by evaporating water in it.

Dew Point Temperature (column 9)
- The temperature in °C at a given pressure, to which the air must be cooled to become saturated. It is the temperature when atmospheric moisture begins to condense to liquid forming "dew" upon objects.

Vapor Pressure (column10)
- Denotes the partial pressure of water vapor in atmosphere in millibars (mbs). As the water evaporates, additional water vapor is introduced into space above and pressure increases slightly as the new vapor is added. The increasing pressure is due to an increase in the partial pressure of water vapor.

Relative Humidity (column 11)
- The ratio of the amount of water vapor actually in the air to the maximum amount the air can hold at that temperature.

Mean Sea Level Pressure (column 12)
- The force exerted by the weight of the atmosphere on a unit area at mean sea level. It is also the atmospheric pressure at mean sea level measured in millibars.

Prevailing Winds (column 13 & 14)
- The prevailing wind direction expressed using the 16 compass points which is most frequently observed during a given period while the average wind speed in meters per second is the arithmetic average of the observed wind speed.

Cloud Amount (column 15)
- The amount of cloud present in the sky, expressed in oktas of the sky cover. Okta is the function used in denoting cloud amount and is equal to 1/8 of the whole sky.

Days with Thunderstorm (column 16a)
- A thunderstorm day is defined as an observational day during which thunder is recorded at the station.

Days with Lightning (column 16b)
- A day with lightning is reported whenever lightning is observed.

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CLIMATOLOGICAL NORMALS

STATION: **GENERAL SANTOS, SOUTH COTABATO**
PERIOD: **1991 - 2020**

LATITUDE: **06°03'25.85"N**
LONGITUDE: **125°06'11.19"E**
ELEVATION: **132.199m**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16a)	(16b)
MONTH	RAINFALL		TEMPERATURE						VAPOR PRESS. (mbs)	RH (%)	MSLP (mbs)	WIND		CLOUD AMT. (okta)	NO. OF DAYS W/	
	AMOUNT (mm)	NO. OF RD	MAX (°C)	MIN (°C)	MEAN (°C)	DRY BULB (°C)	WET BULB (°C)	DEW POINT (°C)				DIR (16pt)	SPD (mps)		TSTM	LTNG
JAN	96.9	9	32.3	22.6	27.5	27.4	24.4	23.3	28.6	79	1009.6	NE	2	5	2	2
FEB	53.0	7	32.9	22.8	27.9	27.7	24.4	23.1	28.4	76	1009.9	NE	2	5	2	2
MAR	55.3	6	34.0	23.0	28.5	28.3	24.7	23.4	28.7	75	1009.9	NE	2	5	2	3
APR	54.1	6	34.3	23.5	28.9	28.8	25.2	23.9	29.7	75	1009.4	S	2	5	4	5
MAY	72.2	8	33.5	23.6	28.5	28.4	25.3	24.2	30.3	78	1009.3	S	2	5	7	8
JUN	101.9	12	32.2	23.1	27.7	27.6	25.0	24.1	30.0	82	1009.5	S	1	6	6	5
JUL	98.1	11	31.7	22.8	27.2	27.1	24.7	23.9	29.7	83	1009.5	S	1	6	4	4
AUG	91.3	11	31.7	22.8	27.3	27.2	24.7	23.9	29.6	82	1009.7	S	1	6	4	4
SEP	83.3	10	32.2	22.8	27.5	27.4	24.8	23.8	29.6	81	1009.7	S	1	6	5	5
OCT	99.6	10	32.6	22.8	27.7	27.6	24.9	23.9	29.8	81	1009.3	S	1	5	6	6
NOV	77.5	8	32.8	23.0	27.9	27.8	25.0	24.0	29.8	80	1008.7	S	2	5	5	5
DEC	74.9	8	32.6	23.0	27.8	27.7	24.7	23.7	29.3	79	1008.6	W	2	5	3	3
ANNUAL	**958.1**	**106**	**32.7**	**23.0**	**27.9**	**27.7**	**24.8**	**23.8**	**29.5**	**79**	**1009.4**	**S**	**2**	**5**	**50**	**52**

Definition of Terms:

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Mean Temperature (column 6)
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- It gives the temperature in °C that an air parcel would have if cooled adiabatically to saturation at constant pressure by evaporating water in it.

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- The temperature in °C at a given pressure, to which the air must be cooled to become saturated. It is the temperature when atmospheric moisture begins to condense to liquid forming "dew" upon objects.

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CLIMATOLOGICAL NORMALS

STATION: **DAVAO CITY, DAVAO DEL SUR**
PERIOD: **1991 - 2020**

LATITUDE: **07°07'40.41"N**
LONGITUDE: **125°39'17.43"E**
ELEVATION: **17.29m**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16a)	(16b)
MONTH	RAINFALL		TEMPERATURE						VAPOR PRESS. (mbs)	RH (%)	MSLP (mbs)	WIND		CLOUD AMT. (okta)	NO. OF DAYS W/	
	AMOUNT (mm)	NO. OF RD	MAX (°C)	MIN (°C)	MEAN (°C)	DRY BULB (°C)	WET BULB (°C)	DEW POINT (°C)				DIR (16pt)	SPD (mps)		TSTM	LTNG
JAN	166.8	11	30.9	23.7	27.3	26.8	24.3	23.3	28.7	82	1010.1	N	2	6	3	4
FEB	114.4	9	31.3	23.7	27.5	27.0	24.2	23.1	28.3	80	1010.4	N	3	6	3	3
MAR	106.6	9	32.3	24.1	28.2	27.7	24.5	23.3	28.7	78	1010.2	N	2	5	5	5
APR	114.6	9	33.1	24.7	28.9	28.5	25.2	24.0	29.9	77	1009.6	N	2	5	9	11
MAY	166.2	13	32.7	25.0	28.9	28.5	25.7	24.8	31.3	80	1009.2	S	2	6	16	20
JUN	192.7	14	32.0	24.7	28.4	28.0	25.5	24.6	31.0	82	1009.2	S	2	6	15	17
JUL	168.6	13	31.7	24.5	28.1	27.8	25.3	24.4	30.6	82	1009.0	S	2	6	13	16
AUG	167.4	12	31.8	24.5	28.2	27.9	25.3	24.4	30.5	81	1009.2	S	2	6	13	17
SEP	162.0	11	32.2	24.4	28.3	28.0	25.3	24.3	30.5	81	1008.3	S	2	6	14	17
OCT	194.8	12	32.6	24.4	28.5	28.0	25.3	24.3	30.5	81	1008.9	S	2	6	16	19
NOV	139.7	12	32.2	24.4	28.3	27.8	25.2	24.2	30.3	81	1008.7	N	2	6	12	14
DEC	141.7	11	31.6	24.2	27.9	27.5	24.9	23.9	29.8	81	1009.0	N	2	6	6	9
ANNUAL	**1,835.5**	**136**	**32.0**	**24.4**	**28.2**	**27.8**	**25.0**	**24.1**	**30.0**	**81**	**1009.3**	**N**	**2**	**6**	**125**	**152**

Definition of Terms:

Climatological Normals
- Period averages computed for a uniform and relative long period comprising at least three (3) consecutive10-year period.

Rainfall Amount (column 2)
- The amount of precipitation (rain, hail, etc.) expressed in millimeters depth of the layer of the water which has fallen.

Number of Rainy Days (column 3)
- A rainy day is defined as a period of 24 hours beginning at 8AM to 8 AM of the next day during which at least 1 mm of rain is recorded.

Maximum Temperature (column 4)
- The maximum temperature in °C recorded for the day, usually occurring in the early afternoon.

Minimum Temperature (column 5)
- The minimum temperature in °C recorded for the day, usually occurring during early hours of the morning (before sunrise).

Mean Temperature (column 6)
- The average of the maximum and minimum temperature in °C recorded for the day. Mean Temperature = Maximum + Minimum / 2

Dry Bulb Temperature (column 7)
- It gives the air temperature in °C at the time of observation.

Wet Bulb Temperature (column 8)
- It gives the temperature in °C that an air parcel would have if cooled adiabatically to saturation at constant pressure by evaporating water in it.

Dew Point Temperature (column 9)
- The temperature in °C at a given pressure, to which the air must be cooled to become saturated. It is the temperature when atmospheric moisture begins to condense to liquid forming "dew" upon objects.

Vapor Pressure (column10)
- Denotes the partial pressure of water vapor in atmosphere in millibars (mbs). As the water evaporates, additional water vapor is introduced into space above and pressure increases slightly as the new vapor is added. The increasing pressure is due to an increase in the partial pressure of water vapor.

Relative Humidity (column 11)
- The ratio of the amount of water vapor actually in the air to the maximum amount the air can hold at that temperature.

Mean Sea Level Pressure (column 12)
- The force exerted by the weight of the atmosphere on a unit area at mean sea level. It is also the atmospheric pressure at mean sea level measured in millibars.

Prevailing Winds (column 13 & 14)
- The prevailing wind direction expressed using the 16 compass points which is most frequently observed during a given period while the average wind speed in meters per second is the arithmetic average of the observed wind speed.

Cloud Amount (column 15)
- The amount of cloud present in the sky, expressed in oktas of the sky cover. Okta is the function used in denoting cloud amount and is equal to 1/8 of the whole sky.

Days with Thunderstorm (column 16a)
- A thunderstorm day is defined as an observational day during which thunder is recorded at the station.

Days with Lightning (column 16b)
- A day with lightning is reported whenever lightning is observed.

PREPARED BY: **CADS/CAD/PAGASA**

Annex 18. LGU Covered by the MTCIP

Region	Province	City/Municipality	Barangays
REGION X NORTHERN MINDANAO	Misamis Oriental	Cagayan de Oro City	Puerto
	Bukidnon	Manolo Fortich	Mambatangan Alae Lunocan San Miguel Diclum Tankulan (Pob) Lingion Darilig Maluko
		Sumilao	San Vicente Kisolon
		Impasug-ong	Poblacion La Fortuna Capitan Bayong Cawayan Kibenton Impalutao
		Malaybalay City	Dalwangan Patpat Kalasungay Sumpong Barangay 2 Barangay 3 Barrangay 4 Barangay 5 Barangay 7 Barangay 8 Barangay 9 Casisang San Jose Laguitas Aglayan Cabangahan Bangcud
		Valencia City	Colonia Mailag Bagontaas Poblacion Lumbo
		Maramag	Dologon Tubigon Bayabason Panadtalan Anahawon North Poblacion South Poblacion Camp 1
		Quezon	San Jose Poblacion (kiokong) Libertad Salawagan Mibantang\ Cebole Pinalayan Kiburiao Puntian Palacapao
		Kitatao	East Dalurong Kahusayan Sinuda Kipilas Kiulom
REGION XI DAVAO REGION	Davao del Sur	Davao City	Datu Salumay Baganihan Marilog Buda Salaysay Suawan (Tuli) Tamugan Lacson Malamba Bantol Malabog Mabuhay Calinan Riverside Los Amigos Ula Tugbok Mintal Santo Nino Catalunan Pequeno Talomo Poblacion Matina Crossing Ma-a Bucana Barangay 5-A Barangay 6-A Barangay 2-A Barangay 1-A Barangay 38-D

Region	Province	City/Municipality	Barangays
			Barangay 39-D Bago Aplaya Dumoy Lubogan Toril (Poblacion) Crossing Bayabas Marapangi Lizada Sirawan Binugao
		Santa Cruz	Inawayan Darong Astorga Coronon Zone I Zone II Zone III Zone IV Tuban Tagabuli Bato
		Digos City	Sinawilan Cogon Kiagot Zone 2 (Pob) Zone 3 (Pob) Zone 1 (Pob) San Jose (Balutakay)
		Hagonoy	Balutakay Leiling Hagonoy Crossing Guihing Palique
		Padada	Northern Paligue Southern Paligue Don Sergio Osmena Almendras NC Ordaneza District Upper Limozo Harada Butai
		Sulop	Talas Palili Kiblagon
		Malalag	New Baclayon Kiblangon Tagansule Bolton
		Demoloc	Malita
	Davao del Norte	Panabo City	Malativas Consolacion Kauswagan Cacao Katipunan Little Panay Datu Abdul Dadia New Visayas Gredu (Poblacio) New Pandan (Pob)
	Davao Occidental	Santa Maria	Poblacion San Isidro Pongpong San Antonio Datu Intan
REGION XII SOCCSKSARGEN	South Cotabato	General Santos City	Batomelong Tinagacan Katangawan Ligaya Lagao Dadiangas North Labangal Apopong
	Sarangani	Malungon	Poblacion Upper Mainit San Miguel San Roque Kinabalan

Source: Galerio Environment Consultancy Inc., Data Analysis Report

Annex 19. Environmental Risk Assessment (ERA)

1. Introduction

1.1 Objective of the ERA

This ERA aims to identify and analyze the hazards and assess the risks associated with the proposed Mindanao Transport Connectivity Improvement Project (MTCIP). The study includes a characterization of the consequences of identified potential hazards in terms of loss of human lives or injuries, damage to or loss of assets, and environmental risks. It likewise aims to present mitigating measures to control the hazards. The project involves the improvement, rehabilitation, upgrading, construction, and maintenance of a total of 421.12 km of road corridor traversing the areas of Cagayan de Oro, Bukidnon, Davao provinces, Sarangani, and General Santos City. Four existing highways will be upgraded, rehabilitated, and improved. These are the following: Sayre Highway, Bukidnon-Davao Road, Digos-Makar Road, and Davao-Cotabato Road. Also to be upgraded and/or constructed are three link roads, the first of which is wholly within the Municipality of Impasug-ong, Bukidnon; the second extends eastward from the Davao-Bukidnon Highway to the City of Panabo, Davao del Norte; and the third link road extends northeastward from the Digos-Makar Road in the Municipality of Malungon, Sarangani, to the Municipality of Santa Maria, Davao Occidental.

1.2 Scope and Limitations

This ERA involves the analysis of the various potential safety (fire, explosion, toxicity) and physical hazards related to the MTCIP. It complies with the requirements of the Procedural Guidelines for Scoping of Environmental Risk Assessment (Annex 2-7e) of the Revised Procedural Manual of DENR AO 03-30 and focuses on safety risks, which are characterized by low probability, high consequence, accidental nature, and acute effects" (EMB-EIAMD, 2007). It is aligned with the World Bank's ESS1 Guidance Note on Hazard or Risk Assessment, which states that "hazard or risk assessment is an instrument for identifying, analyzing, and controlling hazards associated with the presence of dangerous materials and conditions at a project site".

Geological and natural hazards are not extensively covered in this section, as these risks are covered in separate sections of the ESIA and in other geological and geotechnical studies for the project. The ERA likewise does not include environmental impacts from normal and other planned operations, as these are discussed in other sections of the ESIA Report.

1.3 ERA Framework

The Procedural Manual for DAO 2003-30 (Annex 2-7e) defines environmental risk assessment as "the use of universally accepted and scientific methods to assess the risks associated with a project. Risk is defined as a measure of potential human injury, death, economic loss, or environmental damage. It is determined based on the probability (likelihood) of the loss, injury, death, or damage occurring and the severity (magnitude) of the loss, injury, death, or damage if it occurs. In simple terms, risk involves two measurable parameters: severity and probability.

The general ERA process is illustrated in Figure 1. The various elements and steps in the risk assessment procedure are elaborated on in the succeeding sections.

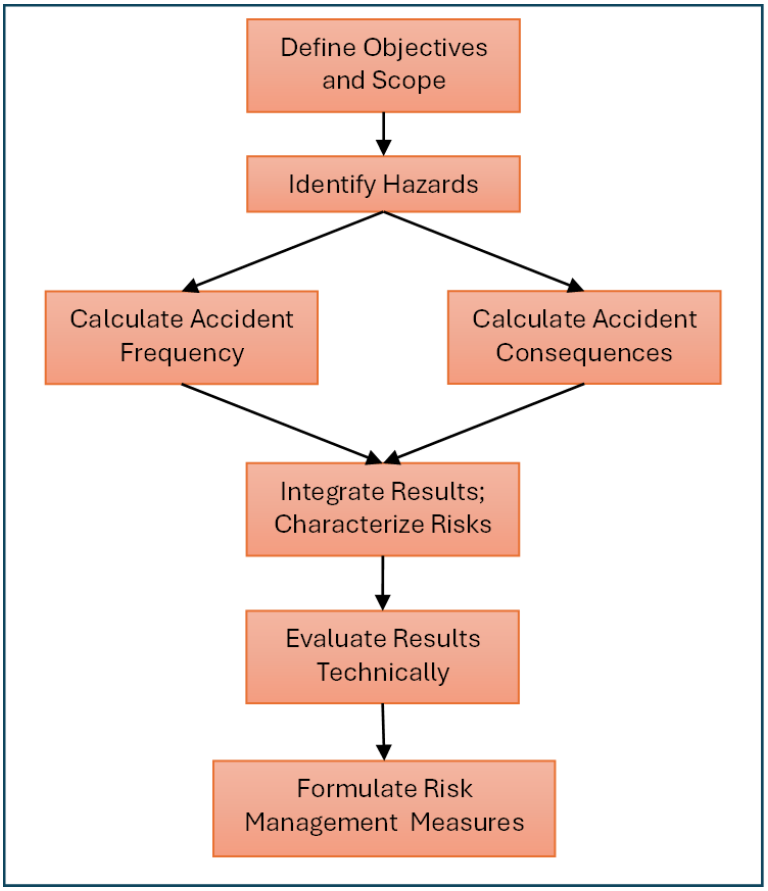

Figure 1. The Risk Assessment Process

2. ERA Methodology

Hazards were rated as to their consequence severity ("C") and their frequency or probability of occurrence ("F") using 5x5 rating charts. Table 1 and Table 2 show the rating charts for consequence severity and frequency of occurrence, respectively. Indicative risks were characterized by integrating the results of the Consequence Severity Rating (C) and the Frequency of Occurrence Rating (F) using a 5x5 Risk Rating Matrix as shown in Table 3.

2.1 Consequence Severity Analysis

Consequence severity analysis involved the qualitative description of possible impacts on people, assets, and the environment in the event of accidents or incidents due to the identified hazards. An accident or consequence is graded according to a Consequence Severity Rating Chart, as shown in Table 1. The rating ranges from 1 to 5, with 1 being the lowest consequence and 5 having the highest consequence severity.

Table 1. The Consequence Severity Rating Chart Used in Consequence Analysis

RATING	DESCRIPTION	CONSEQUENCE/IMPACT		
		ON-SITE HEALTH AND SAFETY	ENVIRONMENT AND COMMUNITY	ASSETS
1	Very low	Self-administered first aid treatment; No	No community complaints; no corrective actions required; No breach of	No property damage

RATING	DESCRIPTION	CONSEQUENCE/IMPACT		
		ON-SITE HEALTH AND SAFETY	ENVIRONMENT AND COMMUNITY	ASSETS
		specific treatment	regulations	
2	Low	First Aid treatment injury	Impacts confined to site; corrective actions required; no breach of regulations	Slight/temporary damage and nuisance to one or more properties
3	Moderate	Medical treatment injury; possible loss time injury	Off-site environmental/ community damage could easily be contained or prevented; breach of regulations	Significant but temporary damage to property
4	High	Injuries require hospitalization	May result to uncontained environmental or community damage; multiple community complaints; may result to civil prosecution	Sustained damage to property lasting many months
5	Very High	Fatalities; Permanent disabilities	Long term environmental damage; May result to criminal prosecution	Long term and possible permanent loss of property

2.2 Probability/Frequency Analysis

The probability or frequency analysis of accidents or incidents due to the realization of project hazards was described using a Probability of Occurrence Rating Chart, as shown in Table 2. Probability (frequency) was assigned values ranging from 1 to 5, with 1 corresponding to the lowest probability and 5 having the highest probability value.

Table 2. The Probability of Occurrence Rating Chart Used in Frequency Analysis

RATING	DESCRIPTION	EXPLANATION
1	Rare	Might occur at some time in exceptional circumstances
2	Unlikely	Could occur at some time although unlikely
3	Possible	Might occur at some time
4	Likely	Will probably occur, has happened
5	Almost Certain	Expected to occur, quite common

2.3 Risk Characterization

Risk characterization involved the integration of the results of the consequence severity analysis and consequence probability analysis. For purposes of risk prioritization, indicative risk (IR) values were computed for each identified hazard by computing the product of the severity rating and probability rating values. Table 3 shows the guide for interpreting the risk matrix.

Table 3. Risk Matrix

Qualitative Risk Matrix			Probability/Frequency				
			1	2	3	4	5
			Rare	Unlikely	Possible	Likely	Almost Certain
Consequence/ Impact	5	Very High	5	10	15	20	25
	4	High	4	8	12	16	20
	3	Moderate	3	6	9	12	15
	2	Low	2	4	6	8	10

Qualitative Risk Matrix			Probability/Frequency				
			1	2	3	4	5
			Rare	Unlikely	Possible	Likely	Almost Certain
	1	Very Low	1	2	3	4	5
		Low Risk		Medium Risk			High Risk

3. ERA Scoping and Risk Screening of Hazardous Substances at the Project Site

ERA scoping and risk screening procedures were undertaken to determine the level of environmental risk assessment to be undertaken. The criteria and process used in risk screening were based on Annex 2-7e (Guidelines for the Conduct of Environmental Risk Assessment) of the Revised Procedural Manual of DAO 2003-30.

The level of ERA coverage is defined by the type of hazardous substance and the expected maximum inventory of this substance to be stored or handled at the project site at any one time. The levels of ERA coverage are as follows (Annex 2-7e of the RPM of DAO 2003-30):

- Level 2: Facilities that will use, manufacture, process, or store hazardous materials in excess of Level 2 threshold inventory shall be required to conduct a quantitative risk assessment (QRA) and prepare an emergency or continuity plan based on the results of the QRA;
- Level 1: Facilities that will use, manufacture, process, or store hazardous materials in excess of Level 1 threshold inventory shall be required to prepare an emergency or contingency plan based on the worst-case scenario. The plan shall be based on a Hazard Analysis study and
- Risk screening level: specific facilities or the use of certain processes shall require the conduct of a risk screening study even if the projected or estimated inventory does not reach the threshold levels.

The project is not expected to use, handle, transport, or store significant amounts of substances that are explosive, flammable, oxidizing, or toxic. For the purpose of refueling its equipment and vehicles, it may utilize diesel tanker trucks, the volume of which is minimal (much less than the DENR Level 1 Threshold Inventory for diesel). Classified as a flammable substance, the DENR Level 1 Threshold Inventory for diesel is 5000 tons. Given this, the level of ERA coverage for this project is a risk screening level. It is required to conduct a risk screening study and prepare an emergency plan based on a hazard analysis. Figure 2 shows the procedure and results of the ERA scoping.

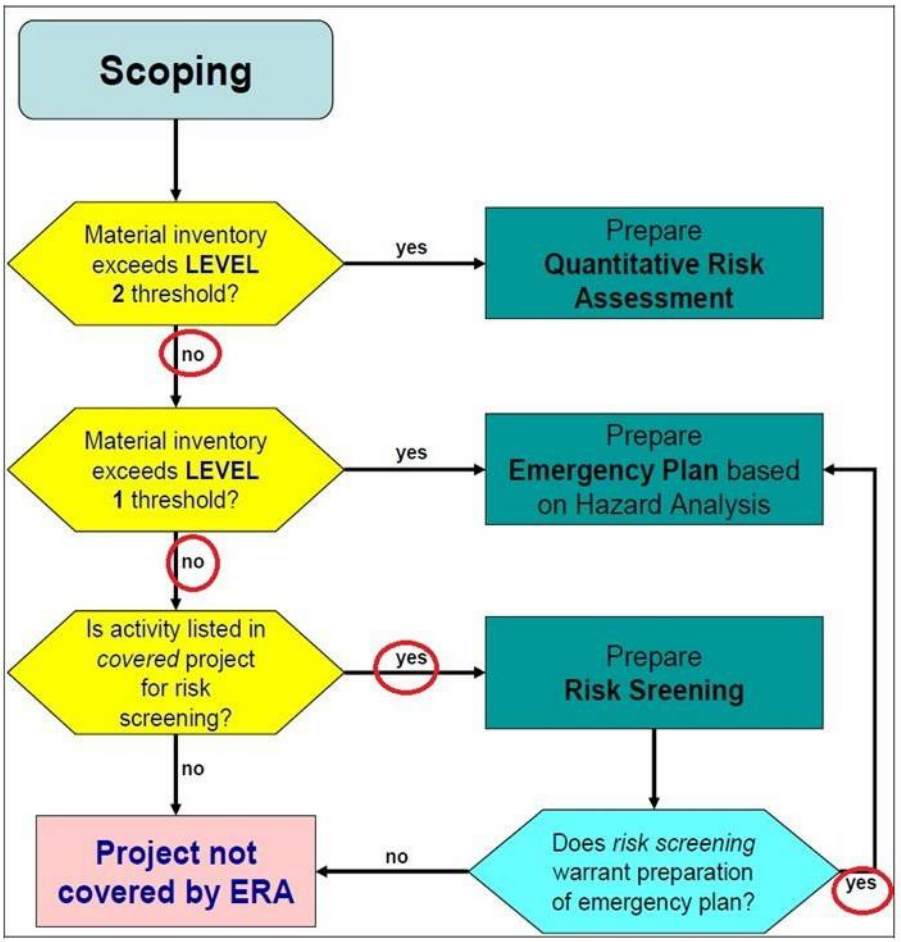

Figure 2. Result of ERA Scoping for the MTCIP

4. Hazard Identification and Analysis

Hazards associated with MTCIP that could result in injury to or fatality to workers, and the public, as well as damage to assets and the environment, were identified. Identified hazards include both safety and physical factors. External factors such as sabotage and terrorism were included in the hazard analysis.

Chemical hazards, particularly those that have the potential to cause fire, explosions, and toxic releases, were identified and analyzed. However, since the quantities of chemicals involved are expected to be way below the DENR Level 1 threshold inventory, no quantitative risk assessment is necessary. Small quantities of diesel fuel, acetylene, and oxygen gases may be stored and used at the work site.

Table 4 lists the identified hazards associated with the project during the construction and operation phases.

Table 4. MTCIP Hazard and Risk Characterization

HN	Activity/Hazard	Consequence/Risk	Causes/ Contributing Factors	At Risk Sectors	C	F	Risk*	Recommended Control Measures
A. Construction Phase								
1	Clearing of vegetation beside the existing road	▪ Struck by felling trees, debris and equipment part ▪ Vibration and noise from power saws and other equipment leading to vibration-induced illness; hearing loss. ▪ Vehicular and equipment accidents	▪ Human error; ▪ Equipment failure;	▪ Workers ▪ Nearby residents and road users	3	3	9	▪ Ensure that tree-felling workers have skills and knowledge of the job ▪ Provide appropriate PPEs ▪ Provide barriers around the work area
2	Cement batching operation/ Cement mixing and activities that generate air emission	▪ Exposure of workers, nearby road users and residents to fugitive airborne cement dusts (may contain respirable silica) and air emission predisposing to respiratory, dermal and eye diseases ▪ Exposure to high level noise that may lead to hearing loss	▪ Inadequate equipment maintenance ▪ Proximity of workers to the batching equipment ▪ Inappropriate PPEs ▪ Dust from earthworks, unpaved roads and other civil works ▪ Air emission from construction activities	▪ Nearby workers ▪ Nearby residents and road users	2	3	6	▪ Ensure timely and regular maintenance of equipment ▪ Provide barriers around the work area ▪ Provide affected workers with appropriate PPEs (e.g. goggles, respirators, gloves, hard hats, safety shoes, earmuffs) ▪ Regular water sprinkling to suppress dusts from going airborne
3	Construction activity and movement of construction vehicles and equipment in existing roads	▪ Traffic accidents ▪ Injuries and/or fatalities to construction workers and road users ▪ Public vehicle colliding with construction vehicle, equipment or structure	▪ Movement of public vehicles in proximity to work zones in existing roads ▪ Reckless driving ▪ Insuffcient work zone safety equipment installed (e.g. safety fences, road markers, flags, “stop-go” paddles, etc.) ▪ Insufficient implementation of traffic rules ▪ Insufficient safety signages ▪ Inappropriate PPE ▪ Vehicle/equipment malfunction ▪ Human error	▪ Project workers ▪ Pedestrians ▪ Project assets	5	3	15	▪ Coordinate with LGU and traffic enforcers for stricter implementation of traffic rules especially at work zones ▪ Install safety barriers (e.g. fence), signages and other safety equipment to delineate and draw attention to road work zones ▪ Traffic management (including ingress/egress of vehicles at construction site), including properly trained personnel to manage traffic flow (i.e. banksman) ▪ Authorized road closures ▪ Implement pedestrian walkways ▪ Ensure that contractor’s vehicles, trucks an equipment are of good working condition through timely inspections of construction sites ▪ Ensure that the contactor employs properly trained crew and operators, especially drivers of large equipment like cranes and earth moving vehicles.
4	Construction activity near to live electric line or overhead power line	▪ Electrocution ▪ Fire ▪ Injuries and/or possible fatalities to construction workers	▪ Failure to notice live electric line or overhead power line ▪ Inappropriate PPE	▪ Project workers ▪ Project assets	5	2	10	▪ Provide safety signages ▪ Coordination with local electricity provider to provide power isolation, if required. ▪ Training/briefing of construction personnel ▪ Ensure wearing of appropriate PPEs working near or with electricals
5	Storage and use of flammable liquids (e.g. diesel) and gases (e.g. acetylene gas, industrial oxygen gas)	▪ Fire/Explosion accidents at work site ▪ Injuries, and/or possible fatalities ▪ Damage to assets	▪ Spillage of fuel and subsequent ignition ▪ Mechanical impacts on fuel tanks/ cylinders ▪ Presence of ignition source	▪ Project workers ▪ Public ▪ Project assets ▪ Environment	5	2	10	▪ Fuel storage tanks to be provided with secondary containment. ▪ Ensure the availability and accessibility of fire protection and suppression systems near storage of tank cylinders of flammable gases ▪ Eliminate sources of ignition near fuel storage areas ▪ Good housekeeping
6	Earthworks on steep and elevated terrains	▪ Landslides and/or rock falls that may result to injury/fatality and/or damage to assets ▪ Vehicular/equipment accidents (fall from heights, collisions)	▪ No retaining walls/barriers in unstable slopes may cause slop failure ▪ Human error ▪ Insufficient safety barriers and signages	▪ Public ▪ Project workers ▪ Project assets	5	2	10	▪ Install safety barriers and signages near the edge of ravines and steep slopes ▪ Install retaining walls/barriers in unstable slopes
7	Brdige construction activities	▪ Damage to bridge structures under construction that could lead to bridge failure/ collapse ▪ Fatalities/injuries ▪ Damage to properties	▪ Design errors, deficiency in construction, material defects ▪ Failure to follow current construction standards and codes ▪ Inadequate supervision and monitoring of construction ▪ Lack of quality control for materials	▪ Public ▪ Project workers ▪ Project assets	5	3	15	▪ Install safety barriers and signages ▪ Supervision and monitoring of construction to ensure that designs, plans and required materials are properly implemented
8	Slipforming construction activities	▪ Fatigue on workers which reduced mental alertness and physical ability ▪ Increased probability to meeting accidents (e.g. hit by moving equipment, falling from heights, collisions, etc.)	▪ Inadequate rest period/ break time ▪ Long hours of work (exceeds recommended duration) ▪ Hot environmental conditions	▪ Project workers ▪ Project assets	4	3	12	▪ Ensure adequate break times/ rest period for workers ▪ Provide adequate drinking water supply for workers ▪ Practice worker rotation for exhausting jobs
9	Terroristic attacks and/or sabotage of bridge/road structures	▪ Major damage that may lead to bridge failure/collapse and/or loss of road functionality ▪ Additional cost for remedial measures ▪ Fatalities/ injuries to people	▪ Inadequate security ▪ Peace and order problems	▪ Project workers ▪ Road users ▪ Project assets	5	2	10	▪ Coordinate with LGU and Philippine National Police (PNP) in case of terroristic threats ▪ Deploy security personnel to monitor and secure the road/ bridge perimeters, and equipment depot, as necessary ▪ Follow security announcement/advice from government’s (national and local) security agency

HN	Activity/Hazard	Consequence/Risk	Causes/ Contributing Factors	At Risk Sectors	C	F	Risk*	Recommended Control Measures
								▪ Incorporate terroristic attacks in the emergency response and contingency plan for the Project
C.	**Operation Phase**							▪
10	Movement of vehicles on roads	▪ Traffic accidents (collisions, hitting pedestrians, etc.) ▪ Fire/explosion resulting from traffic accident ▪ Damage to road and bridge structures that may result to failuer ▪ Fatalities/ injuries	▪ Human error ▪ Vehicular malfunction ▪ Inefficient lightings and safety signages	▪ Public ▪ Project assets	5	3	15	▪ Coordinate with LGU for stricter implementation of traffic management ▪ Implement appropriate speed and weight limits on the bridge ▪ Regulate passage of fuel tankers and carriers
11	Maintenance activity and movement of equipment	▪ Traffic accidents ▪ Injuries and/or fatalities to workers and road users ▪ Public vehicle colliding with vehicle, equipment or structure	▪ Movement of public vehicles in proximity to work zones ▪ Reckless driving ▪ Insuffcient work zone safety equipment installed (e.g. safety fences, road markers, flags, “stop-go” paddles, etc.) ▪ Insufficient implementation of traffic rules ▪ Insufficient safety signages ▪ Inappropriate PPE ▪ Vehicle/equipment malfunction ▪ Human error	▪ Workers ▪ Public ▪ Project assets	5	3	15	▪ Coordinate with LGU for stricter implementation of traffic management at work zones ▪ Install safety barriers (e.g. fence), signages and other safety equipment to delineate and draw attention to road work zones ▪ Traffic management to manage traffic flow ▪ Authorized road closures ▪ Implement pedestrian walkways ▪ Ensure that contractor’s vehicles, trucks an equipment are of good working condition through timely inspections of construction sites ▪ Ensure that the contactor employs properly trained crew and operators, especially drivers of large equipment like cranes and earth moving vehicles.
12	Terroristic attacks and/or sabotage of bridge/road structures	▪ Major damage that may lead to bridge failure/collapse and/or loss of road functionality ▪ Cost for major repairs ▪ Disruption of transport connectivity ▪ Fatalities/ injuries to people	▪ Inadequate security ▪ Peace and order problems	▪ Workers ▪ Public ▪ Project assets	5	2	10	▪ Coordinate with LGU and Philippine National Police (PNP) in case of terroristic threats ▪ Follow security announcement/advice from government’s (national and local) security agency

* -Medium Risk -High Risk

The identified hazards associated with the MTCIP have the potential to result in either medium risks or high risks. These indicative risks assume the absence of mitigation.

The main high risks associated with the MTCIP, with potential consequences, at worst case, of multiple fatalities and major damage to assets, are traffic accidents resulting from the movement of vehicles and equipment on roads during the construction and operation phases of the project, defective or insufficient safety signage, and insufficient implementation of traffic rules.

4.1 Risk from Traffic Accidents

The risks from traffic accidents could be high if unmitigated. The hazards of traffic accidents could lead to fatalities.

Factors contributing to the risk of traffic accidents include the following:

- Unsafe actions of workers and road users
- Insufficient work zone safety equipment is installed (e.g., safety fences, road markers, flags, “stop-go” paddles, etc.).
- Insufficient implementation of traffic rules
- Human error
- Vehicle/equipment malfunction
- Inadequate equipment maintenance
- Insufficient safety signages

5. Risk Management

Potential inherent (unmitigated) risks from the MTCIP project could be high in some aspects and must be prevented and/or controlled with the application of appropriate mitigation measures. Measures for the prevention and control of project-associated risks should be specified in the risk management and emergency plan of MTCIP. Such measures may include capability-building (if required) and resources. The identified risks should be managed and reduced to as low as reasonably practicable. Reasonable in this context means a balance between the benefits of increased safety, environmental protection, or lives saved, and the costs involved in the process of risk reduction. Major considerations in risk reduction are:

- Appropriate road infrastructure design;
- Compliance with design standards (construction and operation);
- Regular inspection and maintenance of the infrastructure, equipment, and facilities;
- Installation and proper maintenance of safety systems (e.g., signaling and control systems, early warning devices, fire prevention and control systems, etc.);
- Conduct of training
- Establishment of appropriate emergency response and contingency systems.

6. Summary and Recommendation

This Environmental Risk Assessment (ERA) was prepared for the proposed Mindanao Transport Connectivity Improvement Project (MTCIP). The identified hazards associated with the MTCIP have the potential to result in either medium risks or high risks. The main high risks

associated with the MTCIP, with potential consequences, at worst case, of multiple fatalities and major damage to project assets, are traffic accidents resulting from the movement of vehicles and equipment on roads during the construction and operation phases of the project, defective or insufficient safety signage, and insufficient implementation of traffic rules.

Measures for the prevention and control of project-associated risks should be specified in the risk management and emergency plan of MTCIP. There is need to manage and reduce to as low as reasonably practicable the identified risks. In this context, reasonable means a balance between the benefits of increased safety, environmental protection, or lives saved and the costs involved in the process of risk reduction.

Annex 20. Documentation of Public Consultation, September 26-29, 2023

Public Consultation

DATE	REGION, PROVINCE VENUE	OFFICES/ AGENCY	PARTICIPANTS		STAKEHOLDERS RECOMMENDATIONS	DPWH-UPMO RESPONSE
			Male	Female		
September 26, 2023	Region X Northern Mindanao Province of Misamis Oriental PPDO Auditorium, Provincial Capitol, Cagayan de Oro City	DPWH- UPMO		5	1. The Provincial LGU stated that while Cagayan de Oro City is part of the MTCIP, the Provincial Government of Misamis Oriental has no jurisdiction over the city. 2. MinDA asked to clarify the project timeline	3. DPWH-UPMO replied that it will be noted GECI explained the importance of the infrastructure project in Misamis Oriental, emphasizing its significance for transportation. If the project extends to other provinces and barangays, such as Puerto, it can significantly impact the province of Misamis Oriental. that the farmers of Misamis Oriental can benefit from this proposed infrastructure in terms of impact. It can make it easier, faster, cheaper, and safer for them to transport agricultural products to the market and bring commodities to the inland areas. 4. DPWH-UPMO presented the timeline and the need for endorsement of the province.
		GECI	2	8		
		MinDA		1		
		LGU	3	1		
September 26, 2023	Region X Northern Mindanao Province of Bukidnon PPDO Auditorium, Provincial Capitol, Malaybalay City	DPWH- UPMO		5	5. Status of construction of 2-lanes along Impasug-ong section of the main corridor with a box culvert 6. RROW process in widening. 7. Possibility of a connecting bridge from Dologon to Pulangi manmade lake for tourism purposes. 8. Construction of parallel bridge near Maloos area in KItaotao to replace the current sharp-curve bridge, which causes many accidents and harms to road users. Reminded that RRWO acquisition in Kitaotao area is a primary challenge to DPWH road improvement projects. 9. Inquiry if there will be construction of new roads under the MTCIP. 10. If not, will Sayre Highway be improved into six-lane road. 11. Inquiry on the MTCIP budget on highway protection and how the	17. DPWH-UPMO will consider with request for additional data to support GECI. 18. DPWH-UPMO follows R 10752. 19. DPWH-UPMO will inform the DEO about the proposed bridge for feasibility study. 20. DPWH-UPMO requested LGU Kitaotao to submit accidents incident report for documentation and to consider the recommendations for road improvements. 21. DPWH-UPMO replied that MTCIP is still in FS phase, and for presentation to NEDA-ICC. Prior to it, PDC and RDC endorsement are needed. 22. DPWH-UPMO replied that when the loan is secured, road design foreign consultants will be
		GECI	2	8		
		DPWH- DEO 1st District	1	2		
		LGUs and other sectoral groups	19	5		

DATE	REGION, PROVINCE VENUE	OFFICES/ AGENCY	PARTICIPANTS		STAKEHOLDERS RECOMMENDATIONS	DPWH-UPMO RESPONSE
			Male	Female		
					Provincial LGU could help. 12. The stretch of Sayre Highway should have an island or extra lanes for U-turn. This is to avoid illegal U-turns that causes most road accidents and death of commuters. 13. Inquiry if the planned "expressway" along Sayre Highway will push through. 14. Sharp turns and slope along Quezon section must be addressed. 15. Recommendations from Provincial LGUs: a. Tunnel should be built, if possible. b. Road design should be standardized along Sayre Highway. c. Incidents reports are not essential in the design process, accidents still occur. d. DPWH should enforce preventive measures to protect the roads to maximize money spent on the project. 16. PPDO recommended that MTCIP be presented to PDC, scheduled on September 27, 2023, for proper endorsement by PDC to RDC.	procured. All suggestions (#s4-11a-d) will be considered in the design phase. 23. The MTCIP was presented to PDC- Bukidnon and will pass SP Resolution endorsing the project to RDC.
September 27, 2023	Region XI Davao Region Davao City DPWH Regional Office Conference Hall, Davao City (2-4pm)	DPWH- UPMO		5	24. Inquiry on the payment for the affected houses and areas for relocation. As per initial field investigation by GECI, many houses standing along/close to the cliff in sitios along the proposed Link Road 2 may be affected. And, Malabog LGU is not informed yet of the final route of the proposed road development, so cannot determine the exact number of affected households. Asked when they will know the final design of the road. 25. Clarifications on the drainage	32. DPWH-UPMO replied that the project is still in FS phase; technical options analysis is still being conducted by GECI; land acquisition and compensation will be based on RA 10752; RROW will be determined after the FS. Information is needed from to be included in the option analysis and/or final design of the road. 33. DPWH-UPMO replied that improvement will be a complete package. 34. DPWH-UPMO said that
		GECI	2	8		
		DPWH-RO and DEO	4	2		
		LGUs and other sectoral groups	12	6		

DATE	REGION, PROVINCE VENUE	OFFICES/ AGENCY	PARTICIPANTS		STAKEHOLDERS RECOMMENDATIONS	DPWH-UPMO RESPONSE
			Male	Female		
					system along the proposed improvement of the main corridor. 26. Bantol LGU reminded of different types of land ownership in the affected areas (e.g. ancestral domain, A&D, and CADT issued land). Inquiry on the mode of acquisition that will be used. Asked on the RROW width. 27. Saloy LGU reminded that affected households by previous DPWH road projects have not been paid yet. And, inquired when will they know the final road alignment. 28. Suggestions from Barangay LGUs: 29. Discuss and present the final design to he Barangay Councils. 30. Barangay Councils can suggest areas that will not be greatly affected by the project. 31. Sitio Cabonbon has lot of residents that will be affected by the project.	replacement cost will be applied to affected structures, crops and trees. For land acquisition, RA10752 and other guidelines will be applied. RRWO will be 20 meters. 35. DPWH-RO explained that for MTCIP, affected households will be paid by DPWH first, not by barangay LGUs. 36. DPWH-UPMO replied that the MTCIP main and link roads are still being studied and be presented to NEDA ICC. Final design will be done after NEDA approval.
September 27, 2023	Region XI Davao Region Province of Davao del Norte Provincial Capitol Conference Hall, Tagum City (9-11am)	DPWH- UPMO		5	37. The Provincial LGU informed that the proposed alignment is included in the2024 provincial development plan, with hazard assessments guided by MGB and PHILVOCS. The proposed alignment will pass through the existing provincial road. 38. It was suggested that social and environmental factors must be included in the study, and inquired about how it will be done. 39. Provincial LGU reminded DPWH that affected households of previous road projects are not yet compensated. Further inquired, if the MTCIP will affect other or additional households. Suggested that the Barangay LGUs must. 40. Mr. Benjie Sandigan from DPWH clarified that the proposed original road alignment for Link Road 3 is unsafe for travel due to a section in Brgy. Pongpong before Sitio Lumbia, where it is not feasible to	42. DPWH-UPMO and GECI appreciated the PLGU plan and requested information. DPWH-UPMO replied that connectivity between Panabo and Bunawan areas are considered in the MTCIP. 43. GECI responded that the study conforms to the E&S mandate of the World Bank and will submit an ESIA for the project. 44. DPWH-UPMO and GECI explained that compensation will be due to affected lands and other assets in current market values. Cost will be part of the project valuation. 45. DPWH-UPMO responded that farm- to-market road is considered and that
		GECI	2	8		
		DPWH-RO and DEO	3	8		
		LGUs and other sectoral groups	11	4		

DATE	REGION, PROVINCE VENUE	OFFICES/ AGENCY	PARTICIPANTS		STAKEHOLDERS RECOMMENDATIONS	DPWH-UPMO RESPONSE
			Male	Female		
					construct two lanes, especially during heavy rains, as it is susceptible to landslides. 41. DPWH-DEO recommended rerouting of the proposed Link Road 3 to avoid passing through landslide-prone slope, narrow ridges and avoided loss of assets along ancestral lands: e. Kidadan as a potential rerouting option while maintaining the same exit route. Two suggested routes are: f. A route before the landslide-prone area that leads downward into a section of g. Barangay Kidadan and then exits to Barangay Lumbia. h. An alternative route that enters the main portion of Barangay Kidadan and proposes the construction of a bridge.	
September 28, 2023	Region XI Davao Region Province of Davao del Sur Digos City Gymnasium Hall (9-11am)	DPWH- UPMO		5	46. Clarification on which road will be renovated. He asked whether it is the wide one or the highlands. 47. Padada LGU asked what structures will be placed in the municipality and to those towns that weren't mentioned. 48. Provincial LGU requested GECI to determine all the affected barangays of the project. Inquires further what is the connection of the accident incident reports to the needed repair of the roads., 49. Provincial LGU expects to see clear improvement to be installed. Cited that overpass were installed but of less usage to the resident, asked further if proper studies were conducted for the overpasses. Further inquired if the road will be converted into 8-lane road with bike lanes and streets lights that will	54. DPWH RMC II, UPMO, explained that the World Bank's plan is to maintain a four-lane road to enhance mobility, which will be sustained for five years, covering a total of 428 km. She also highlighted that when traveling through the area from CDO-DAVAO- GENSAN 55. DPWH-UPMO replied that the focus is on connecting farms to roads to provide easier access. DPWH- UPMO collaborates closely with MINDA and various LGUs to assess the needs of each town. The LGUs were urged to provide the necessary data to identify problem areas in the region. 56. GECI replied that the reason for procuring incident reports is to determine the number of
		GECI	2	8		
		DPWH-RO and DEO		4		
		LGUs and other sectoral groups	25	19		

DATE	REGION, PROVINCE VENUE	OFFICES/ AGENCY	PARTICIPANTS		STAKEHOLDERS RECOMMENDATIONS	DPWH-UPMO RESPONSE
			Male	Female		
					meet super international standards; and why the road will only be maintained for 5 years. 50. Municipal LGU of Sta Cruz, inquired if drainage system is included in the design of the project; if due diligence is really implemented, and relocation sites for affected households. 51. Inquiries on study conducted to address potential flooding issues during road construction and how to minimize their impact. 52. IP representative inquired about the project's plan's for the remote barangays of Binaton, Kapatagan, Goma and Balabag. Brgy. Kapatagan is prone to landslides. 53. Barangay LGU of Hagonoy stated that estimated 40 car accidents are caused by slippery road; and asked about the project's intervention on the issue.	beneficiaries and the population in need of road improvements. She also added that they aim to gather environmental profiles for each barangay to assess factors like flood susceptibility, steep slopes, or other hazards. This data is valuable for identifying beneficiaries from a social perspective. 57. DPWH-UPMO reiterated that the project is still in the feasibility study stage. She also added the need for the barangays to submit incident reports in order to identify the areas along the main corridor that need improvements. She also added that it is up to the Congressman which areas he wants the project to be placed. The DPWH's duty is only to supervise the construction of these projects. 58. GECI explained that due diligence follows WB ES standards. Selected barangays are along the main corridor road; and the LGU is responsible in relocation/ resettlement in coordination with DPWH and other relevant agencies. 59. DPWH-UPMO and GECI explained that flooding and other factors are part of the due diligence and option analysis. 60. DPWH-UPMO replied that that for now, the main corridor, is the main focus for Davao Oriental. She added that they will assess the needs for road access in the mentioned barangays in Digos and what they can do for the IP's community. Their assessment is DPWH-UPMO noted the issue and will be relayed to the office in charge.

DATE	REGION, PROVINCE VENUE	OFFICES/ AGENCY	PARTICIPANTS		STAKEHOLDERS RECOMMENDATIONS	DPWH-UPMO RESPONSE
			Male	Female		
September 28, 2023	Region XII SOSCSKSARGEN General Santos City City Hall of General Santos (2-4 pm)	DPWH- UPMO		5	61. Representatives from the City Legislative Council stated that GenSan will not be affected by the project even if the main corridor starts with the city. But the city government is supportive of the project. 62. Inquiries if the ROW is included, the estimated budget for the project and the environmental impacts. 63. The local officials expressed concern that the proposed road will be one of the uncompleted road projects by DPWH. 64. Concern on the lifespan of the project, and recurring road repairs despite concrete pavement with 20-30 years lifespan. 65. Inquiries on the specific farm-to-market road that will be impacted by the project. LGUs lack the capability to maintain their roads and speculation on the criteria used for the inclusion to the project. 66. Inquiries on the following: i. Incorporating the effect of drainage system j. No mountain should be traversed k. Land use plan prohibitions l. Outline of Due Diligence m. WB funds FS or the construction also 67. Concerns on the uneven heights of median barriers and replacement of trees should include maintenance. 68. Recommendation on the use of tunnel.	69. DPWH-UPMO replied that the loan/budget covers end to end of the main corridor road. 70. DPWH-UPMO announced that ROW is included, due diligence is being done for the estimated budget and ECC will be secured. 71. DPWH-UPMO responded that regular preventive maintenance and use of quarterly rating will be observed; that international consultants will be contracted. 72. DPWH-UPMO responded that the lifespan of the concrete pavement is around 20 years. 73. DPWH-UPMO clarified that local roads are under the mandates of DILG and not an oversight of DPWH. 74. DPWH-UPMO and GECI clarified drainage system is also a concern on the project. that due diligence involves site observations, collection of information to evaluate potential of the project, ECC includes concerns on mountains areas, and WB loan covers implementation. 75. DPWH-UPMO that median barriers and tree replacement will be observed in coordination with other agencies.
		GECI	2	8		
		DPWH-RO and DEO	2			
		LGUs and other sectoral groups	11			
		MinDA	1			
September 29, 2023	Region XII SOCCSKSARGEN Province of Sarangani City Hall of General Santos City (2-4pm)	DPWH- UPMO		5	76. Barangay LGU official concerns on the compensation of affected families. 77. Concern on the proposed Link Road 3, there no existing road that connects San Miguel and Datu Intan. Suggestion on the different route to connect Malungon to Sta.	80. DPWH-UPMO said that RA10752 will be followed for the compensation of affected families. 81. DPWH-UPMO replied that due diligence and option analysis study is considered as an alternative. He also added that the Sta. Maria-Malungon Road.
		GECI	2	8		
		DPWH-RO and DEO	1			
		LGUs and other sectoral groups	9	6		
		MinDA				

DATE	REGION, PROVINCE VENUE	OFFICES/ AGENCY	PARTICIPANTS		STAKEHOLDERS RECOMMENDATIONS	DPWH-UPMO RESPONSE
			Male	Female		
					Maria. 78. Concern about conducting multiple Feasibility Studies on the same section conducted by different consultants. 79. One of the proposals could traverse the ancestral domain of the tribe Tagakaulo and is awaiting the issuance of the DENR for the Certification of Non- Overlapping.	82. GECI added that they are aware of the existing feasibility studies and these studies were used as a part of their review in conducting the Due Diligence and Options Analysis. If one of these feasibility studies is approved, funds from the World Bank will be secured.

Minutes of Meeting: Public Consultation with Stakeholders under Mindanao Transport Connectivity Improvement Project

DATE, TIME AND PLACE OF THE MEETING:	26 SEPTEMBER 2023	9:00 A.M to 11:00 AM	PROVINCIAL CAPITOL, MISAMIS ORIENTAL
Attendees:			
	Lilibeth B. Rico	DPWH RMC II, UPMO	PM III
	Evangeline Carabal	DPWH RMC II, UPMO	PM I
	Olivia M. Baguio	DPWH RMC II, UPMO	PM I
	Bryna Nolleth Lazaro	DPWH RMC II, UPMO	Engr.II
	Rejan Mala	DPWH RMC II, UPMO	Engr.II
	Armand A. Perez	GECI	a.perez@galerioenvi.com
	Julia W. Echavez	GECI	j.echavez@galerioenvi.com
	Oda S. Beltran	GECI	o.beltran@galerioenvi.com
	Carmeli Marie C. Chaves	GECI	c.chaves@galerioenvi.com
	Vanessa Pallarco	GECI	v.pallarco@galerioenvi.com
	Leonila P. Galerio	GECI	gec@galerioenvi.com
	Maricel D. Lloren	GECI	m.lloren@galerioenvi.com
	Jecar Dela Cerna	GECI	j.delacerna@galerioenvi.com
	Robeen John Gerodiaz	GECI	r.gerodiaz@galerioenvi.com
	Agnes Cabanayan	GECI	a.cabanayan@galerioenvi.com
Participants	John Vanie Lody	POO	0905-285-8909
	Rene B. Guingguisa	PENRO	0912-706-4441
	Ron R. Salva	PPDO - MISOR	0917-727-1303
	Lordilie Enjambre	MINDA	0917-631-8048
	Florante C. Jipus	PEO - MISOR	0927-552-3987

NO.	SUBJECTS	STATUS/ ACTIONS
1.	**OPEN FORUM**	
	Mr. Ron Salva explained that the Cagayan de Oro is highly urbanized, and the province of Misamis Oriental has no jurisdiction over Cagayan de Oro City.	Ms. Olivia Baguio from DPWH RMC II, UPMO replied that they have taken that into consideration and made note of it. Carmeli Chaves from GECI explained the importance of the infrastructure project in Misamis Oriental, emphasizing its significance for transportation. If the project extends to other provinces and barangays, such as Puerto, it can significantly impact the province of MisOr. She also mentioned that the farmers of Misamis Oriental can benefit from this proposed infrastructure in terms of impact. It can make it easier, faster, cheaper, and safer for them to transport agricultural products to the market and bring commodities to the inland areas.
	Lordilie Enjambre asked for the project timeline	Ms. Olivia Baguio presented the timeline and mentioned that they are on a tight schedule. Vanessa Pallarco emphasized that this is a long-term development project that will benefit the communities.

PHOTODOCUMENTATION	
	Registration (September 26, 2023)
	Singing of National Anthem (September 26, 2023)
	Presentation of the proposed project (September 26, 2023)
	Ron Salva informed that the province of MisOr is independent to Cagayan de Oro City. (September 26, 2023)

DATE, TIME AND PLACE OF THE MEETING:	26 SEPTEMBER 2023	2:00 P.M. TO 4:00 PM	PPDO CONFERENCE ROOM, MALAYBALAY CITY, BUKIDNON
Attendees:			
	Lilibeth B. Rico	DPWH RMC II, UPMO	PM III
	Evangeline Carabal	DPWH RMC II, UPMO	PM I
	Olivia M. Baguio	DPWH RMC II, UPMO	PM I
	Bryna Nolleth Lazaro	DPWH RMC II, UPMO	Engr.II
	Rejan Mala	DPWH RMC II, UPMO	Engr.II
GALERIO ENVIRONMENTAL CONSULTANCY INC.	Armand A. Perez	GECI	a.perez@galerioenvi.com
	Julia W. Echavez	GECI	j.echavez@galerioenvi.com
	Oda S. Beltran	GECI	o.beltran@galerioenvi.com
	Carmeli Marie C. Chaves	GECI	c.chaves@galerioenvi.com
	Vanessa Pallarco	GECI	v.pallarco@galerioenvi.com
	Leonila P. Galerio	GECI	gec@galerioenvi.com
	Maricel D. Lloren	GECI	m.lloren@galerioenvi.com
	Jecar I. Dela Cerna	GECI	j.delacerna@galerioenvi.com
	Robeen John Gerodiaz	GECI	r.gerodiaz@galerioenvi.com
	Agnes Cabanayan	GECI	a.cabanayan@galerioenvi.com
Participants	Rosemarie A. Paderanga	MEO - Kitaotao	0917-514-4907
	Flordelis C. Enriquez, CESE	DPWH Bukidnon 1st District	0917-718-4013
	Jan Paulo C. Lisondra	DPWH Bukidnon 1st District	0917-707-2996
	Sarah Jane B. Lacrama	DPWH Bukidnon 1st District	0917-203-5908
	Rowena S. Himarangan	J.O - Brgy. Casisang	0970-583-4352
	Lucille O. Turque	J.O - Brgy. Casisang	0905-101-0703
	Wennie S. Angit	MPDO - Kitaotao	0917-544-5260
	Joemar M. Sario	Brgy. Kagawad - Kalasungay	0916-300-3803
	Ma. Marryl B. Aranggo	J.O - Brgy. Diklum	0997-433-7457
	Albert B. de Mesa	Brgy. Captain - Kisolon	0917-634-0808
	Ronald E. Baslan	MENRO - Manolo Fortich	0945-028-1528
	Ronald John R. Cabilla	MEO - Manolo Fortich	0967-871-9141
	Eduardo E. Nezo	MPDO - Manolo Fortich	0965-611-4929
	Loreto T. Realda Jr.	Brgy. Captain - Bayabason	0935-747-9739
	Romaldo Abello Jr.	Brgy. Kagawad - Dologon	0917-599-1334
	Miguel G. Ceballos	Brgy. Captain - Dologon	0917-718-4593
	Kevin Loyd B. Carcueva	LGU Valencia	0917-873-3387
	Francisco D. Guinayna	LGU Impasug-ong	0917-149-4972
	Noel R. Rojas	Brgy. Captain - Kibenton	0926-104-6694
	Rodrigo O. Lumba	Brgy. Captain - San Jose	0912-960-9723
	Romeo V. Segarino	Brgy. Captain - Puntian	0909-228-4194
	Loreto T. Realda Jr.	Brgy. Captain - Bayabason	0935-747-9737
	Rizza O. Igcalinos	BS - San Jose	0946-847-5555
	Jomarie D. Cabisay	DPWH Bukidnon 2nd District	0995-709-6618
	Genevive R. Buyante	DPWH Bukidnon 2nd District	0917-708-4549
	Rosalinda R. Lopez	Brgy. Captain - Salawagan	0936-333-9005
	Epasmo Cesar A. Ramirez	Brgy. Captain - Alae	0967-570-3910
	Jose I. Ilair	MPDO - Quezon	0998-986-0531
	Floramae D. Penosa	Brgy. Captain - Darilig	0915-595-1772
	Ramir M. Linohon	Brgy. Captain - Maluko	0967-671-9435
	Rustan Dela Cerna	CEO - Malaybalay City	0917-889-1532
	Jesrel B. Mangubat	PPDO - Malaybalay City	0917-319-2637
	Mitchell Talatala	CMO - Malaybalay City	

NO.	SUBJECTS	STATUS/ ACTIONS
OPEN FORUM		
	Engr. Flordelis C. Enriquez requested the consideration of constructing two lanes along the Impasug-ong section and mentioned that they have proposed this twice for the Kitatao bridge, suggesting a box culvert.	Ms. Olivia Baguio from DPWH RMC II, UPMO, mentioned that it could be considered as a replacement. She also requested additional data from their office to support the study team
	Engr. Florante Jipus inquired about the project's Right of Way (ROW).	Ms. Olivia Baguio responded regarding the acquisition of Right-of- Way (ROW) as mandated by RA 10752, including the replacement of the affected structure. She also discuss the replacement cost and the current market value for land acquisition from financing institutions such as DBP and Land Bank.
	Ms. Lordilie Ejambre suggested the possibility of connecting the bridge from Dologon and brgy. She also recommended considering the potential for tourism development, particularly near the Pulangi bridge.	Ms.Olivia Baguio explained that this project focused solely on the main corridor. She also added that they will inform the DPWH district about these suggestions and assured everyone that road maintenance will continue. Ms. Lordilie Ejambre added that the area is a submerged road and impassable.
	Ms. Wennie S. Angit suggested constructing a new parallel bridge near Maloos area. They mentioned that the sharp curve design of the current bridge has caused harm and even death to residents and recommended the design improvement to prevent such events. Additionally, one of the primary challenges in the Kitaotao area is Right of Way (ROW), especially in accident-prone areas.	Ms.Olivia Baguio requested LGU Kitaotao to submit incident reports for documentation of incidents near the area. These reports will help consider the LGU Kitatao's suggestions for road improvements and support future feasibility studies. She also mentioned that there is an expected loan by 2024 that could be used to conduct an engineering design study, taking road safety interventions and possible bridge construction into consideration.
	The presence of the Governor was acknowledged.	Ms. Olivia Baguio briefed the Governor Rogelio Roque on the topics covered prior to his arrival, including the Mindanao Transport Connectivity Project's conceptualization and its purpose of supporting the agricultural sector in Mindanao. Also, discussed road design improvements in accident- prone areas. additionally, Ms. Olive Baguio outlined target dates for initial steps in securing a loan from the World Bank.
	Governor Roque shared his thoughts on the proposed project and asked if the construction of a new road is included in the Proposal. Governor Roque asked if the Sayre Highway would be improved into a six- lane road. Governor Roque expressed his concern about the DPWH's budget constraints for highway protection. He also inquired about how the LGU could assist in the project's implementation. Governor Roque suggested that most parts of the Sayre highway should have an island to avoid illegal U-turns of vehicles and improve movement along the highway. He also added that there should be an extra lane for U-turns, and asked about the planned expressway whether it will be continued or not.	Ms. Olivia Baguio replied that there is a proposed construction of a new road in Giginto. Ms. Olivia Baguio explained the project concepts as a long-term performance-based program with the goal of improving mobility and safety. She highlighted sections that have degraded and cannot be maintained due to budget constraints. With this project, these damaged sections will undergo rehabilitation, and contractors will be compensated based on their level of service. Ms. Lilibeth B. Rico, from DPWH RMC II, UPMO replied that in order to submit the Feasibility Study to NEDA, they need the provincial endorsement to conduct the said study. Through this, it will help the loan approval for the project to commence. Ms. Olivia Baguio replied that as of the moment, the project is still in the feasibility study phase. When the loan is secured next year, road design consultants will be procured, and another round of public consultations will be conducted. Ms. Olivia Baguio replied that a high standard highway will be constructed by JICA. She also added a brief route for the highway and made sure that no overlapping between the two projects will happen.
	Jesrel B. Mangubat from PPDO Malaybalay stated that there will be a Provincial Development Council and Peace and Order joint meeting the next day and suggested that any representative from the DPWH or GECI should be present in the meeting.	Ms. Olivia Baguio stated that they will be attending the joint meeting between the PDC and Peace and Order department.
	Jose I. Ilair, MPDO from Quezon expressed his concern regarding the safety especially in the overview section due to its sharp turns and slope.	Engr. Armand Perez from GECI added that it is important for the LGU's to submit incident reports so that it will be taken into consideration in the design process. Through this, it will help the project facilitators to determine the exact black spots around the area.
	Governor Roque also added the following points: 1. If possible, a tunnel should be built. 2. Road design should be standardized. 3. Incident reports are not essential in the design process. 4. He stated that even with a properly drafted design, considering all design aspects, accidents still occur.	Ms. Olivia Baguio stated that it is still in the Feasibility Study phase and still awaiting for the loan. She also explained the details of the proposals. Furthermore,she mentioned that they are actively working on preventive measures to address the impact of climate change and protect these roads from degrading faster than expected. Flordelis C. Enriquez clarified why the loan will be first

	5. He also emphasized that the government should enforce preventive measures to protect the roads to maximize the money spent on these projects.	secured before the engineering side of the project. She also mentioned the Governor's earlier suggestion earlier to construct tunnels and stated that there have been initial communications with JICA.
	PM Lilibeth B. Rico shared her final thoughts on the meeting and subsequently thanked the Governor for his insights.	

PHOTODOCUMENTATION	
	Presentation of the proposed project (September 26, 2023)
	Wennie S. Angit recommended the design improvement to prevent incidents. (September 26, 2023)
	Jose I. Ilair Expressed his concern regarding the safety. (September 26, 2023)
	Engr. Armand Perez requested the LGU's for secondary data of incidents of reports as part of a baseline for report writing. (September 26, 2023)

	Governor Rogelio Neil Roque requested the endorsement to the Provincial Development Council (PDC) (September 26, 2023)

DATE, TIME AND PLACE OF THE MEETING:	27 SEPTEMBER 2023	2:00 P.M. TO 4:00 PM	DPWH CONFERENCE ROOM, DAVAO CITY
Attendees:			
	Lilibeth B. Rico	DPWH RMC II, UPMO	PM III
	Evangeline Carabal	DPWH RMC II, UPMO	PM I
	Olivia M. Baguio	DPWH RMC II, UPMO	PM I
	Bryna Nolleth Lazaro	DPWH RMC II, UPMO	Engr.II
	Rejan Mala	DPWH RMC II, UPMO	Engr.II
GALERIO ENVIRONMENTAL CONSULTANCY INC.	Armand A. Perez	GECI	a.perez@galerioenvi.com
	Julia W. Echavez	GECI	j.echavez@galerioenvi.com
	Oda S. Beltran	GECI	o.beltran@galerioenvi.com
	Carmeli Marie C. Chaves	GECI	c.chaves@galerioenvi.com
	Vanessa Pallarco	GECI	v.pallarco@galerioenvi.com
	Leonila P. Galerio	GECI	gec@galerioenvi.com
	Maricel D. Lloren	GECI	m.lloren@galerioenvi.com
	Jecar Dela Cerna	GECI	j.delacerna@galerioenvi.com
	Robeen John Gerodiaz	GECI	r.gerodiaz@galerioenvi.com
	Agnes Cabanayan	GECI	a.cabanayan@galerioenvi.com
Participants	Austria Clillich	CEC	
	Almario M. Monton		0949-363-2842
	Jordan Samantha		0905-441-9702
	Claudave Talungon	DPWH - DCDEO	0999-951-3784
	Jocelyn Magnave	DPWH - DCDEO	0932-497-2834
	Jonnel P. Mata	DPWH RO XI	0906-900-2818
	Richard A. Pagasa	DCDEO	0917-561-5890
	Lilibeth M. Sarmiento	DCDEO	0977-843-7030
	Edgar D. Al-ag	TORIL	0930-636-9210
	Edwin B. Fiel	BANTOL	0939-238-4756
	Allan P. Saimo-Ag	LIGA	0917335
	Ronnie John T. Riano	LIGA	0938-195-3388
	Elvielyn T. Westauno	CPDO	0943-140-3093
	Aileen S. Fudader	CPDO	0949-180-1290
	Ferdinand B. Dallo	DAVAO CITY 2nd DEO	0948-802-7134
	Crusil E. Guyot	CENRO	0942-079-7148
	Aicelavinia T. Monce	CENRO	0948-430-2911
	Jonary Salfoza P. Panggaga	CENRO	0948-199-6667
	Purificacion S. Sayko	MARILOG PROPER	0919-336-9967
	Leonardo Camelotes	CALINAN	0981-375-1944
	Jessielito C. Areja	MALABOG	0910-334-3974
	Christopher B. Asibal	CENRO	0998-535-3475
	Alberto L. Etorma	MALITA	0912-469-8220
	Melody S. Dagusok	CEO	
	Garry	SALOY	0909209471
	Leonardo Camelotes	CALINAN	0981-375-1944
	Jessielito C. Areja	MALABOG	0910-334-3974
	Christopher B. Asibal	CENRO	0998-535-3475
	Alberto L. Etorma	MALITA	0912-469-8220
	Melody S. Dagusok	CEO	
	Garry	SALOY	0909209471

NO.	SUBJECTS	STATUS/ ACTIONS
	OPEN FORUM	
	Barangay Captain Jessielito C. Areja asks if there will be payment for the affected houses. Barangay Captain Jessielito C. Areja when we assisted the galerio, many sitios were affected and they needed to be moved because they were close to the cliff. I hope we can find out here so at least they can find a relocation area. Barangay Captain Jessielito C. Areja stated the majority of the identified roads have no development yet. We would like to know when we can know the final route of the project so that we can already inform the affected residents and we can assist them to look for another location.	Carmeli Marie C. Chaves - All structures affected directly will be compensated according to right of way sites and acquisition. She also added that they will assist and look for a location or some package to safeguard their rights to fair compensation to those entitled for resettlement. Lilibeth Rico - At least the stage is under feasibility studies. We have identified some technical option analysis. Here we are comparing what is the feasible road that everyone is considering. Joey Tulaylay - With regards to the acquisition (RA 10752) during the process we identify the right of way then we do finalization of right of way so we can account for those who are affected. It is part of the requirement in acquiring ECC. Lilibeth Rico - Also added that during the feasibility study, it was studied that the resettlement action plan has a preliminary route to determine the just compensation, including the cost in the project cost when we submit to NEDA. Although the right of way is paid by the Philippine government it is already part of the project cost when we submitted.
	CEO - Clarification with regards to the proposed road the whole stretch, do we have a drainage system established? Follow Up Question - Is the drainage system included in drainage right of way, is there a budget?	Unknown - Complete Package
	Barangay Bantol Captain Edwin B. Fiel - Stated that they have different types of land ownership in their barangay, there is ancestral domain, alienable and disposable land and, they have CADT areas. He is asking what the ways are to be used for acquisition.	Unknown - The non-compensable land will not be paid, but the replacement of the structure will get paid. This includes the improvements, structure, and trees.
	Barangay Saloy - Raised concern with regard to the land that can't be budgeted by the DPWH base from this previous experience. Barangay Bantol Captain Edwin B. Fiel - If we need to ask for a right of way for this project, we will ask for it. If not, we will not ask for the right of way. Follow up question - base in the design I saw is 6 to 7m wide. whatever we can do to implement the project we will do Yes, we have here the barangay profile. Barangay Captain Jessielito C. Areja - When can we know the final road/alignment?	Joey - Explaining the process of issuing permits to enter. stating that they should not issue permits to enter when the DPWH has not paid the affected owner. and so that the residents won't blame the barangay. Lilibeth Rico - The project needed is 20 meters. What we are talking about here is the national road standard, so the right of way acquisition here is 20m. Lilibeth Rico - Maybe sir that's all we'll ask you to allow our consultant to do a survey for feasibility studies. Carmeli Marie C. Chaves - Asking for barangay profile. Lilibeth Rico - We are in the process of identifying the road. That is why we need this information so we can include it for submission. Carmeli Marie C. Chaves - If we look at the timeline, the ICC submission is in November 2023 so we will know if it will be approved on April 18, 2024. As of now this is not the final alignment.
	Barangay Bantol Captain Edwin B. Fiel - How about the traverse alignment? Is this final? Follow up question - When will we know the final option?	Carmeli Marie C. Chaves - That is one of the options. We have Option 1, 2, and 3. Only DPWH can tell. Lilibeth Rico - We have criteria to follow. Carmeli Marie C. Chaves - We have criterias to follow. The criteria is the least adverse impact. Julia Echavez explains the criteria for the environmental side. For the environment, our criteria is the number of trees that will be affected. the water quality, the steep slopes, and the flood prone areas so that's the criteria for environmental.
	Barangay Saloy - Asking for final alignment.	Arman A. Perez - We are still doing option analysis. We are still studying the areas that are not that affected by residents and crops. We are still coming up with options 1, 2, and 3 where it

		costs less. We will submit that to the world bank. when it comes back to us that will be the time, we will know the final alignment and we will show it to you and that will be the time we talk to you again.
	Suggestion - before you submit the final report. I suggest that you proceed to the barangay council so we can help. We can suggest areas that will not be greatly affected by this project.	Lilibeth Rico - This project is still being studied until we submit it to NEDA to comply with the requirements of economic internal rate of return, that's why we have criteria. So, after it is approved, it will be recommended by NEDA with the world bank to finance the project, then the detailed engineering design will be done to study what the actual arrangement will be.
	Barangay Malabog - Raised in sitio Cabonbon where there are a lot of residents in the area.	Lilibeth Rico - We will present you a map showing the existing road.

PHOTODOCUMENTATION	
	Invocation and National Anthem (September 27, 2023)
	Presentation of the proposed project (September 27, 2023)
	Jessielito C. Areja inquired about the final alignment of the project. (September 27, 2023)

DATE, TIME AND PLACE OF THE MEETING:	**27 SEPTEMBER 2023**	**9:00 A.M. TO 11:00 AM**	**PROVINCIAL CAPITOL OF DAVAO DEL NORTE**
ATTENDEES:			
	Lilibeth B. Rico	DPWH RMC II, UPMO	PM III
	Evangeline Carabal	DPWH RMC II, UPMO	PM I
	Olivia M. Baguio	DPWH RMC II, UPMO	PM I
	Bryna Nolleth Lazaro	DPWH RMC II, UPMO	Engr.II
	Rejan Mala	DPWH RMC II, UPMO	Engr.II
GALERIO ENVIRONMENTAL CONSULTANCY INC.	Armand A. Perez	GECI	a.perez@galerioenvi.com
	Julia W. Echavez	GECI	j.echavez@galerioenvi.com
	Oda S. Beltran	GECI	o.beltran@galerioenvi.com
	Carmeli Marie C. Chaves	GECI	c.chaves@galerioenvi.com
	Vanessa Pallarco	GECI	v.pallarco@galerioenvi.com
	Leonila P. Galerio	GECI	gec@galerioenvi.com
	Maricel D. Lloren	GECI	m.lloren@galerioenvi.com
	Jecar Dela Cerna	GECI	j.delacerna@galerioenvi.com
	Robeen John Gerodiaz	GECI	r.gerodiaz@galerioenvi.com
	Agnes Cabanayan	GECI	a.cabanayan@galerioenvi.com
Participants	Germa G. Navarro	BLGU	0985599681
	Anselmo Junio	PGO-DAVNOR	0956-054-6924
	Reynante Monares	PGO	0917-630-3940
	Tessie G. Ababon	PEO	0968-853-5468
	Jonar P. Francisco	PENRO - LGU	0921-617-2991
	Almario M. Monton	DPWH XI	0949-363-2842
	Samantha Jordan	DPWH XI	0905-441-9702
	Summaya Sukaino	DPWH XI	0906-422-7196
	Norhanifan Disuma	DPWH XI	0907-274-7827
	Hazel Zafra	PLGU - PPDO	0925-500-4670
	Romcel Duro-on	PPDO Davao Del Norte	0933-323-4485
	Thalian A. Sarico	DPWH DDN	0998426996
	Dave A. Agron	DPWH - SUB - DEO	0927-395-2690
	Chirwen P. Nazarevo	DPWH - DDN	0921-683-9315
	Myrene D. Dumayongan	SK - Pandapan	0997-322-7036
	John Mark a. Lemosnero	SK - Pandapan	0953-209-2197
	Manolito D. Alcober		0948-146-6460
	Gemma C.	PPDO-DDN	0946-738-5923

	Montegrande		
	Jonnel P. Mata	DPWH RO XI	0906-900-2818
	Lito S. Sanani	Beunavista	0991-814-4857
	Joseph Raymund Sumusal	LGU Panabo	0917-310-8863
	Felix Jonases P. Sengaon	CPDO	0917-637-0912
	Eric R. Aduawan	CEO	0948-963-0444

NO.	SUBJECTS	STATUS/ ACTIONS
OPEN FORUM		
	Ms. Hazel Zafra from PPDO shared that project alignment was included in their provincial development plan of 2014. She also addressed the question of ongoing projects, both city and provincial, and shared that they have already conducted hazard assessments in the alignment area. They have identified major decision areas regarding hazards, and their sources for this information are the MGB and Phivolcs.	Camille Chavez from GECI said that she's happy that davao del norte is updating their PDPFT. She also commented that they want to connect the urban areas where the markets are to make it safer, cheaper, and faster to bring their commodities to where they are supposed to be. However, she's eager to obtain the information that she shares on the ongoing projects from the LGU, Provinces, City and DPWH.
	Tessie Ababon - shared that the alignment will pass through to the existing road.	Lilibeth Rico from UPMO said that they are also considering the connectivity of Panabo and Bunawan area.
	Joey from DPWH XI suggested that during the verification of the site, a section well be included detailing the condition of the road and its coverage. He emphasized the need for a sectional approach, reiterating the condition of the existing road must be taken into consideration.	Armand Perez from GECI stated that this is part of the TOR of the world bank. He also added that some roads are under construction, that's the reason why they are in the process of option analysis. Julia Echavez added that the purpose of introducing the project is to provide essential details. While we cannot give you all the specifics at this moment, we and the other consultant are working on it. The GECI has been preparing the straight-line diagram indicating which sections have been completed and which ones are still ongoing. The goal is to simplify the project. Carmeli Chaves also added that this is just an introductory part of the project, and the DPWH will conduct another consultation with the consultant to present the final road alignment. Lilibeth Rico inserted that the end goal of this project is securing provincial endorsement which is one of the requirements of RDC and to secure the approval of NEDA.
	Tessie Ababon from CPDO suggested considering social and environmental factors and inquired about the process of this study?	Julia Echavez said that what they are doing right now is conforming to the requirements, and as part of the mandate from the world bank, we are required to prepare and submit the environmental and social framework. We are also in preparation to submit the ESIA (Environmental and Social Impact Assessment) and the environmental and social management plan of the project, right now we are here for data gathering. Carmeli Chaves expressed her satisfaction that the issue of safeguard has been raised, Shed noted that they haven't discussed the possibility of involuntary resettlement for this project, which is the primary concern. Currency, we've been assessing the potential impacts of the project, and one of these impacts is the voluntary resettlement, and according to the law those affected will be compensated or relocated. Carmeli Chaves mentioned that they have conducted initial estimates of the number of households for link road 2 but they are still in the process of confirming that information.
	Tessie Ababon said that the DPWH is still not providing compensation for the affected project on	Carmeli Chaves said that there will be compensation of those affected households based on the current market value.

	the local road. She inquired if the affected households will be relocated and compensated, so that the barangay Captain will inform them accordingly.	Julia Echavez clarified that for trees, it depends if it is a fruit bearing tree that will be subject for compensation, but if it is a natural growing tree that will be subject to DENR administrative order and replacement, the DPWH will implement this. Compensation will be provided for fauna. Lilibeth Rico said this is also part of the project cost acquisition, and emphasized that they will be using appraisal based on BIR or the Zonal value for the purpose of budgeting. Carmeli Chaves in addition this road is definitely longer than the threshold limit of 20km so more than 20km DPWH would apply for ECC for this link road.
	Gemma Montegrande from PPDO emphasized the consideration of commodities such as crops within the area, to preserve the transported products.	Lilibeth Rico responded that one of the considerations is the farm-to-market road.
	One of the LGU Panabo participants suggested the improvement of the ecological setting because the trees will be affected, especially considering the forecasted of roads in different segments like Davao-Bukidnon road.	Julia Echavez responded that the engineering, social and environmental team is taking into account the ecological setting of the proposed project.
	Felix Jonases Sengaon from CPDO informed that there is ongoing 4-lanes construction from brgy. Malativas to Consolation, as well as an ongoing 2-lanes bridge construction in Katipunan. Felix Jonases raised his concern that the landslides occurring in brgy. Cacao and Catipunan, The affected properties affected by this project. Felix Jonases requested the study team to conduct consultations with the City Government of Panabo. Felix Jonases raised the design problem of the road pavement will also be considered Felix Jonases consider the quarry industry, particularly the sand and gravel quarry, in the project planning	Lilibeth Rico responded that they will consider the implementing office and the detailed engineer.
	Joseph Sumusal asking about the project cost and suggested not to limit the budget	
	Hazel Zafra suggested overseeing the project design, road safety.	Lilibeth Rico stated that the world bank will not limit the budget cost and also endorsed the GECI team to extend their assistance to them.

PHOTODOCUMENTATION	
	Welcoming of participants (September 27, 2023)
	Acknowledgement of participants (September 27, 2023)
	Presentation of the proposed project (September 27, 2023)

	Joseph Sumusal suggested not to limit the budget (September 27, 2023)
	Hazel Zafra suggested overseeing the project design, road safety. (September 27, 2023)
	Julie Echaves responded that the engineering, social, and environmental team is considering the ecological setting of the proposed project. (September 27, 2023)

DATE, TIME AND PLACE OF THE MEETING:	**28 SEPTEMBER 2023**	**9:00 A.M. TO 11:00 AM**	**DIGOS GYMNASIUM, DAVAO DEL SUR**
ATTENDEES:			
	Lilibeth B. Rico	DPWH RMC II, UPMO	PM III
	Evangeline Carabal	DPWH RMC II, UPMO	PM I
	Olivia M. Baguio	DPWH RMC II, UPMO	PM I
	Bryna Nolleth Lazaro	DPWH RMC II, UPMO	Engr.II
	Rejan Mala	DPWH RMC II, UPMO	Engr.II
GALERIO ENVIRONMENTAL CONSULTANCY INC.	Armand A. Perez	GECI	a.perez@galerioenvi.com
	Julia W. Echavez	GECI	j.echavez@galerioenvi.com
	Oda S. Beltran	GECI	o.beltran@galerioenvi.com
	Vanessa Pallarco	GECI	v.pallarco@galerioenvi.com
	Leonila P. Galerio	GECI	gec@galerioenvi.com
	Maricel D. Lloren	GECI	m.lloren@galerioenvi.com
	Jecar Dela Cerna	GECI	j.delacerna@galerioenvi.com
	Robeen John Gerodiaz	GECI	r.gerodiaz@galerioenvi.com
	Agnes Cabanayan	GECI	a.cabanayan@galerioenvi.com
Participants	Cris Trinidad	LGU - Admin	
	Joyce Buit	LGU - Guihing	
	Sommaya Sukarno	DPWH	
	Samantha Jordan	DPWH	
	Helen Nunez		
	Ellen Villegas		
	Marites Duramo	Brgy. Captain - Bato	
	Felimonito Villegas Jr.	LGU - Digos City	0907-209-4938
	Maximo Eltagonde	Brgy. Captain	0950-232-5469
	Alan Angub	LGU - Sta. Cruz	0907-381-3411
	Annalou Bongawan	LGU - Sta. Cruz	0920-339-7311
	El Mark Tayabas	PEO - Davao del Sur	0912-523-2926
	Ramel Morello	Brgy. Captain - Aplaya	0975-317-6273
	Ommi Kharzom Buat	MPDO	
	Flora Mae Dominice	MPPDC	
	Jocelyn Arellano	Brgy. Captain - Mabini	0919-785-7147
	Wilson Ayop	MEO	0919-098-9013
	Rebecca Ronda	MTO	0920-377-0048
	Rodeto Muda	Brgy. Captain - Malalag	0970-020-0212
	Concepcion Carlos	MSWD	0907-573-2448
	Noel Ferolino	LGU - Padada	0949-449-7408
	Imelda Rebuyon	PLGU - Davao del Sur	0921-692-6189

	Charles Abuda		0909-270-5603
	Dr. Raymond Cuba	BDONB	0928-507-4817
	Dyanne Grace Cabigas	IP	0946-446-0071
	Randy Villarta	Brgy. Captain - Balutakay	0960-878-5208
	Fritz Gerald Surposa	LGU - Leling	0909-656-0975
	Alfredo Dacuta Jr.	LGU - San Isidro	0951-248-7000
	Francisco Guerrero Jr.	LGU - Padada	
	Alexis Villejo	LGU	
	Bermie Banagbanag	MPDO	0948-721-2126
	Gina Chua	PPDO - Davao del Sur	0918-935-1402
	Leah Eborda	MEO	0909-931-5624
	Dennis Lasat III	MPDO	0907-094-1939
	Nilda Corro	Tribal Office	0912-759-9795
	Alma Dilag	LGU - Crossing	0948-996-2003
	Judith Reponte	KALIPI	0910-043-0455
	Maria Wilma Malait	Women Sector	0929-400-1782
	Willie Villegas	VMO - Sulop	
	Noel Alegre	MEO	0998-958-4829
	Emma Algabre	MSWDO	0923-028-1399
	Myrna Relano	LGU - Malalag	0910-467-0540
	Amelia Deguinon	MSDO	0950-115-8237
	Ronaldo Salvilla	MPDC	
	Lyssa Mae Cabaobao	OMAD	0968-881-2398
	Harvey Ryari Embuo		0938-386-6841
	Arnulfo Lantas	OCPDC	0910-555-8454
	Azucena Buquia	MEO	0939-998-8811

NO.	SUBJECTS	STATUS/ ACTIONS
OPEN FORUM		
	Mr. Noel Ferolino of LGU Padada stated that they need clarification on which road will be renovated. He asked whether it is the wide one or the highlands.	Ms. Olivia Baguio from DPWH RMC II, UPMO, explained that the World Bank's plan is to maintain a four-lane road to enhance mobility, which will be sustained for five years, covering a total of 428 km. She also highlighted that when traveling through the area from CDO-DAVAO-GENSAN, you can observe damage resulting from the effects of climate change. To address this, some areas will incorporate canals to mitigate the deteriorating performance of submerged rotors over time. Furthermore, Ms. Olivia Baguio mentioned that one of the structural interventions between Davao del Sur and Davao City is to improve mobility and design speed by overlaying asphalt on the existing roads
	Mayor Fransisco Guerrero Jr. from Padada LGU asked what structures will be placed in the municipality and to those towns that weren't mentioned.	Ms. Olivia Baguio explained that they are working on connecting farms to roads to provide easier access. She added that they are collaborating closely with MINDA and various LGUs to assess the needs of each town. Furthermore, she urged the mayors of these towns to provide the necessary data to identify problem areas in the region.
	Ms. Olivia Baguio asked when the next PDC will be meeting Ms. Imelda Rebuyon from PLGU Davao del Sur requested Mr. Armand Perez to determine all the affected barangays of this project. Ms. Imelda Rebuyon asked about the connection between the incident reports and the needed repairs of these roads.	Ms. Imelda Rebuyon from PLGU Davao del Sur replied that the next PDC meeting will take place in October. She also added that there will be meetings with the Governors because they are still confused about which roads are directly affected. Mr. Armand Perez from GECI said that they have been in constant communication with various government offices in these areas to request incident reports to help them identify those affected areas. Ms. Julia Echavez from GECI replied that the reason for procuring incident reports is to determine the number of beneficiaries and the population in need of road improvements. She also added that they aim to gather environmental profiles for each barangay to assess factors like flood susceptibility, steep slopes, or other hazards. This data is valuable for identifying beneficiaries from a social perspective. Mr. Jerry David added that, at the moment, there are ongoing deviation lane barriers, and as part of safety measures, the installation of streetlights is being considered. Given that the project is still in its feasibility study phase, all of these concerns will be raised. Mr. Jerry David explained that the project is still in the feasibility study phase and is considering every aspect.

	Ms. Imelda Rebuyon asked if bike lanes, streetlights and islands will be installed. Ms. Imelda Rebuyon stated that as early as now they are expecting to see clear improvements to be installed. Ms. Imelda Rebuyon asked about existing overpasses with less usage from the residents. She also asked if there were proper studies conducted on these overpasses. Ms. Imelda Rebuyon asked whether the road will be converted into an eight- lane road, if there will be bike lanes and streetlights installed, and if it will meet the super international standards. She also inquired if the road will only be maintained for five years.	Ms. Olivia Baguio reiterated that the project is still in the feasibility study stage. She also added the need for the barangays to submit incident reports in order to identify the areas along the main corridor that need improvements. She also added that it is up to the Congressman which areas he wants the project to be placed. The DPWH's duty is only to supervise the construction of these projects. Ms. Olivia Baguio explained that the goal is to standardize the maintenance of the roads. She added that, before the road is turned over to the district offices, which will be the eventual owners of the road, the project facilitators will first make sure that the maintenance of the newly rehabilitated road will be maintained in compliance with the standards set by the project coordinators. Ms. Olivia Baguio also stated that after the project concludes, the warranty period will take effect, and then the project will be handed over to the district offices.
	A participant stated that they thought that the drainage system project included those in the barangay area and not just highways.	The question was addressed by Ms. Olivia, she stated that when it comes to the World Bank Project, if that lane connects to the main line that is consistently flooded, that'll be the time to necessitate the installation of drainage. Furthermore, it is also said that the decision for this depends on the study. Ms. Oda clarified that what they're doing is social analysis and the study in the area. They need to make sure in due diligence that the environmental and social standards of the World Bank were compiled. thus, he interior barangays included in this study and was classified into direct and indirect areas
	Mr. Alan Angub raised this concern at this juncture, saying that why is it that in the area of Sta. Cruz only 3 barangays were included in the said project. Follow-up question from Mr. Alan Angub, stating that if the due diligence was really implemented and that it is the very example of non-communication inserting due diligence. Mr. Cris Trinidad asked about the relocation in Sta. Cruz. Has there been a study conducted to address potential flooding issues during construction or to minimize their impact?	Ma'am Oda S. Beltran from GECI answered the concern about why only three barangays were included. She explained that the selection was based on the study's results and the criteria provided by the World Bank, and it doesn't necessarily mean that only these three will be included. Ms. Oda then explained that due diligence is the discussion between the consultant and the bank. That's why it will follow the standard provided by the World Bank to really look at what the necessary things to do in this project. It was then answered that the person responsible for the relocation is in the LGU. They must communicate with the DPWH office. Ms. Oda clarified to Mr. Allan the role of the consultants. The study provided by the consultant through the gathered data would assist the LGU and other offices in preventing situations like this (potentially referring to flooding during construction). The consultants will analyze the data and recommend necessary actions. The study conducted by the consultants will also be valuable in securing loans from the bank. The project's objective is to classify which sections require 2 or 4 lane roads and identify the necessary interventions
	Ms. Evangeline Carabal from DPWH raised her concern and suggested that, if possible, they should establish a standard for the structure or	The representative mentioned that this concern had already been noted in their previous meeting.

	design of the cartrail.	
	Ms. Dyanne Grace Cabigas, a representative from IPs in Digos City, inquired about the projects planned for the city, specifically mentioning these three barangays: Brgy. Binaton, Brgy. Kapatagan, and Brgy. Goma, as well as Brgy. Balabag. She also highlighted that Brgy. Kapatagan is prone to landslides, which is one of their main problems."	Ms. Olivia Baguio answered that for now, their main corridor, as shown in the slides, is directed to Davao Oriental, and they have one project intended for Davao Oriental. She added that they will assess the needs for road access in the mentioned barangays in Digos and what they can do for the IP's community. Their assessment is currently focused on what's shown in the corridor, and later on, they will make recommendations to the locals.
	Randy Villarta, a Balutakay Barangay Captain, stated that in Hagonoy, they are suffering from a slippery road that has caused an estimated 40 car accidents. He asked about the intervention for this issue.	This concern has been noted and will be relayed to the office in charge.

PHOTODOCUMENTATION	
	Invocation and National Anthem (September 28, 2023)
	Bryna Nolleth Lazaro acknowledged the participants (September 28, 2023)
	Presentation of the proposed project (September 28, 2023)

	Oda Beltran stated that they need to make sure in due diligence that the environmental and social standards of the World Bank were compiled. (September 28, 2023)
	Ms. Dyanne Grace Cabigas inquired about the projects planned within the Ancestral domain. (September 28, 2023)

DATE, TIME AND PLACE OF THE MEETING:	**28 SEPTEMBER 2023**	**2:00 P.M. TO 4:00 PM**	**CITY HALL OF GENERAL SANTOS CITY**
ATTENDEES:			
	Lilibeth B. Rico	DPWH RMC II, UPMO	PM III
	Evangeline Carabal	DPWH RMC II, UPMO	PM I
	Olivia M. Baguio	DPWH RMC II, UPMO	PM I
	Bryna Nolleth Lazaro	DPWH RMC II, UPMO	Engr.II
	Rejan Mala	DPWH RMC II, UPMO	Engr.II
	Armand A. Perez	GECI	a.perez@galerioenvi.com
	Julia W. Echavez	GECI	j.echavez@galerioenvi.com
	Oda S. Beltran	GECI	o.beltran@galerioenvi.com
	Vanessa Pallarco	GECI	v.pallarco@galerioenvi.com
	Leonila P. Galerio	GECI	gec@galerioenvi.com
	Maricel D. Lloren	GECI	m.lloren@galerioenvi.com
	Jecar Dela Cerna	GECI	j.delacerna@galerioenvi.com
	Robeen John Gerodiaz	GECI	r.gerodiaz@galerioenvi.com
	Agnes Cabanayan	GECI	a.cabanayan@galerioenvi.com
Participants	Wil Francis Magnabijon	CEO	0910-814-8454
	Alvin Veneracion	CMO	0921-674-5410
	Jim Changco	CMO	0917-641-7459
	Dominador Lagare	City Councilor	
	Reymando Clabi	Brgy. Captain - Dalwangan	0950-145-3992
	Reyna Jane Albutra	SPCCO - Lagare	0915-096-2130
	Margarita Jimena - Tuico	Yes We care	0928-746-7966
	Benjamin Garcia	Chamber	0917-530-6972
	Benny Claudio	Chamber	0917-634-1121
	Gina Villor	CPDO	0932-885-8322
	Ritchie Matutina	Brgy. Captain - City Heights	0948-933-5248
	Alikhan Bentaib	Brgy. Captain - Batomelon	0935-894-2397
	Josephine Jubakib	Wise	0975-502-9288
	Rose Ann Absin	Yes We Care	0919-788-7731
	Mary Joy Neri	GCCM	0933-603-0561
	Bernadeth Francisco	CPDO	
	Allan Marcilla	City ENRO	0985-232-4011
	Wilijado Fuster Jr.	DPWH SCIST DEO	0975-747-1766
	Lei Angelous Bantilan	DPWH SCIST DEO	0956-175-8981
	Renato Buhat Jr.	MinDA - Amosan	0917-129-9527
	Raymond Elicano	SPCCO - Lagare	0930-792-6035

NO.	SUBJECTS	STATUS/ ACTIONS
OPEN FORUM		
	Ms. Olivia Baguio acknowledged the presence of City Councilor of General Santos City Mr. Dominador Lagare. City Councilor Dominador Lagare addressed that they will not be affected by the project although the main corridor is Cagayan, Davao and GenSan and asked if this particular loan will be up to Malungon only. The City Councilor Dominador Lagare said that on behalf of the city mayor they are fully supportive of this proposed project.	Ms. Olivia Baguio replied that the loan will cover end to end.
	Mr. Benny Claudio asked if ROW is still considered in the project. Mr. Claudio inquired about the estimated budget for the project. Mr. Claudio added about the environmental permit.	Ms. Olivia Baguio answered that once the loan/budget is secured, ROW is included in the budget. Ms. Olivia explained that they are still at the due diligence and option analysis. Environmental permits are the requirements of ICC and there must be an environmental report (ECC). As for ECC we are still gathering data.
	Mr. Alvin Veneracion conveyed that there has been consistent road construction for the past 50 years, particularly in Sarangani and Davao del Sur. He expressed concerns that the proposed Davao-Gensan project may join the list of uncompleted road projects.	Ms. Olivia Baguio stated that the organization conducts regular preventive maintenance and uses a quarterly rating system. In the event of difficulties, they have access to international consultants who can recommend appropriate measures. These consultants work under contracts spanning 5-7 years, with designated 2-year periods for handling rehabilitation-related matters. The evaluations occur on a quarterly basis, as the PCCP preparation process is measured in square meters. Upon completing maintenance on one section, they will proceed to the next.
	Mr. Veneracion added that following a road construction project on one side, another construction commenced, resulting in a series of ongoing road developments. However, these roads fail to offer the intended convenience, thus defeating their purpose. Mr. Chairman asked the lifespan of a concrete pavement Mr. Chairman expressed concern regarding the recurring road construction repairs despite a concrete pavement's 20-year lifespan. He questioned whether contractors are held accountable or if corruption plays a role in this issue.	Ms. Olivia Baguio responded that the lifespan of a concrete pavement is around 20 years
	Mr. Chairman inquired about the specific farm-to-market road in General Santos that would be	Mr. Rejan Mala clarified that the project as a whole is from Cagayan to Gensan. In Gensan, part of the topic is the upgrading,

	impacted by the proposed project. Based on the objectives of providing and enabling more efficient movement of agricultural products from hinderlands to market. Mr. Chairman added about local government units (LGUs) that lack the capability to maintain their local roads, and questioned the criteria for these roads to be considered for inclusion by the Department of Public Works and Highways (DPWH). Ms. Bernadeth conveyed that they will coordinate with DPWH and DA regarding farm-to-market roads.	maintenance and rehabilitation of existing roads. Farm-to-market roads are not under DPWH's mandate but fall under the Department of Agriculture budget. Ms. Olivia Baguio explained that local roads are under the mandates of DILG. DPWH can't overstep in other areas because they have their own budget unless recommended by other agencies. Ms. Baguio further explained the process of assigning DPWH to handle the local roads.
	Ms. Bernadeth Francisco recommended incorporating the effects on the drainage system into the analysis and noted that the diversion route (Davao- Gensan) possesses certain restrictions due to its terrain, preventing conversion for alternative purposes. Mr. Chairman commented that the road to Davao supposedly Kiblawan and not Baluyan, no mountains will be traversed.	Ms. Olivia Baguio responded that they are here for inputs and in the process of gathering data. Ms. Olivia Baguio indicated that the matter would be given due consideration.
	Mr. Lei Angelous Bantilan asked regarding the land use plan,certain areas will be prohibited as part of the environment. What will be the definite outline of the Due Diligence and Option Analysis? We expect further consultations regarding those projects? The World Bank funding the feasibility study only or the construction also? Mr. Lei Angelous Bantilan shared that foreign funded projects are longer lasting and use different approaches when it comes to construction. Ms. Bernadeth added input that in the feasibility study should consider the light, drainage, and median barrier in the design. Mr. Alvin Veneracion continues on the concern of median barrier and its design to be added to the study. Mr. Chairman adds to the concern that median barriers that have been set down in Davao del Sur and Koronadal City are too high in comparison to the median barriers in Upper Sinawal Bridge up	Ms. Julia Echavez elaborated on the necessity of due diligence, which includes site reconnaissance and information collection to evaluate potential improvements for various tasks. The engineering team is composed of geologists, road safety specialists, hydrology experts, and additional professionals who closely monitor the primary corridors and assess various alternatives for the link roads. Ms. Echavez responded that they are at the feasibility study stage to view options to consider for the link roads and to outlook for improvements and upgrades for the main corridors. This is for the introduction of the study and will be updated as the study proceeds. The World Bank is set to finance the construction project. Following the completion of the feasibility study, various stages must be taken into account within the established timeline, ensuring that both international consultants and foreign contractors are engaged. Ms. Olivia Baguio emphasized that the current phase is focused on a feasibility study. The design process will involve consultations, and the employment of international consultants along with the adherence to international standards will be ensured. Ms. Baguio explained that at this point of time the study is gathering data for the options injected in the Due Diligence and Option Analysis. Local Government Units will be consulted. Ms. Baguio responded that regional office and district office have their own area of responsibility

	to Airport.	
	Mr. Allan Marcilla was concerned about the trees affected by the project and proposed to do an inventory on the number of trees affected and include the funding of tree replacement in the costing of the project. Mr. Allan Marcilla added that in the environment plan of the project sequestration should be incorporated.	Ms. Olivia Baguio explained that they have an appeal in the department. The replacement is part of the contract of the contractor in the case of the internationally funded projects. It is part of the terms of reference, and we have experts. In terms of tree replacement to be cut, DPWH has a policy and joint agreement with the DENR. Ms. Baguio stated that they are not mandated by their budget. We have agreements with other agencies that we don't go beyond us. mandate. We have MoA with
	Mr. Chairman commented that on the contract of the contractor the budget of replacement for trees should include the budget for maintenance. Mr. Allan Marcilla stated that CENRO submitted documents but there is no budget yet. Mr. Chairman's additional concern is the maintenance of the island in the center of the roads. Mr. Chairman suggested that with the use of the technology to construct a water line for the maintenance.	CENRO. We paid for the seedlings as well as the nurturing with the help of CENRO's identified organizations. As a government agency we are also working on a bigger budget. Ms. Baguio explained that the upkeep of the island is not under the mandates of the DPWH. The maintenance for the island has no budget.
	Mr. Renato Buhat concerns public safety particularly the size of the signages and the streetlights during construction.	Mr. Rejan Mala stated that they will discuss this with the construction team to the implementation of the concern.
	Mr. Chairman asked based on the project objective it started from hinderlands. Is it possible to include the farm-to-market road in the world bank project?	Ms. Olivia Baguio explained that it's not only the DPWH, but the world bank has also funded local projects but they have processes to follow and only 3 projects qualified.
	City Councilor Dominador Lagare asked why we can't utilize tunnels and what is the engineering problem. City Councilor Dominador Lagare in addition asks if there are any protected sites that have presidential proclamation in the main corridors. City Councilor Dominador Lagare reiterated good points in the meeting and shared that the City Government of General Santos is supportive of the project and thanked the participants of the meeting.	Mr. Rejan Mala explained that the construction for a tunnel is costly. Ms. Olivia Baguio stated that there are no protected areas in Gensan that can be affected by the proposed project. Ms. Baguio further explained the process of handling the documents in case that there are protected areas affected.

	Ms. Olivia Baguio asked for any additional concerns, particularly incident reports for the intervention of road safety measures. Mr. Armand Perez of GECI requested records from the City of General Santos City on accident reports or road accidents in the previous five years to utilize the data for the improvement of implementing road safety measures.	City Councilor Dominador Lagare responded that the City's PNP - Traffic Enforcement Unit holds the statistical data for the monthly accident report. And will have a MTFRB meeting along with PNP- TEU for the concern.
2.	Adjournment	
	Ms. Lilibeth B. Rico for her departing message thanked the mayor and all the participants for their insights on the project.	

PHOTODOCUMENTATION	
	Registration September 28, 2023)
	Invocation and National Anthem (September 28, 2023)
	Acknowledgement of participants (September 28, 2023)

	Dominador Lagare said that on behalf of the city mayor they are fully supportive of this proposed project. (September 28, 2023)
	Lei Angelous Bantilana asking about the efinite outline of the Due Diligence and Option Analysis? (September 28, 2023)

DATE, TIME AND PLACE OF THE MEETING:	**29 SEPTEMBER 2023**	**9:00 AM TO 11:00 AM**	**ALABEL, SARAGANI PROVINCE**
Attendees:			
	Lilibeth B. Rico	DPWH RMC II, UPMO	PM III
	Evangeline Carabal	DPWH RMC II, UPMO	PM I
	Olivia M. Baguio	DPWH RMC II, UPMO	PM I
	Bryna Nolleth Lazaro	DPWH RMC II, UPMO	Engr.II
	Rejan Mala	DPWH RMC II, UPMO	Engr.II
	Armand A. Perez	GECI	a.perez@galerioenvi.com
	Julia W. Echavez	GECI	j.echavez@galerioenvi.com
	Oda S. Beltran	GECI	o.beltran@galerioenvi.com
	Vanessa Pallarco	GECI	v.pallarco@galerioenvi.com
	Leonila P. Galerio	GECI	gec@galerioenvi.com
	Maricel D. Lloren	GECI	m.lloren@galerioenvi.com
	Jecar Dela Cerna	GECI	j.delacerna@galerioenvi.com
	Robeen John Gerodiaz	GECI	r.gerodiaz@galerioenvi.com
	Agnes N. Cabanayan	GECI	a.cabanayan@galerioenvi.com
Participants	Reuben G. Salazar	DPWH - SDEO	0905-553-0924
	Caryl Joy D. Forro	PENRO – LGU/Alabel	0998-190-7991
	Renato A. Buhat, Jr.	MinDA – AMO SCm	0917-129-9527
	Elmer C. Jingco	PEO	0995-633-6305
	Divine Grace Sumaira T. Fernandez	PLGU	0927-559-4205
	Nenita Sitier	PPDO	0917-498-1043
	Arnold F. Santos	PPDO	
	Joji Eunice C. Lasalita	PPDO	0908-896-6047
	Edwin Aballe	Barangay Captain - San Miguel	0930-221-8388
	Cesar C. Fernando	IPMR	
	Romeo T. Moda	IPMR - San Miguel	09109644703
	Annie Lorraine Jorillo	Brgy. Treasurer - Poblacion Malungon	0981-086-9669
	Arman U. Guili	SP	0939-350-8814
	Richard E. Saranillo	MPDO	0917-628-5451
	Norma P. Adia	BLGU	0909-646-9398
	Shiela S. Manocay	BLGU	0966-924-5279
	Ahasuerus Keen A. Pacheco	MPDO	0970-804-2987
	Mark Anthony Zagales	MEO	0970-188-6000

NO.	SUBJECTS	STATUS/ ACTIONS
Open forum		
	Nenita Sitier of PPDO mentioned the upcoming Provincial Development Council (PDC) – Sectoral presentation in October 2023. In line with the aforesaid event, she asked for the copy of the presentation to be endorsed and submitted to the PDC secretariat to be included in the agenda.	PM Olivia Baguio responded that her team would provide a copy of the presentation. Furthermore, DPWH will wait for the invitation for the PDC – Sectoral presentation.
	Edwin Aballe, Brgy. Captain of Brgy. San Miguel, Malungon, raised the concern on the affected structures. He was particularly concerned on how to explain the compensation to the public. Caryl Joy D. Forro of PENRO informed the participants that Galerio Environmental Consultancy Inc. is in-charge of the Feasibility Study and data collection for Due Diligence and Options Analysis.	PM Olivia Baguio referred to RA 10752 otherwise known as An Act Facilitating the Acquisition of Right-Of-Way Site or Location for National Government Infrastructure Projects as a reference for the compensation. She iterated that in foreign-assisted projects, there are additional costs (e.g., transportation) with the government compensating them. As the project is still in its first phase, they are only required to provide the estimated cost of the project. On the Detailed Engineering Design, LGUs will be involved.
	Richard E. Saranillo of MPDO requested a recap of the presentation as they arrived late due to other prior commitments.	PM Olivia Baguio recapitulated the whole presentation.
	Mr. Arman U. Guili commented that the road, as presented, from San Miguel to Datu Intan is not an existing road and can only be traversed through motorcycles and horses. He asked for clarification where the road connected to the Sta. Maria Road will traverse. Mr. Arman also suggested a different route traversing five barangays which allegedly benefits more farmers. Mr. Arman Guili also pointed out various routes and which barangays could benefit most but he emphasized the road from San roque traversing barangay Upper Lumapat to San Juan wherein these 3 barangays produce most of the agricultural products particularly coconuts, banana and cacao and pointed out that in one of these barangays, a cacao processing plant was constructed but was stopped due to difficult road access.	Ms. Olivia Baguio took note of Mr. Guili's suggestions and explained that the feasibility studies are not limited to only one option. Mr. Armand Perez from GECI affirmed Mr. Guilli's sentiments regarding the difficult conditions of the road from San Miguel to Datu Intan. Mr. Armand informed Mr. Guili that there are three proposals being prepared to be presented to NEDA. Ms. Olivia Baguio added that if the procurement of the loan is done, international consultants will be hired. Ms. Olivia Baguio thanked Mr. Arman Guili's inputs and assured him that they will look closely into his suggestions.
	Engr. Mark Anthony Zagales, Municipal Engineer from Malungon, commented on the conduction of the feasibility studies.	Ms. Olivia Baguio stated that her team together with the World Bank, went to the Sta. Maria area but they were only able to go to the passable sections in Malungon area.
	Will there only be revisions of the Feasibility Studies? Mr. Zagales also suggested that the most feasible route for them is the San Miguel - Datu Intan road.	Ms. Olivia Baguio stated that a feasibility study offers different alternatives, and it aims to give options to the project facilitators. She also added that there will be more consultations in the future. Ms. Olivia Baguio thanked Mr. Zagales for his input. She explained that the project is still in its first phase and is still awaiting future funding from the World Bank. Once the loan is secured, and the approval from NEDA, the department will hire international consultants to aid the detailed design process. In addition, a representative from MinDA stated that there are five FS and one was recommended. The due diligence and option analysis study is considered as an alternative. He also added that the Sta. Maria-Malungon Road is part of the areas identified by the NTF- ELCAC.
	Mr. Arman U. Guili asked if the funding presented will	A representative from MinDA replied that all of the proposals connecting to the main corridor can be

	prioritize the proposed national road.	proposed to the board. He also asked the PLGU if they have any proposal that does not connect the two roads.
	Mr. Guili asked where the proposed road traverses. He also suggested a different route which, according to his own opinion, is easier to connect to the main corridor. He also expressed his concern to the IP people near the area because according to him it comprises 80-85% of residents from the Tribo Tagakaulo. In addition, he also noted that from junction Malungon traversing Upper Mainit to San Miguel connecting Brgy. Kawayan are also provincial roads and every year, funds are allocated for concreting. He finished his statement by leaving it up to the hands of the project facilitators whether or not they will follow their suggestions.	A representative from MinDA thanked Mr. Guili for his recommendations and stated that they encourage more input from the locals as it is the main goal of the public consultation.
	Mr. Richard E. Saranillo, MPDO, expressed his gratitude towards the Governor's prioritization of the proposal. Mr. Saranillo also noted that there is misinformation regarding a Malungon to Sta. Maria road. The truth is the study is still on-going and has not yet been approved by the World Bank.	A MinDA representative clarified that certain sections of the road already have initial fundings.
	Mr. Elmer Jingco expressed his concern about conducting multiple Feasibility Studies on the same section conducted by different consultants. He suggested to exempt the area with existing FS and focus on other scope of the project to save funds.	Ms. Olivia Baguio clarified that the consultants' job is to create Due Diligence and Options Analysis, which means that they will not start from scratch but rather provide possible recommendations. Mr. Armand Perez explained that they are hired by the World Bank to conduct due diligence which means that they will recommend which proposal costs less but gives premium benefits to its beneficiaries. He added that despite the fact that there are existing feasibility studies around the area, it will be compiled and determine which proposals will give the most benefits at a lower cost. Ms. Julia Echavez from GECI added that they are aware of the existing feasibility studies and these studies were used as a part of their review in conducting the Due Diligence and Options Analysis. If one of these feasibility studies is approved, funds from the World Bank will be secured. Ms. Olivia Baguio set a target date for the approval of the loan which is by April 2024. Mr. Armand Perez urged the LGU's to provide precise and detailed data to identify the black spots that need rehabilitation as it is one of the requirements from the World Bank Ms. Vanessa Pallarco from GECI added that the existing FS can be used as a reference as a part of the desk review. At the same time as part of the added feature of the ESF from the world bank, the interventions should adhere with the World Bank's "do no harm" principle which looks into the relationships between the community.
	Mr. Arman Guili added that one of the proposals could traverse the ancestral domain of the tribe Tagakaulo and is awaiting the issuance of the DENR for the Certification of Non-Overlapping. He also appealed to the team to consider his earlier proposal.	Ms. Olivia Baguio thanked Mr. Arman and assured that they will be working with various government agencies.
2.	**Other Matters**	

	Miss Bryna Nolleth Lazaro from DPWH RMC II, UPMO informed everyone that the meeting will be cut short as they will still travel to Malita.	

PHOTODOCUMENTATION	
	Registration (September 29, 2023)
	Acknowledgement of participants (September 29, 2023)
	Presentation of the proposed project (September 29, 2023)

	Edwin Aballe expressed concern about the structures that were affected. He particularly worried about how to communicate the compensation plan to the public. (September 29, 2023)
	Richard E. Saranillo expressed his appreciation for the Governor's support and prioritization of the proposal. (September 29, 2023)
	Arman Guili questioned the proposed road's path and suggested an easier alternative. He expressed concern for the Tagakaulo tribe, an Indegenous People (IP) living in the area, who make up 80-85% of residents.

DATE, TIME AND PLACE OF THE MEETING:	**29 SEPTEMBER 2023**	**2:00 P.M. TO 4:00 PM**	**MALITA, DAVAO OCCIDENTAL**
Attendees:			
	Lilibeth B. Rico	DPWH RMC II, UPMO	PM III
	Evangeline Carabal	DPWH RMC II, UPMO	PM I
	Olivia M. Baguio	DPWH RMC II, UPMO	PM I
	Bryna Nolleth Lazaro	DPWH RMC II, UPMO	Engr.II
	Rejan Mala	DPWH RMC II, UPMO	Engr.II
	Armand A. Perez	GECI	a.perez@galerioenvi.com
	Julia W. Echavez	GECI	j.echavez@galerioenvi.com
	Oda S. Beltran	GECI	o.beltran@galerioenvi.com
	Vanessa Pallarco	GECI	v.pallarco@galerioenvi.com
	Leonila P. Galerio	GECI	gec@galerioenvi.com
	Maricel D. Lloren	GECI	m.lloren@galerioenvi.com
	Jecar Dela Cerna	GECI	j.delacerna@galerioenvi.com
	Robeen John Gerodiaz	GECI	r.gerodiaz@galerioenvi.com
	Agnes N. Cabanayan	GECI	a.cabanayan@galerioenvi.com
Participants	Janice T. Otordos	Brgy. Sec - Demoloc	0935-186-2585
	Jerry P. Matanggo	Brgy. Kagawad - Demoloc	
	Alberto Baliota III	Brgy. Chairman - Demoloc	0966-421-3746
	Frederick F. Fajardo	PPDO	0917-301-9584
	Jovie Ann B. Ortigas	PEO	
	Victoria U. Yu	Brgy. Captain - Pongpong	
	Ceasar T. Calzada, Jr.	Brgy. Captain - Poblacion	0912-609-8616
	Mariano G. Panorio	Brgy. Captain - San Isidro	0912-519-3297
	Anthony B. Guindulan	Brgy. Captain - Datu Intan	0930-786-7121
	Rogelio A. Mamulawan	Brgy. Kagawad - San Antonio	
	Benjie E. Sandigan	DPWH – DEO	0917-322-6001
	Rey G. Mejares	DPWH	0910-983-9968
	Madelyn C. Birondo	PENRO – LGU	0921-272-1387
	Rey Marlone B. Dela Cruz	BLGU - Malita	0953-320-3124

NO.	SUBJECTS	STATUS/ ACTIONS
OPEN FORUM		
	Ms. Olivia Baguio inquired about PPDO on when the next Provincial Development Council will be held.	\Mr. Frederick Fajardo of PPDO responded that the next PDC will be in October, although no specified date yet.
	Mr. Rey Mejares of DPWH - District informed that there is an existing road project and explained the details of the project.	Ms. Olivia Baguio shows appreciation for the information given.
	Mr. Frederick Fajardo asked about the involvement and influence of government agencies such as PENRO in the road project handling, the road right of way and the affected households.	Ms. Olivia Baguio explained that the hired consultants are in charge of the feasibility study and gather this sort of data for Due Diligence and Optional Analysis to deliberate by MinDA for submission. The involvement of government agencies is to provide data that can contribute to the study. Mr. Anthony Guindulan, the Barangay Captain of Datu Intan, shared his community's experience with flooding and landslides.
	Mr. Joey from DPWH District, asked the barangay captains of the affected barangays if they had encountered issues like floods or landslides.	Mr. Joey assured Captain Guidalan that his input will be considered.
	Mr. Jerry Matanggo from Brgy. Demoloc had an additional query regarding whether there is compensation for the cutting of trees, including coconut.	Ms. Olivia Baguio clarified that there is an existing law in place to compensate for the cutting of trees and houses affected by the project. Additionally, she noted that the Philippine Coconut Authority is responsible for covering the cost associated with compensating coconut trees.
	Alberto Baliota from Brgy. Demoloc asked about the project's effects on their community.	Ms. Olivia Baguio mentioned that the inclusion of Barangay Demoloc is considered as an alternative option in the project. Additionally, she stated that there are currently five existing alternative options under review, in line with the Due Diligence and Optional Analysis. Mr. Armand Perez from GECI clarified that the inclusion of brgy. Demoloc in the study was based on DPWH data. He further explained that if a section of a barangay was affected to a certain extent, it is considered as being involved in the study.
	Alberto Baliota added there is an existing road project from Demoloc to Malungon, but it has been interrupted due to conflicts related to boundaries.	PM Olivia Baguio affirmed that the provided inputs would be considered in the decision-making process.
	Mr. Benjie Sandigan of DPWH-DEO referred to Indigenous Peoples' Rights Act of 1997 as a reference in the concern that the National Commission on Indigenous Peoples should be informed on account of Ancestral Domain in order to invite IPs during consultation.	PM Olivia Baguio stated that NCIP is one of our partners. Ms. Oda Beltran of GECI reported that they have conducted assessments from Poblacion to Sta. Maria to Barangay San Antonio. Additionally, she mentioned that in Sarangani, a member of the Sangguniang Panlalawigan informed them that they have resolved the ancestral domain issue in San Miguel.
	Ms. Beltran asked the BLGUs about the status of CADT (Certificate of Ancestral Domain Title), considering that 90% of the population in the five barangays of Sta. Maria belongs to the Tagakaulo community. She also noted that based on their observations, the road is situated on top of a	Mr. Anthony Guindulan stated that most of the population there belongs to the Tagakaulo community, and there are no Ancestral domain issues. He also mentioned that the community relies on experts for road construction due to their limited knowledge in that field.

	mountain.	
	Mr. Joey requested DPWH on the alignment of the road construction.	Mr. Benjie Sandigan from DPWH clarified that the original road alignment is unsafe for travel due to a section in Brgy. Pongpong before Sitio Lumbia, where it is not feasible to construct two lanes, especially during heavy rains, as it is susceptible to landslides.
	Ms. Maricel Lloren from GECI clarified the direction of the mentioned routes, and	Mr. Sandigan recommended exploring Barangay Kidadan as a potential rerouting option while maintaining the same exit route. He presented two suggested routes: A route before the landslide-prone area that leads downward into a section of Barangay Kidadan and then exits to Barangay Lumbia. An alternative route that enters the main portion of Barangay Kidadan and proposes the construction of a bridge.
	Ms. Oda Beltran requested the DPWH to assist GECI for review of the suggested routes	
	A representative of Barangay Affairs Santa Maria inquired about the involvement of the Local Government Unit in the Project.	Ms. Olivia Baguio responded that the Local Government Units (LGUs) play a role in providing assistance for security purposes, contributing to the Comprehensive Land Use Plan (CLUP), and involving residents in providing input for the design of the proposed project The representative added with regards to the CLUPs that it is not finalized because it is only the first term of the new administration.
	Alberto Baliota inquired whether brgy. Demoloc could be included in Phase 2 of the project.	Ms. Olivia Baguio replied that MinDA will decide to finalize the project.
2.	**ADJOURNMENT**	
	Ms. Lilibeth B. Rico expressed her gratitude to the guest and all participants for sharing their valuable insights on the project in her departing message.	

PHOTODOCUMENTATION	
 	Invocation and National Anthem (September 29, 2023)
	Mr. Rey Mejares informed about an existing road project and elaborated on its specifics. (September 29, 2023)

	Mr. Anthony Guindulan,] shared his community's experience with flooding and landslides. (September 29, 2023)
	Mr. Sandigan suggested considering Barangay Kidadan as a possible alternative route while keeping the same exit route intact. (September 29, 2023)
	Oda Beltran requested the DPWH to provide assistance to GECI in reviewing the suggested route. (September 29, 2023)

Annex 21. Documentation of Key Informant Interview (KII), October 16 and 19, 2023

Location: **H4ID | Camp Evangelista, Brgy. Patag, Cagayan Davao de Oro City**

Date and Time: **October 16, 2023 / 2:45 PM to 4:15 PM**

ATTENDEES: (10)

1. Gen. Jose Maria A. Cuerpo
2. Col. Albert C. Flores
3. LTC Michael S. Benyan
4. LTC Reynaldo Goce
5. Kol Ted B. Dumosmog
6. Vanessa Pallarco
7. Carmeli Marie C. Chaves
8. Maricel Lloren
9. Jecar Dela Cerna
10. Marjanesse Armillaz

Vanessa Pallarco

- Asked Gen. Cuerpo for his insight on the road project including the pipelines.

Jose Maria A. Cuerpo

- Thought the project was good, and his team who were in the meeting agreed.
- Suggested to consider the IP's insights, Right of way issue (ROW), FPIC, and CADT
- Mobile Community Support and Sustainment Team (MCSST)
- Suggested checking with the PNP for additional details on the city's crimes. To PNP Gen. Layog(?)
- Cagayan de Oro cities is considered safe.
- TIKAS DPWH - Tatag ng Imprastraktura para sa Kapayapaan at Seguridad" (TIKAS) program

Carmeli Marie Chaves

- Do you think this project will contribute to peacebuilding?

Jose Maria A. Cuerpo

- Yes, there's a low rate for ambush cases etc. in Claveria
- NPA names: Peddler, SPLC
- On going roads: Agusan del Norte, Lapas, San Luis, St. peter, Malaybalay
- Kabanglasang laak, cut road

Carmeli Marie Chaves

- Only main highway, including safety

Jose Maria A. Cuerpo

- so far, Link Road areas are okay, safe

Ted B. Dumosmog

- ROW problem in the Main Corridor

Jose Maria A. Cuerpo

- no problem with NPA

Vanessa Pallarco: CMO

- Normal highway standard
- BDP – Brgy. Development Program
- Challenges; failed bid, not aligned to brgy., long process

Jose Maria A. Cuerpo

- Agricultural landowners' problem if their land is within the project line.
- Solution to agricultural problems suggested by Gen. Cuerpo:
    - Present how this project simplifies the market compared to the conventional methods
    - The DPWH offers landowners
    - The Right of Way should only be considered as a last resort, as pursuing this option could exacerbate the issue and prove unhelpful

Jose Maria A. Cuerpo

- Suggest to tenure map
- DPWH should conduct a detailed survey
- When DPWH conducts a consultation, it should include social cost and how it would affect the IP community.
- The coverage of Civil Military Operation includes Region 10 and Caraga

Carmeli Marie Chaves

- Peace and security is a long-time problem; do you think there's still hope?

Jose Maria A. Cuerpo

- Yes, reaching out to them is crucial. In their isolated state, providing accurate information is vital to prevent them from being easily influenced by potentially harmful ideologies, such as communism.
- According to Cuerpo, Indigenous Peoples (IPs) value this type of project because it makes them feel acknowledged by the government. They sense that the government is attentive to their needs and concerns, fostering a sense of inclusion and consideration.
- Before, Indigenous Peoples (IPs) felt abandoned as the government provided insufficient support in their area
- Environmental risk assessment is also considered when undertaking projects like this.
- The DPWH planned a road designed for long-term access, climate resilience, and safety

- Cuerpo mentioned that the slope in Bukidnon is possibly 40 degrees, making it challenging and unsafe.

Carmeli Marie Chaves

- Emphasized that a crucial aspect of this due diligence project is the safety of the residents.

Ted B. Dumosmog

- Recommended solutions for road-related issues, such as road crashes, emphasizes the significance of proper signage
- It was also stated that road building always comes with a proper drainage system

Vanessa Pallarco

- How is peace security in CDO?

Jose Maria A. Cuerpo

- It is good and safe

All:

- They also mentioned that road projects are highly welcomed.

Ted B. Dumosmog

- Also recommended opening new roads, possibly connecting Malaybalay and Talaka, Magpit to Davao from Kidapawan

Photo Documentation	
	Jose Maria A. Cuerpo recommended taking into account the insights of Indigenous Peoples (IPs), addressing the Right of Way (ROW), obtaining Free, Prior, and Informed Consent (FPIC), and respecting Certificate of Ancestral Domain Title. (CADT)
	Carmeli Marie Chaves emphasized: Resident safety is a vital aspect of a due diligence project.

ATTENDANCE SHEET

Project : MTCIP - DDOA
Activity : Key Informant Interview
City/Mun. : Cagayan de Oro City/ Misamis Oriental
Date : October 16, 2023

	NAME	AGE	GENDER			CONTACT NUMBER	EMAIL ADDRESS	SIGNATURE
			MALE	FEMALE	LGBT			
1.	COL TED B DUMOSMOG	53	✓			09178046001	teddumo91@yahoo.com	
2.	LTC REYNALDO ROMA GOCE	49	✓			09176207477	ordinalrey_99@yahoo.com	
3.	LTC MICHAEL REY S. PEÑAYAN	49	✓			0917-583-6684	reysrpenayan@gmail.com	
4.	COL ALBERT C. FLORES	51	✓			0917 309 2996	jetsky97@yahoo.com	
5.	MAJGEN JOSE MARIA R. CUERPO	56	✓			0917-877-9990		
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								

Location: **Eastern Mindanao Command, Davao City, Davao del Sur**

Date and Time: **October 19, 2023 / 3:00 PM to 4:15 PM**

ATTENDEES: (6)

1. LT Gel Diaz PN
2. Col Monfort PA
3. LTC Ezra Balagtey
4. Vanessa Pallarco
5. Maricel Lloren
6. Jecar Dela Cerna

Gel Diaz

- Is there a possible impact on biodiversity?

Vanessa Pallarco

- Environmental safeguard
- Implement project for peace

Ezra Balagtey

- concern about capitalist

Monfort

- Mitigating shareholder resistance
- Soften the resistance by hiring people to do labor
- Inquiring about environmental and social standards

Vanessa Pallarco

- discussed the parameters, environmental factors, and consideration
- gender component (teenage pregnancy, labor)
- political timeline
- local political dynamics (road rehabilitation)

Monfort

- The main urgency is addressing poverty
- areas of partnership and cooperation for implementation

Vanessa Pallarco

- Asking about how to contribute to ELCAC efforts?

Monfort

- piso sign at the end
- economic benefit

Vanessa Pallarco

- Asking about high risk areas?

Ezra Balagtey

- urgency free
- The drivers of conflict are still there
- concretize the peace gain
- drivers of conflict in Bukidnon (Land issue)
- burning of heavy equipment like backhoe in Impasug-ong
- Issue in Sumilao, Bukidnon

Monfort

- There are some risk from local police, mayors, Indigenous people (IPs)
- We are your partner during implementation
- avoiding some issues
- hiring locals to guard and monitor the equipment

Vanessa Pallarco

- conflict induce dynamics?

Ezra Balagtey

- FPIC one of the developments of ancestral domain
- National heritage (burial site)
- resource utilization mapping
- mapping of ancestral domain

Monfort

- asking for the coordinates of the alignment

Gel Diaz

- inquiring about the availability or specification for soil and gravel

Monfort

- asking about the total length of the project

Ezra Balagtey

- Suggested that laborers will come from local community
- labor is part of security
- security sensitivity

Vanessa Pallarco

- White and red areas?

Ezra Balagtey

- Bukidnon - still in the process of clearing
- Davao City - clear
- Malungon - clear

Gel Diaz: suggested and raised her concerns about the following:

1. Design - Technological Innovation that can last 50 to 100 years
2. Solar light
3. Road Waste
4. Solid Waste Management
5. Climate change resilience - buying of resilience index software
6. Particles from car wheels that may affect marine biodiversity

Photo Documentation	
	Vanessa Pallarco presented the proposed project to the participants.

ATTENDANCE SHEET

Project : MTCIP - DDOA
Activity : Key Informant Interview
City/Mun. : Davao City
Date : 10/19/23

NAME	ADDRESS	SECTORAL REPRESENTATIVE						SIGNATURE
		Women	Youth	Senior Citizen	Indigenous People	Business Sector	Peace & Security	
1. LT GEN B DIAZ PN	DAVAO CITY	✓					✓	
2. COL MONFORT PA	" "						✓	
3. MTC EDSA [illegible]								
4.								
5.								
6								
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15.								

Annex 22. Documentation of Focus Group Discussions (FGDs), October 17,18, and 20, 2023

Location: **CPDO Conference Room, Cagayan, Davao de Oro City, Misamis Oriental**

Date and Time: **October 17, 2023 / 9:00 AM to 11:00 AM**

Attendees: (Please see attendance sheet)

Q1: What are your current experiences with using the [name of main corridor segment and/or link road] in your area? (how often, how long, for what purpose the road is used)

Jeo M. Vaterio M. Vaterio (City Planning Development Office): The road is smooth and fast, except in Puerto where it's always crowded. The planned road improvement doesn't seem to solve the issue because the chosen exit is very congested. I wonder why they picked that route; some people use balabal road for faster travel.

Jocelyn M. Salcedo M. Salcedo (Women and Senior Representative): Same concern with Sir Joe; they usually take the Balabal route instead of the congested Puerto route.

Jeo M. Vaterio M. Vaterio: There is also a similar project with yours. Does the railway plan affect the highway? Malaybalay road is also very populated causing traffic

Carmeli Chaves (GECI): There is an overlapping of project

Carmeli Chaves: What is your evaluation of this project? Do you find it helpful?

Carmeli Chaves: How do you assess this project? Do you think it will help you as a resident of CDO?

Simonette F. Sagaral (ORO-TIPC): From the investment office one of their concerns is the logistics. Way back 2017, the port is undergoing expansion and it's crucial because it is not just about the congested port but also the traffic experienced when transporting goods. That's why it is important for them to consider the logistic side and facilitate the transport of goods. The port is large but not adequate.

John Asuwan (CEO): I'm familiar with the area because I used to own a farm in Libona. Initially, I took this road because it was closer in terms of distance. However, since 2014-2015, Ive been using the back road despite its rough condition for two reasons: first, it takes only about 45 minutes to travel, and second, it's much safer, reducing the risk of accidents. So, my reaction to this is that:

- It's advisable for different groups working in similar projects to collaborate and share their roadmaps to prevent conflict and overlapping efforts.
- I echoed Monette's point about agricultural business. In the agricultural sector, it's crucial to identify the destination for goods. For instance, corn from Bukidnon has been a trade staple for two decades, with mills improving in brgy. Alae area.
- Traditionally, trading and vegetable transportation occur in Puntod and Bulua. respectively, directing transportation through Puerto, which is much farther away, and doesn't make sense. Why not make new roads that could shorten travel time, and that's one of the reasons why we have coastal roads, to decongest the traffic in

Puerto, bypassing is a better option. I suggest holding a meeting with other groups working on different projects to improve project implementation.

Carmeli Chaves: Agrees with the suggestion and opinion of Sir John

John Asuwan: If we can just cut down the travel time it'll be efficient. Those are the things we need to consider.

Carmeli Chaves: Who developed the mentioned shortcut road and coastal road?

John Asuwan: DPWH

Simonette F. Sagaral: Infrastructure is not only the answer to congested roads. There is also a group that supports telecommuting, shortening the work week. There are many ways to address the issue, not just active transport.

Carmeli Chaves: That's right, telecommuting could also be a way to address congested roads. DPWH's solution is to have 4-way roads. Think also of the logistic system.

Liza: same with Sir John

Jeo M. Vaterio (CPDO): What is the timeframe of this project? When will this be implemented?

Oda Beltran (GECI): if this project is approved by NEDA and other related offices, maybe by 2024.

Carmeli Chaves: In addition to your concerns; road crashes, congestion etc. what other challenges have you experienced in this road project?

John Asuwan: Some trucks passing in the Talakad area are prone to natural disasters like floods. However, if the road is widened, it becomes an advantage, especially for those transporting goods. I suggest considering additional bypasses in some areas here in Cagayan.

Carmeli Chaves: good point, consider roads and highways that's not just Puerto John Asuwan: The biggest challenge is the area in the northern part of the town Carmeli Chaves: We will have to ask the City Planning

Q2: What are your hopes and expectations for the project? In addition to what you've mentioned.

Isidro G. Reyes G. Reyes (ON-TIPS)

- One of the problems is the result of statistics, 60% of the population is in the urban area and 40% in rural areas.
- There are cases of immigration.

Carmeli Chaves: Improving the main corridor and openings of roads can encourage immigrants to the city. The objective is to link the agricultural communities and bring their product closer to the market. There will be a possibility that the people will migrate to where their livelihood is.

Isidro G. Reyes: People in the agricultural area will no longer go to the City to buy or sell products.

Jeo M. Vaterio: The DPWH created a tourist spot along the road, providing travelers with a

view to appreciate. It serves as a rest stop, allowing them to take a break and relax after a long drive. However, numerous business owners or commercial establishments, such as coffee shops, have their stalls there. If this road project is implemented and includes a stopover for travelers, it's possible that additional establishments may emerge in the area.

Carmeli Chaves: Yes, however, it could pose an environmental problem. We wouldn't want to introduce something that might harm the area, as there's a chance it could negatively impact the environment.

Isidro G. Reyes: In the 1980s, DENR discouraged the construction of highways in forest lands due to the potential negative environmental impact. However, over time, they recognized the potential advantages. People might be attracted to live there, and having it designated as a national highway could offer protection through increased monitoring. Moreover, the highway could act as a buffer against grass and forest fires, a recurring challenge faced by DENR every year.

Carmeli Chaves: Would like to ask if the areas along Puerto and Sayre highway frequently experience floods?

Isidro G. Reyes: the lower part of the said area.

Carmeli Chaves: Is there a problem in relation to earthquakes?

Isidro G. Reyes: none

Carmeli Chaves: How about peace and order issue in this area? Between what group?

Isidro G. Reyes: Actually, CDO has 11-14 barangays covered by ELCAC

Carmeli Chaves: You think this project will improve access to education, health care and other services?

Simonette F. Sagaral: From our POV, the DPWH is not the only office studying the area of Cagayan.

Isidro G. Reyes: At one point, CDO's participation rate reached 120%, prompting curiosity about why it exceeded 100%. Upon analysis, it was discovered that students from Tagoloan and various nearby areas were coming to Cagayan for education.

Q3: Are there any other concerns aside about the project from what was mentioned?

Isidro G. Reyes: Some DPWH project areas are a flood and landslide prone area; I suggest conducting a thorough geologic study to avoid this type of problem

Carmeli Chaves: therefore, FS should include detailed geologic studies

Simonette F. Sagaral: First consideration is water

Carmeli Chaves: indeed, if we plan an urban development, we do not only consider the land but also water. Most specially here in CDO where it is susceptible in flooding and our drainage system needs to be upgraded.

Isidro G. Reyes: Usually, their only 10% available drainage system where in fact the DPWH standard must be 30%.

Carmeli Chaves: Will inform DPWH about this

Oda Beltran: In relation to Q2, how's the situation of the IP communities in Puerto? What is their current location or status? Are the resettled?

Isidro G. Reyes: usually compensation. Though, this is not a concern for DPWH but the LGU's

Simonette F. Sagaral: there should be city urban planning and CHUD should be here for this to ask their POV

Isidro G. Reyes: Involuntary Resettlement

Carmeli Chaves: what is your response to that? Is there a program from the LGU that deals with that?

Jocelyn M. Salcedo: yes, we could refer that to CHUD

Isidro G. Reyes: in the housing back log way back year 2013, they counted the effect of the project to the community. The problem is they don't have enough mechanism to prevent immigrants.

Carmeli Chaves: Yes, the is none because according to our Constitution we have the freedom of domicile. We have no border control.

Carmeli Chaves: is Right of Way acquisition part of the issue?

Isidro G. Reyes: yes. offers rental housing

Jeo M. Vaterio: the ROW problem does not only affect the residents. There are cases where they experience utility problem in which the project was done but the equipment used stays in the area which causes trouble.

Carmeli Chaves: why?

Jeo M. Vaterio: lack of utility provider

Carmeli Chaves: so, what do you suggest addressing this issue?

Jeo M. Vaterio: there should be a coordination meeting.

Isidro G. Reyes: no budget for relocating. There is also a problem with tree cutting.

Jeo M. Vaterio: in addition to tree cutting issue, the implementation of DPWH for this is by segment. Suggests DPWH to apply permit of cutting trees by whole not only by section.

Carmeli Chaves: Your feedback is well noted

Isidro G. Reyes: actions too late to be addressed.

Vanesa Pallarco (GECI): additional question

Carmeli Chaves: Vanesa Pallarco is our conflict specialist

Vanesa Pallarco: ask about community health and safety, if they have felt/seen the long-term contribution to peace and development implemented in Cagayan de Oro? Do you think the project contributes to this?

Isidro G. Reyes: yes, social services

Oda Beltran: contractor hires outside worker. In your past experiences, is there no issues from your offices on hiring outside construction worker or are there policies for that?

Jeo M. Vaterio: Usually, LGU would like them to hire workers inside the community and provide

training programs. There are only 30% skilled workers. Security concerns.

Vanesa Pallarco: Do you have grie Vanesa Pallarco ce mechanism for labor practices for example the outside laborers have been involve in abuse to someone from the community?

Isidro G. Reyes: that should be part of project monitoring.

Carmeli Chaves: addition, the port of CDO is a major port and this project involves port-port from CDO to Gensan. I've heard many trafficking issues, and the port is one of the hot spots. In direct impact there might be cases where the port will used not only for crops and goods but also children or women. We have mentioned cases about immigrants, it may not be just from Cagayan de Oro, do you think there's a place for worries? Is there a program from LGUs to prevent human trafficking issues?

Jocelyn M. Salcedo: Yes, we have. Though it is not actually a program but a council for the protection of children and VAWC.

Carmeli Chaves: How about the monitoring of ports?

Jocelyn M. Salcedo: City police

John Asuwan: about peace and order, there are two things to look at (1) rebelde, (2) organized crime groups. If there is better infrastructure, there would be a chance that these would leave the area.

Jocelyn M. Salcedo: agrees to the statement of Mr. John Asuwan and added; incident like hold ups, ambush etc. may occur because they could easily use the roads.

Carmeli Chaves: it'll now become a police problem.

John Asuwan: to the access roads, somehow there should be a control unit and must respond quickly.

Carmeli Chaves: army and police should be involved here.

Isidro G. Reyes: comments on Puerto, it is congested. Why not consider Alae to Libona

Q4: What are your suggestions on how the road improvement project can be implemented to address these concerns, manage risks, or mitigate possible adverse effects?

Simonette F. Sagaral Upgrade Lane in Puerto. Is there an impact in master planning?

Jeo M. Vaterio: none because the DPWH gave their alignment too late.

Carmeli Chaves: is there transport plan in Cagayan?

Isidro G. Reyes: there is but not really for network plan, the transport masterplan focusses on the transport.

Carmeli Chaves: ask for a copy

Isidro G. Reyes: not for disclosure

Isidro G. Reyes: Must have streetlights.

Oda Beltran: We will take note of this and coordinate to other project

Isidro G. Reyes: Addition, CDO lacks many things including perfect plan, they must improve.

Why not consider linking to Talakag area?

Carmeli Chaves: may we ask for the opinion of the representative of CHUDD about the existing housing program?

Oliver Torres (CHUDD): District 1 housing with 16 hectares but only 10 hectares are built. There is also project in relation to NHA, a condo type building has 960(?) units.

Carmeli Chaves: still not enough for everyone right? So, what's the plan of your office?

Oliver Torres Mayor's current mandate is the (CMP) Community Mortgage Program because it is one of the projects that is achievable and won't take too much time to finish.

Carmeli Chaves: how is the Local Shelter Plan?

Oliver Torres the project was stopped, it supposed to have 8 pilot barangays; Carmen, Macasandig, Gusa etc. The objective of this plan is to have the barangays look for possible land and the city will help in implementing it by facilitating.

Oda Beltran: concerns about the ISF, where are they now?

Oliver Torres: no update, the last update done by CHUDD was profiling only.

Q5: How would you and your community like to be involved in the planning, design, and implementation of the road improvement project? Would you like to be involved?

Rogelio Cortola (Brgy.Puerto Representative): Concerns on where the affected areas be relocated, for in DPWH's they'll be compensated but not relocated. Also, if they'll relocate what will happen to their livelihood?

Carmeli Chaves: no ROW

Oliver Torres: ISF concern, urban renewal, no cost of land accusation and no displacement.

Simonette F. Sagaral suggests the involvement of business communities.

GECI: already part of the evaluation.

Jeo M. Vaterio: lessen/avoid curvy roads.

Isidro G. Reyes: consider tunnel project, reduce tree cutting

Photo Documentation:

Oda Beltran discussed the proposed study of Mindanao Transport Connectivity Improvement Project (MTCIP)

Jeo M. Vaterio is inquiring about the project's timeline and its implementation date.

Oliver Torres provided information about a collaborative project with the National Housing Authority (NHA).

ATTENDANCE SHEET

Project : MTCIP - DDOA
Activity : Focus Group Discussion
City/Mun. : Cayan de Oro City/ Misamis Oriental
Date : October 17, 2023

	NAME	ADDRESS	SECTORAL REPRESENTATIVE						SIGNATURE
			Women	Youth	Senior Citizen	Indigenous People	Business Sector	Peace & Security	
1.	LIZA MARJORIE ROSE M. NOVAL	Cagayan de Oro City							
2.	Julius Anggamay	Cagayan de Oro City							
3.	Jocelyn M. Salcedo	Cagayan de Oro							
4.	Hanin Lagnindab	CAGAYAN DE ORO							
5.	Jona Kawan	CDO							
6	Oda S. Beltran								
7.	Carmeli Chaves	Galerio ECI Inc.							
8.	Vanessa Pallana	GECI							
9.	Jeo. M. Valerio	CPDO							
10.	SIMONETTE F. SAGARAL	ORO-TIPC							
11.	[illegible] G. [illegible]	ORO-TIPC							
12.	Monica Lucas	GECI							
13.	MARIANESSE ARMILLA	GECI - OJT							
14.	Rogelio V. Corrodo	Puerto							
15.	TORRES, OLIVER GREGORY	CHUDD							

REGISTRATION FORM

Project : MTCIP - DDOA
Activity : Focus Group Discussion
City/Mun. : Cayan de Oro City/ Misamis Oriental
Date : October 17, 2023

NAME	AGE	GENDER			CONTACT NUMBER	EMAIL ADDRESS	SIGNATURE
		MALE	FEMALE	LGBT			
1. LIZA MARJORIE ROSE M. NOVAL	45		✓		09157646799	lizamontillo@gmail.com	[illegible]
2. Julius Anggamay	28	✓			09050383421	reignjabaek24@gmail.com	[illegible]
3. Jocelyn M. Salcedo	60		✓		09952010826	jomensalcedo63@gmail.com	[illegible]
4. Hanin Laguindab	26	✓			0945-254-0784	hlaguindab17@gmail.com	[illegible]
5. John Asuwaw	49	✓			09177919090	JOHNWASUWAN@GMAIL.	[illegible]
6. Oda S. Beltran	64		✓		09994209125	odasbeltran@gmail.com	[illegible]
7. Carmeli Chaves	54		✓		09177944273	c.chaves@galerioenvi.com	C. Chaves
8. Vanessa Pallaras	37		✓		09178237310	vanessapallaras@gmail	[illegible]
9. Jeo M. Valerio	50	✓			09999939776	valeriojeo@gmail.com	[illegible]
10. SIMONETTE F. SAGARAL	51		✓		09551531630	sfsagaral2@gmail.com	[illegible]
11. ISIDRO G. PROPERTY					09175406341		
12. Monica Llorin	24		✓		09177150072		[illegible]
13. MARSANESCE ARMILLA	22		✓		09950311219		[illegible]
14. Angelo M. CORDOVA	73				09717776018		[illegible]
15. TORRES, OLIVER GREGORY	26	✓			09067017008	torresolivergregory@gmail.com	[illegible]

WORLD BANK GROUP

Location: **Tourism Hall, Municipality of Impasug-ong, Province of Bukidnon**

Date and Time: **October 18, 2023 / 9:00 AM to 11:00 AM**

Attendees: (Please see consent form and attendance sheet)

Q1: What are your current experiences with using the [name of main corridor segment and/or link road] in your area? (how often, how long, for what purpose the road is used) What are the biggest challenges you face as a road user? (e.g., access, road conditions, road safety, conflict, transport cost, personal conditions)

Oda Beltran Beltran (GECI): In relation to what I've said about the road improvement project, would anyone like to share your insights?

Florentino Minggi (Senior Citizen): Inquiring if the hired workers from the proposed project will be coming from the local residents of the affected barangays?

Oda Beltran Beltran: Based on the guidelines from DPWH and LGUs, the preference is to hire locals; however, not all positions may be filled by local residents. This is because there might not be qualified individuals (skilled workers) within the community for certain roles, such as the project engineer etc.

Estrella Torres (Senior Representative): Raise her concern of the affected houses and buildings, and asked what this project will do?

Oda Beltran

- They'd be compensated and relocated if they wanted to. That depends on the decision between the owner and the office responsible.
- Are there any other barangays that might be included in the project?

Frederick S. Nacaytuna (IP Representative): Transporting of goods will be easy and convenient from the airport to the port. However, once the road is developed, I think one potential issue could be that some drivers might take advantage of the roads, driving carelessly and fast without considering the other travelers.

Jingle (LGU Impasug-ong):

- In my experience, traveling from Brgy. Kapitan Bayong to Cawayan is difficult due to rough roads,the difficulty of students going to school, and emergency cases that may arise due to heavy trains, leading to slippery roads.
- The trucks from big companies also contribute to road damage due to the goods that they transport.

Josefino Manalo (Brgy. Captain - Cawayan): The advantage of having 4 lanes is to reduce travel time, such as from Bukidnon to the airport

Florentino Minggi: big companies use this road. I suggest inviting them to share their perspectives since they significantly benefit from it.

Oda Beltran: Is there also a separate action or coordination for this concern, sir?

Marilou Nacaytuna (Women representative): There are no signs or railings, which could lead to accidents. There is also a need to widen the road.

Cristita Navarro (Business Sector): The road is particularly inconvenient for us since I run a small business as a fish vendor. Transporting raw products is always challenging due to the road conditions, sometimes resulting in minor accidents that can damage our goods.

Oda Beltran: How about the senior citizens? Do you have any comments or suggestions?

Nario Suldahan (IP Sector): I recommend reducing the curves as they can contribute to road accidents. Drivers have to slow down while navigating the curves, affecting traffic flow. Curves often became hotspots of accidents.

Oda Beltran: That concern will be raised with the road planner.

Estrella Torres:

- One of our dilemmas is travel delay, and I suggested road repairs to address this problem
- There is no proper sign for senior citizen crossing the street
- Having 4-6 lanes would enhance road capacity, easier transportation especially for business owners who need to reach the market early.

Carmeli Marie C. Chaves (GECI): Are there enough pedestrians?

All: yes, the problem is the drivers.

Estrella Torres: Speed limit should be implemented. No signage for seniors

Q2: What are your hopes and expectations for the project? What are the specific needs of your community that the road improvement project can address? How do you think the road improvement project will impact:

- your income, livelihood or occupation?
- access to education, healthcare, or other essential services?
- housing and land tenure?
- social interactions?
- community health and safety?
- conflict situation?

Oda Beltran: Any recommendation of the project and wideness of the road

Attendee: One of the attendee’s suggested of installation of overpass

Jingle: Allocation and compensation for affected structures or houses.

Frederick S. Nacaytuna:

- Most likely around 30 meters wide. Also, if there's road construction, I suggest reducing the curve formations.
- Curved road suggestions namely: Impasug ong, Sayawan, Malaging, Buntongon, Banduan.

Josefino Manalo: Recommend solar street lights on highways for the safety of the riders.

Teodocia Escobio (Senior Citizen):

- Classification of lanes for vehicles and a separate lane for motorcycles should be implemented
- There should be ordinance from the Municipality for reckless driver and seminars for motorist

Oda Beltran: Noted. How about housing and land tenure?

All: Raise their concern for relocation site of affected household

Carmeli Marie C. Chaves: Where are crops transported?

All: Davao, Gensan, and CDO

Carmeli Marie C. Chaves: How long does it take to get to the market?

All: Approximately 3 hours from Impasugong to Bulua.

Florentino Minggi: I recommend creating a shortcut from farm-to-market road

Carmeli Marie C. Chaves: Do you have the resettlement area?

Teodocia Escobio: The LGU housing is on-going

Carmeli Marie C. Chaves: DPWH will coordinate the LGU of impasug-ong

Q3 & Q4: Carmeli Marie C. Chaves: Suggestions for road improvements?

Josefino Manalo: Some residents have vacant lots at the back of their houses.If they are affected by road construction, they may consider moving their house to the vacant lot.

Carmeli Marie C. Chaves: What is the total percentage of poverty in Barangay Kawayan?

Josefino Manalo: The poverty rate in Barangay Kawayan is 1% only. although this figure may vary based on the criteria used to define poverty.

Carmeli Marie C. Chaves: how about the case for involuntary resettlement? Ideally the resettlement area should be here in impasug-ong area, right?

All: yes

Carmeli Marie C. Chaves: What are your suggestions?

Frederick S. Nacaytuna: Some IPs won't approve this idea. Though they will follow IPRA law. I recommend, the DPWH allows them to just move to the area not included in the road because they are willing to do so.

Oda Beltran: How about the IPs? Do you have suggestions on community health and safety here? What needs to be improved?

Carmeli Marie C. Chaves: We notice that there are numerous plantations here, don't you have concerns about the fertilizers or pesticides used?

Estrella Torres

- It brings us a threat over time that could lead to water pollution.
- There should be creeks where the polluted water could pass through to prevent the contamination of other water bodies.

Frederick S. Nacaytuna:

- The farmers also adopt organic farming; however, for small scale farmers, it's hard for them to survive economically. This situation might lead to a negative impact on their businesses, resulting in lower profit and income.
- I Suggest that the LGU restrict the expansion of agriculture plantations when the road is developed because uncontrolled expansion may lead to additional polluted communities.

Vanessa Pallarco (GECI): In addition to health and safety, is there any health center in your area? How is it?

All: There's a barangay center but no doctors.

Vanessa Pallarco: If the road is implemented, will it be helpful for the community?

Participant: Yes, there was a situation in our area where a pregnant woman went into labor, and due to road-related issues, she ended up giving birth in the middle of the road. It'd be an easy transport if this road could be implemented.

Oda Beltran

- How about the students' problem with the road? Is there any?

Maricar D. Belican (Youth Sector): The poorly maintained road inconveniences students. Due to its condition, we frequently arrive late to class, and our shoes and outfits often get covered in mud.

Estrella Torres: there should be a road regulation implemented.

Oda Beltran: conflict situation?

Frederick S. Nacaytuna: Roads are a significant issue here, and having sufficient road infrastructure would be beneficial for all of us.

Estrella Torres: How about the other barangays that are not mentioned or included in their project that needs immediate road attention? Is it possible that their area would also benefit from these road projects, or are there any projects such as farm to market roads that involve them?

Oda Beltran: We cannot give you an assurance for that, but we will take note of this and will recommend this to the right office.

Estrella Torres: What are we going to do for this?

Oda Beltran

- This concern will initially be brought to the attention of the LGUs before being forwarded to the DPWH, as it follows a step-by-step process.
- Is there an IP's here like Higaonon?
- Is there CADT here? how about cultural heritage?

Frederick S. Nacaytuna: not yet released certificate of ancestral domain.

Oda Beltran: proposed natural park. Where does the road end in Dumalaging?

Frederick S. Nacaytuna: bridge

Marilou Nacaytuna: which is prone to landslides.

Vanessa Pallarco: What is the grievance mechanism, if any? For instance, if there's an issue, where would you go to address it? Additionally, when there are projects like this, where do you typically receive information about them?

Jingle: We have meetings every Monday led by the LGU from the mayor's office, and they are the ones who keep us informed. They will update us.

Marilou Nacaytuna: Every Wednesday of the month, if there is a project, they will present it to the Municipal Planning and Development Office (MPDC). All representatives will be there to be informed by the new project if there's any.

Oda Beltran: How about in the barangays, do you have barangay assembly?

Josefino Manalo: Yes, because that is also required.

Oda Beltran: Are there any other conflicts from other parties?

Participant: There is a land conflict, and the tribal elders continue to assert their claim to the ancestral domain, despite losing the legal battle in court.

Jingle: Currently, out of 13 barangays, only 3 are lacking primary schools and ALS.

Oda Beltran: Are there any additional conflicts?

Estrella Torres: The compensation of the affected areas

Carmeli Marie C. Chaves

- There are laws addressing this; for instance, they cannot compel you to leave the area without providing compensation first.
- you have your rights to not sign the paper/contract if you did not receive the compensation yet.
- Vanessa Pallarco: Are there any political dynamics?

Q5: How would you and your community like to be involved in the planning, design and implementation of the road improvement project?

Oda Beltran: recommendation for bunkhouse?

Participant: It would be beneficial if laborers from outside the area maintain a logbook, allowing the barangay to effectively monitor their activities. Conducting a slight background check is essential, as we may not be aware of any pending issues. For instance, in Barangay Kibenton, an individual from the laborer was apprehended for drug use.

Oda Beltran: We should make this as a policy.

Carmeli Marie C. Chaves: Do laborers who are not from the area typically stay, or do they leave after completing their work?

Participant: Some choose to stay if they like the area and find reasons such as marriage etc.

Vanessa Pallarco: Are there issues of violence against women and children given that there are new laborers?

Estrella Torres: There is. There is a situation where someone from another barangay is employed in a specific barangay, and there have been cases where laborers got someone

from the area pregnant.

Marilou Nacaytuna: There are also reported cases of abuse involving a teenage couple, and there have been instances of early pregnancies among individuals aged 14 to 15 years old. Although, nowadays, women in Sitio Bulunan have become empowered, acquiring knowledge about their rights and protection.

Oda Beltran: To conclude this discussion, we would like to hear your message on the project.

Frederick S. Nacaytuna: Grateful for this project, as it finally provides an opportunity to address the issues in each barangay. Hopefully, the raised concerns will be forwarded to the respective offices for consideration.

Estrella Torres: If this road project is implemented, we will have easy access to hospitals, and there won't be hindrances for students going to school. As a member of the senior community, I am thankful to be part of this discussion.

Nario G. Suldahan: We are thankful to have cemented roads in our area.

IPMP Datu: I hope this will be implemented.

Lorsarinao: Thankful for the road project.

Maricar D. Belican, Christopher Florencia, Sony and cristel: Expressed gratitude for this project because it brings convenience and proves to be helpful for them.

Photo Documentation:

Oda Beltran discussed the proposed study of Mindanao Transport Connectivity Improvement Project (MTCIP)

Frederick S. Nacaytuna shared about how grateful it is of this Project

Josefino Manalo shared her suggestion of solar streetlights on highways for the safety of the riders.

Florentino Minggi suggests the establishment of shortcut connecting the farm-to-market road

Estrella Torres recommended implementing appropriate signage for senior citizen crossing on the street.

CONSENT FORM

(October 18, 2023)

STUDY PROJECT:

Conduct of FGD and KII

Due Diligence and Options Analysis: Mindanao Transport Connectivity Improvement Project

FACILITATOR/S: Galerio Environmental Consultancy Incorporated (GECI) Social Team

DOCUMENTERS: Galerio Environmental Consultancy Incorporated (GECI) Social Team

1. I agree to participate in the FGD and KII for Municipality/City of Impasug-ong organized and facilitated by GECI, to contribute with the study project.
2. GECI Social Team had explained the study project and I understand the objectives of FGD and KII.
3. I am aware that the FGD and KII will respond to the Guide Questions prepared for the study project.
4. I acknowledge that I will remain unnamed; answer any of the guide questions at my own free will; and have the rights to decline to answer the questionnaire at any point.
5. I agree for the documentation and audio recording of the proceedings for analysis and entry planning purposes. I also agree that the data and information will be stored securely and safely and will be used solely for the Due Diligence and Options Analysis for Mindanao Transport Connectivity Improvement Project.

Signed on this day 18 of October, 2023 in Tourism Hall.

NAME	BARANGAY	ORGANIZATION / INSTITUTION	SIGNATURE
1. Anna T. Comingue	Impasugong	Business Sector	
2. Goldie Mae Casiño	Impasugong	Business Sector	
3. Vonna Bhic Paday	Impasugong	Business Sector	
4. Marijoe C. antivo	Impasugong	Business Sector	
5. CRISTOPHER V. FLORENCIO	Impasugong	Business Sector	
6. Maricel D. Dagno	POBLACION. IMP.	BUSINESS SECTOR	
7. Maricar D. Belican	Poblacion, Imp.	Youth	
8. Anna Liza B. Saphan	Poblacion Imp.	Youth	
9. Nacaytuna, Marilen P.	Impasugong	Women	
10. Saldahan, Nario G.	Poblacion	IP Sector	

CONSENT FORM

(October 18, 2023)

STUDY PROJECT:

Conduct of FGD and KII

Due Diligence and Options Analysis: Mindanao Transport Connectivity Improvement Project

FACILITATOR/S: Galerio Environmental Consultancy Incorporated (GECI) Social Team

DOCUMENTERS: Galerio Environmental Consultancy Incorporated (GECI) Social Team

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Signed on this day 18 of October, 2023 in Tourism Hall.

NAME	BARANGAY	ORGANIZATION / INSTITUTION	SIGNATURE
11. Suminao, Silvano C.	IP Poblacion	IP Sector	[signature]
12. Corazon Saniciao			[signature]
13. Lot Saniciao			L.S
14. Florida M. Romero	SC-Treas.		[signature]
15. Estrella Torres	Poblacion	SC	[signature]
16. Hermocidia Palmas	Poblacion		[signature]
17. Teodocia Escobio	Poblacion		[signature]
18. Florentino G. Manggat	PIS. IMP. Buk	SC / OSCA / IPMR	[signature]
19. Leonita F. Putis	P.T. Pob. Imp. Buk	SC	[signature]
20. Florentino G. Manggat	Pob. Imp. Buk	SC	[signature]

CONSENT FORM

(October 18, 2023)

STUDY PROJECT:

Conduct of FGD and KII

Due Diligence and Options Analysis: Mindanao Transport Connectivity Improvement Project

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Signed on this day 18 of October, 2023 in Tourism Hall.

	NAME	BARANGAY	ORGANIZATION / INSTITUTION	SIGNATURE
21.	JUMILAP, JOSIELYN	CAWATAN	Women	
22.	Pachuco. Sandy	Cawayan	LGU	
23.	Cristita Navarro	Cawayan	Women	
24.	Frederick Macaytanci	Impalutao	MAMAW	
25.	JOSEFINO D. MANALO	CAWAYAN	BLGU	
26.	Nerissa Joyce D. Chin	Poblacion	Bialagon Women	
27.				
28.				
29.				
30.				

ATTENDANCE SHEET

Project : MTCIP - DDOA
Activity : Focus Group Discussion
City/Mun. : Impasug-ong
Date : October 12, 2023

	NAME	ADDRESS	SECTORAL REPRESENTATIVE						SIGNATURE
			Women	Youth	Senior Citizen	Indigenous People	Business Sector	Peace & Security	
1.	Alma T. Comingcing	P-9 Impasugong	✓				✓		
2.	Goldie Mae Casiño	P-2 Impasugong	X				—		
3.	Vonna Bric Paday	P-3 Impasugong	X				—		
4.	Maripe C. Antivo	P-5 Impasugong					—		
5.	CRISTOPHER V. FLORENCIO	P7 POB. IMPASUGONG					—		
6	Maricel D. Dagno	P-7 POB. IMPASUGONG	✓				—		
7.	Maricar D. Belican	P3, Poblacion, Imp.		—					
8.	Anna Liza B. Sophian	P3, Poblacion Imp		—					
9.	Nacaytuna, Mailon P.	Impalutao, Imp.	—			.			
10.	Sabban, Nario G.	Poblacion				—			
11.	Sumirao, Silvano C.	Poblacion				—			
12.	Corazon A Sapiraan								
13.	Lot A Sapiraan	Poblacion							
14.	Teododa E. Escobio	Poblacion			✓				
15.	Florencio G. Manlili	Pob. 7th. Poll.	✓		—	—			

WORLD BANK GROUP

ATTENDANCE SHEET

Project : MTCIP - DDOA
Activity : Focus Group Discussion
City/Mun. :
Date :

	NAME	ADDRESS	SECTORAL REPRESENTATIVE						SIGNATURE
			Women	Youth	Senior Citizen	Indigenous People	Business Sector	Peace & Security	
1.	Hermocilla M. Salinas	Poblacion P.8	✓		✓				
2.	Gloria F. Putic	Pob. Imp.	—		✓				
3.	Eufrella Tagnes	Pob. Imp.	—		—				
4.	Florida M. Romero	P-8 Poblacion	—						
5.	Navarro C. Cristita	P-4 Carayan	—		—		/		
6	TUMILAP, JOSIETN	CAWATAN	—						
7.	Pacheco Sandy	Carayan	—		—				
8.	Frederick S. Nacaytuna	Impalutao				/			
9.	JOSEFINO B. MANALO	CAWAYAN			✓				
10.	Jeniccia Soyu B. Cain	Poblacion	—						
11.									
12.									
13.									
14.									
15.									

WORLD BANK GROUP

REGISTRATION FORM

Project : MTCIP - DDOA
Activity : ~~Key Informant Interview~~ Focus Group Discussion
City/Mun. : Impasug-ong
Date : October 15, 2023

	NAME	AGE	GENDER			CONTACT NUMBER	EMAIL ADDRESS	SIGNATURE
			MALE	FEMALE	LGBT			
1.	Jenna T. Comungut	57		✓		09679829750		
2.	Goldie Mae Casino	37		✓		09614433827		
3.	Vonna Blue Paday	38		✓		09977240271	vonnablue20@gmail.com	
4.	Marije C. Antivo	44		✓		09066184968		
5.	CHRISTOPHER V. FLORENCIO	44	✓			09550180723		
6	Maricel D. Dagno	41		✓		09498471457		
7.	Maricar P. Bulican	23		✓		09512517661	maricarbulican@gmail.com	
8.	Anna Liza B. Saplian	23		✓		09304499790		
9.	Nacantena, Manilon P.	53		✓		0965-942-0145	.	
10.	Calubaran, Nario G.	53	✓			09552987921		
11.	Saminao, Silvano C.	62	✓					
12.	Corazon A Sanituao	60	✓	✓				
13.	Lor A Sanituao	64	✓	✓				
14.	Florida M. Romero							
15.	Estrella G. Torres	71		✓		09659496945		

REGISTRATION FORM

Project : MTCIP - DDOA
Activity : ~~Key Informant Interview~~ Focus Group Discussion
City/Mun. :
Date :

	NAME	AGE	GENDER			CONTACT NUMBER	EMAIL ADDRESS	SIGNATURE
			MALE	FEMALE	LGBT			
1.	Hermocilia M. Galinao							
2.	Teodocia T. Escobio					09353925585		
3.	[illegible]	70	✓			09268150654		
4.	Leonila F. Putic	73	✓	✓		09679887347		
5.	Navarro Cristita	61		✓		0		
6	TUMILAP, JOSIELYN	49		✓		09510860337		
7.	Pacturo Sonny	68		✓		09659980884		
8.	Fredrick S. Nacaytana	57	✓			09974077898		
9.	JOSEFINO B. MAWALO	69	✓			09051711398		
10.	Jenissa Joyce P. Chin	47		✓		0935-748-4863		
11.								
12.								
13.								
14.								
15.								

Location: **Third Floor, Function Hall, Panabo City, Davao del Norte**

Date and Time: **October 20, 2023 / 1:00 PM to 5:00 PM**

Attendees: (Please see Consent Form and Attendance Sheet)

Q1: What are your current experiences with using the [name of main corridor segment and/or link road] in your area? (how often, how long, for what purpose the road is used)

Frensele Marie E. Layan (CMO Housing)

- The road was used by the eleven barangays like students, employees, etc.,
- At the same time, it is used from farm-to-market roads.
- The existing two lanes are already concreted, but the damage to the road is evident, having been used for a considerable amount of time.
- Part of Brgy. Consolation is wide

Jessie V. Lorin (CPDO)

- The 11 barangays are part of the city's Comprehensive Land Use Plan (CLUP) proposal for a 20-meter-wide road extending from the city proper to Brgy. Consolation, and it has already been concreted.
- Brgy. Consolation is a boundary between Brgy. Malabog and Fatima.
- Brgy. Malabog to Fatima is already 4 lanes which is part of Davao City, while in Panabo City, the road from brgy. Consolation to the city proper is also 4 lanes.

Carmeli Marie C. Chaves (GECI): Who is the landowner of the 20 meters?

Jessie V. Lorin: Based on the CLUP, a 20-meter-wide section of the road is part of the provincial road network.

Carmeli Marie C. Chaves: Is there a need for land acquisition?

Jessie V. Lorin

- For the acquisition of land for the construction of 4 lanes, it depends on the boundaries. If landowners are going to be affected, I advise conducting a parcellary survey to identify the landowners.
- Most of the teachers who live in the city proper are often assigned to rural barangays like Consolation.
- Mode of transportation are motorcycle and ongbak (bao-bao)

Carmeli Marie C. Chaves: Inquiring about areas prone to floods and the geological fault line in the 11 barangays.

Jessie V. Lorin: mentioned that there is no flooding

- In Brgy. Katipunan, there is an existing steep slope on both sides, and it has been suggested to implement slope protection measures in the areas.

Oda Beltran (GECI): Is there an agreement between the City of Davao and Panabo for the linking of road?

Jessie V. Lorin

- I don’t know about that, but Davao City has a proposal for a road tunnel.
- In Malabog, the road going to Lacson is affected by landslides in certain parts.

Oda Beltran: Inquiring about where the road ends?

Jessie V. Lorin: It starts with Brgy. Gredu, Little Panay, Catipunan, Cacao, Kauswagan, Consolation which is the boundary of Brgy. Malabog, Davao City.

Oda Beltran: Inquiring about the 11-barangay identified?

All: Mabuhay is not included in Panabo City

Jessie V. Lorin: Mabuhay is part of Davao City, but it can traverse to brgy. Consolation.

All: Only 10 barangays belong to Panabo City namely: Datu Abdul Dadia, Katipunan, Cacao, Kauswagan, Consolacion, Malativas, Little Panay, New Visayas, Gredu, and New Pandan
Oda Beltran: Inquiring about the estimated population of 10 barangays?

Jessie V. Lorin: I suggested to visit CPDO office because we have the data on that

Oda Beltran: Conveyed that we are still in information gathering.

What are the biggest challenges you face as a road user? (e.g., access, road conditions, road safety, conflict, transport cost, personal conditions)

Frensele Marie E. Layan

- The road from Davao linking to Panabo is an easily accessible
- an alternate route from Davao to reduce traffic congestion

Jessie V. Lorin: If the project is approved, the road from Panabo can traverse from Calinan to Cagayan

Carmeli Marie C. Chaves: Do you favor linking the road?

All: Yes, to lessen the traffic.

Carmeli Marie C. Chaves

- inquiring about the current use of a road by farmers and anticipate the potential impact if the road were to be improved?
- She also asks farmers' information about origin destination, local market location, the types of vehicles used, and the cultural commodities available?

All

- They responded that the farmers are using this road to reach the market
- They use jeep or boom truck
- Their products include bananas such as Cardaba and Binangay, along with vegetables and spices.

Oda Beltran: inquiring about what else is lacking in the roads?

Jessie V. Lorin: Responded the absence of streetlight, leading to numerous accidents

Q2: What are your hopes and expectations for the project? In addition to what you've mentioned.

Vanessa Pallarco (GECI) - inquiring about the following:

- Peace and Order
- Grievance Mechanism
- Complains about Roads
- Sexual Harassment
- Gender and Development Program
- PWD and Senior Citizen Measures for crossing the road, like pedestrian lane
- Designated Bike Lane

Jessie V. Lorin - peace and order

- There are existing police in every barangay, including the army and police.

All

- Regarding grievance within the families, report to the barangay
- For construction complaints, go to the City Engineer's Office
- Sexual harassment issues are handled at the barangay level
- There is an existing GAD (Gender and Development) in the city

Emely G. Anito (CEO): Road measures are only implemented in urban areas, but bike lanes are not included

Oda Beltran: Plan for city improvement?

Jessie V. Lorin: Widen and cement the road

Carmeli Marie C. Chaves

- asking about the location of nearest hospital, and
- inquiring about the access to remote barangay

Jessie V. Lorin

- We have a Rural Health Unit (RHU) and the ongoing construction of a proposed building located in Little Panay.
- There's an emergency hospital in Barangay Consolation, which takes 30 minutes travel time.
- Each barangay has Barangay Health Workers (BHW) and designated midwives.

All: Every barangay has emergency rescue services.

Carmeli Marie C. Chaves: Asking Ms. Frensele about her expectations for the affected barangays and inquiring about the LGU's programs in response to the situation.

Frensele Marie E. Layan

- The focus of the housing itself is on those ISF. We assure their relocation, and the property owners will be compensated.
- There is a resettlement site in Barangay Katipunan covering a total of 5 hectares.

Carmeli Marie C. Chaves: Is there ISF along the alignment?

Frensele Marie E. Layan

- No ISF will be affected, only private owners.
- The ISF reside in the coastal area and near the creek
- We also have Resettlement Action Plan (RAP) program

How do you think the road improvement project will impact your income, livelihood or occupation?

All

- Never late in work due to improved transportation
- Potential for business investors will bloom
- An increase in land value
- changes in land use
- possibility of attracting additional migrants to the area

Oda Beltran: Inquiring about the presence of Indigenous Peoples (IPs) in the 10 barangays and whether they have ownership of Ancestral Domain?

All: They responded that there are IPs in every barangay. However, they mentioned that there is no identified Ancestral Domain in the 10 barangays.

Frensele Marie E. Layan: One of the City Housing programs includes providing parcel of land to Indigenous Peoples (IPs) community

Vanessa Pallarco: Inquiring about Muslim community?

Frensele Marie E. Layan

- Mentioned that, as per the request of Muslim community, they have been relocated. Additionally, there are some Muslims who reside in Christian community as well.
- Most migrants come from Marawi.

How do you think the road improvement project will impact:

- **Access to education or other essential services?**
- **Housing and land tenure**
- **social interactions?**
- **Rebel returnee community**
- **Community Safety**

Frensele Marie E. Layan

- Construction and expansion of new schools could be enhances

- Regarding housing, it will be more accessible to landowners, especially once the road is developed.
- Land value will increase

All

- They mentioned that in 10 barangays there are different associations. They also noted the presence of rebel returnees in these 10 barangays.
- There is an existing farmers association; they celebrated their festival last month.

What are your concerns about the project? Do you think the project poses any risk to you or your community? Can you elaborate more about these possible risks and impacts?

GECI: Inquiring about a bunk house for construction workers, and asking for labor guidelines?

All: The contractor will inform the barangays and the City. The City may also request labor guidelines from the contractor to ensure compliance.

Vanessa Pallarco: Asking about Cultural and Gender Sensitivity orientation or seminar for construction worker?

Emely Anito (CEO): Just inform the Engineering Department or the City Mayor.

Carmeli Marie C. Chaves: Inquiring about the location of Port in Panabo City and what types of crops they export?

All

- The port is located in Brgy. San Pedro and is equipped with gantry cranes. It is known as the Davao City International Terminal (DICT), where they export crops such as bananas and pineapple.
- The fish port is located in Brgy. Kaganuhan near the coastal road.
- One of the biggest plantations here in Panabo is the TADECO (Tagum Agricultural Development Company), and most of their employees are inmates.

What are your suggestions or recommendations on how the road improvement project can be implemented to address these concerns, manage risks, or mitigate possible adverse effects?

- Additional street lights
- Slope Protection
- Improvement of drainage system for flood prone area

How would you and your community like to be involved in the planning, design and implementation of the road improvement project?

- Barangay consultation for every barangay
- Alternative road that passed through to barangay Mandug to Callawa, Davao City.

Sir Jessie describes an alternate route from the national highway of Panabo City, starting from Barangay Gredu, New Visayas, Datu Abdul from Little Panay, then turning left to reach various barangays including Maduao, Tagpore, Buenavista, Mabunao, San Roque, Panabo City, and finally reaching Barangay Callawa in Davao City.

Photo Documentation

Vanessa Pallarco discussed the proposed study of Mindanao Transport Connectivity Improvement Project (MTCIP)

Jessie V. Lorin describes an alternate route from Panabo City to Davao City

Frensele Marie E. Layan emphasized that the City's housing initiative is focused on the ISF and ensure their location to suitable sites

Emely Anito stated that the road improvements are limited to urban regions

CONSENT FORM

(October 20, 2023)

STUDY PROJECT:

Conduct of FGD and KII

Due Diligence and Options Analysis: Mindanao Transport Connectivity Improvement Project

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DOCUMENTERS: Galerio Environmental Consultancy Incorporated (GECI) Social Team

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Signed on this day 20 of October, 2023 in Function Hall of Panabo City.

NAME	BARANGAY	ORGANIZATION / INSTITUTION	SIGNATURE
41. JESSIE V. LORIN			
42. EMERY G. ANITO			
43. FRIENSHIE MARIE E. LAYAN			
44. Cyreen C. Rubilla			
45.			
46.			
47.			
48.			
49.			
50.			

ATTENDANCE SHEET

Project : MTCIP - DDOA
Activity : Focus Group Discussion
City/Mun. : Panabo City / Davao del Norte
Date : October 20, 2023

NAME	ADDRESS	SECTORAL REPRESENTATIVE						SIGNATURE
		Women	Youth	Senior Citizen	Indigenous People	Business Sector	Peace & Security	
1. JESSIE V. LORIN	LGU- PANABO - CPDO							
2. EMELY G. ANITO	LGU – PANABO -CEO							
3. FRANCISCLE MARIE E. LAYAN	LGU - PANABO - LAO Intern							
4. Cyreen C. Rubilla	LGU - Panabo - CGDO							
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Partnerships for INFRASTRUCTURE · WORLD BANK GROUP · GALERIO ENVIRONMENTAL CONSULTANCY INC.

REGISTRATION FORM

Project : MTCIP - DDOA
Activity : Focus Group Discussion
City/Mun. : Panabo City / Davao del Norte
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Annex 23. Environmental and Social Management Measures Implementation Costs Per Package

Main Corridor Package 1

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
PRE-CONSTRUCTION PHASE					
Acquisition and Applicable Permits processing	People	Development Cost	194.57	10.00%	2.33
Land Acquisition RROW	People (Disturbance/Displacement of Settlers)		194.57	25.00%	5.83
	People (households' involuntary resettlements)		194.57	25.00%	5.83
Hiring of Workers (Local)	People (barangay host		194.57	15.00%	194.57
Site Preparation	Land		194.57	5.00%	1.17
Vegetation Clearing	Water		194.57	10.00%	2.33
Utilities Relocation	People		194.57	15.00%	3.50
CONSTRUCTION PHASE					
Construction of Temp Facilities for Workers	Land, Water, People (Solid Waste Management Plan)	Civil Works Cost	164.43	20.00%	3.94
	Land, Water, People (Adequate Sanitation Facilities)		164.43	15.00%	2.95
	People (Safety, Risks, Peace and Order) Coordinators		411.09	10.00%	4.92
Civil Works for the Main Corridor and Link Roads	Land (ground vibration control)		164.43	5.00%	0.98
	Land, Water, People (Proper disposal of debris/spoils and other solid wastes)		164.43	5.00%	0.98
	Land, Water, People (Proper onsite handling, transport and disposal of hazardous materials)		164.43	10.00%	1.97
	Water (implementing measures for water spillage)		164.43	20.00%	3.94
	Land, Water (oil spill management implementation)		164.43	15.00%	2.95
	Air, People (dust control measures)		164.43	5.00%	0.98
	Air, People (Air emission and noise control measures)		164.43	5.00%	0.98
	People (Occupational Safety and Health		411.09	50.00%	24.62
	People (safety risks: Barriers, early warning devices)		411.09	10.00%	4.92
	People (coordinator for basic resources/providers, residents for any threats and concerns)		411.09	10.00%	4.92
	People (traffic control measures implementation)		411.09	20.00%	9.85
DEMOBILIZATION AND OPERATIONAL PHASE					
Dismantling of Temporary	Land, Water (solid waste management plan)		67.28	40.00%	3.22

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
Facilities for Workers	Air, People (Air emission and noise control measures)		336.40	20.00%	8.06
	People (Occupational Safety and Health		88.53	30.00%	3.18
Road Operations	Water (storm water management implementation)		336.40	40.00%	16.12
	People (enhancement employment livelihood)		88.53	20.00%	2.12
	People (Road traffic noise control)		88.53	10.00%	1.06
	People (Occupational Safety and Health		88.53	30.00%	3.18
	People (traffic control measures implementation)		88.53	10.00%	1.06

Main Corridor Package 2

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
PRE-CONSTRUCTION PHASE					
Acquisition and Applicable Permits processing	People	Development Cos	194.57	10.00 %	2.22
Land Acquisition RROW	People (Disturbance/Displacement of Settlers)		194.57	25.00 %	5.56
	People (households involuntary resettlements)		194.57	25.00 %	5.56
Hiring of Workers (Local)	People (barangay host		194.57	15.00 %	3.34
Site Preparation	Land		194.57	5.00%	1.11
Vegetation Clearing	Water		194.57	10.00 %	2.22
Utilities Relocation	People		194.57	15.00 %	3.34
CONSTRUCTION PHASE					
Construction of Temp Facilities for Workers	Land, Water, People (Solid Waste Management Plan)	Civil Works Cost	164.43	20.00 %	3.76
	Land, Water, People (Adequate Sanitation Facilities)		164.43	15.00 %	2.82
	People (Safety, Risks, Peace and Order) Coordinators		411.09	10.00 %	4.70
Civil Works for the Main Corridor and Link Roads	Land (ground vibration control)		164.43	5.00%	0.94
	Land, Water, People (Proper disposal of debris/spoils and other solid wastes)		164.43	5.00%	0.94
	Land, Water, People (Proper onsite handling, transport and disposal of hazardous materials)		164.43	10.00 %	1.88
	Water (implementing measures for water spillage)		164.43	20.00 %	3.76

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
	Land, Water (oil spill management implementation)		164.43	15.00 %	2.82
	Air, People (dust control measures)		164.43	5.00%	0.94
	Air, People (Air emission and noise control measures)		164.43	5.00%	0.94
	People (Occupational Safety and Health		411.09	50.00 %	23.51
	People (safety risks: Barriers, early warning devices)		411.09	10.00 %	4.70
	People (coordinator for basic resources/providers, residents for any threats and concerns)		411.09	10.00 %	4.70
	People (traffic control measures implementation)		411.09	20.00 %	9.40
DEMOBILIZATION AND OPERATIONAL PHASE					
Dismantling of Temporary Facilities for Workers	Land, Water (solid waste management plan)		67.28	40.00 %	3.08
	Air, People (Air emission and noise control measures)		336.40	20.00 %	7.69
	People (Occupational Safety and Health		88.53	30.00 %	3.04
Road Operations	Water (storm water management implementation)		336.40	40.00 %	15.39
	People (enhancement employment livelihood)		88.53	20.00 %	2.02
	People (Road traffic noise control)		88.53	10.00 %	1.01
	People (Occupational Safety and Health		88.53	30.00 %	3.04
	People (traffic control measures implementation)		88.53	10.00 %	1.01

Main Corridor Package 3

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
PRE-CONSTRUCTION PHASE					
Acquisition and Applicable Permits processing	People	Development Cost	194.57	10.00%	1.80
Land Acquisition RROW	People (Disturbance/Displacement of Settlers)		194.57	25.00%	4.49
	People (households involuntary resettlements)		194.57	25.00%	4.49
Hiring of Workers (Local)	People (barangay host		194.57	15.00%	2.70
Site Preparation	Land		194.57	5.00%	0.90
Vegetation Clearing	Water		194.57	10.00%	1.80

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
Utilities Relocation	People		194.57	15.00%	2.70
CONSTRUCTION PHASE					
Construction of Temp Facilities for Workers	Land, Water, People (Solid Waste Management Plan)	Civil Works Cost	164.43	20.00%	3.04
	Land, Water, People (Adequate Sanitation Facilities)		164.43	15.00%	2.28
	People (Safety, Risks, Peace and Order) Coordinators		411.09	10.00%	3.80
Civil Works for the Main Corridor and Link Roads	Land (ground vibration control)		164.43	5.00%	0.76
	Land, Water, People (Proper disposal of debris/spoils and other solid wastes)		164.43	5.00%	0.76
	Land, Water, People (Proper onsite handling, transport and disposal of hazardous materials)		164.43	10.00%	1.52
	Water (implementing measures for water spillage)		164.43	20.00%	3.04
	Land, Water (oil spill management implementation)		164.43	15.00%	2.28
	Air, People (dust control measures)		164.43	5.00%	0.76
	Air, People (Air emission and noise control measures)		164.43	5.00%	0.76
	People (Occupational Safety and Health		411.09	50.00%	18.99
	People (safety risks: Barriers, early warning devices)		411.09	10.00%	3.80
	People (coordinator for basic resources/providers, residents for any threats and concerns)		411.09	10.00%	3.80
	People (traffic control measures implementation)		411.09	20.00%	7.60
DEMOBILIZATION AND OPERATIONAL PHASE					
Dismantling of Temporary Facilities for Workers	Land, Water (solid waste management plan)		67.28	40.00%	2.49
	Air, People (Air emission and noise control measures)		336.40	20.00%	6.22
	People (Occupational Safety and Health		88.53	30.00%	2.45
Road Operations	Water (storm water management implementation)		336.40	40.00%	12.43
	People (enhancement employment livelihood)		88.53	20.00%	1.64
	People (Road traffic noise control)		88.53	10.00%	0.82
	People (Occupational Safety and Health		88.53	30.00%	2.45
	People (traffic control measures implementation)		88.53	10.00%	0.82

Main Corridor Package 4

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
PRE-CONSTRUCTION PHASE					
Acquisition and Applicable Permits processing	People	Development Cost	194.57	10.00%	2.69
Land Acquisition RROW	People (Disturbance/Displacement of Settlers)		194.57	25.00%	6.73
	People (households involuntary resettlements)		194.57	25.00%	6.73
Hiring of Workers (Local)	People (barangay host		194.57	15.00%	4.04
Site Preparation	Land		194.57	5.00%	1.35
Vegetation Clearing	Water		194.57	10.00%	2.69
Utilities Relocation	People		194.57	15.00%	4.04
CONSTRUCTION PHASE					
Construction of Temp Facilities for Workers	Land, Water, People (Solid Waste Management Plan)	Civil Works Cost	164.43	20.00%	4.55
	Land, Water, People (Adequate Sanitation Facilities)		164.43	15.00%	3.41
	People (Safety, Risks, Peace and Order) Coordinators		411.09	10.00%	5.68
Civil Works for the Main Corridor and Link Roads	Land (ground vibration control)		164.43	5.00%	1.14
	Land, Water, People (Proper disposal of debris/spoils and other solid wastes)		164.43	5.00%	1.14
	Land, Water, People (Proper onsite handling, transport and disposal of hazardous materials)		164.43	10.00%	2.27
	Water (implementing measures for water spillage)		164.43	20.00%	4.55
	Land, Water (oil spill management implementation)		164.43	15.00%	3.41
	Air, People (dust control measures)		164.43	5.00%	1.14
	Air, People (Air emission and noise control measures)		164.43	5.00%	1.14
	People (Occupational Safety and Health		411.09	50.00%	28.42
	People (safety risks: Barriers, early warning devices)		411.09	10.00%	5.68
	People (coordinator for basic resources/providers, residents for any threats and concerns)		411.09	10.00%	5.68
	People (traffic control measures implementation)		411.09	20.00%	11.37
DEMOBILIZATION AND OPERATIONAL PHASE					
Dismantling of Temporary Facilities for Workers	Land, Water (solid waste management plan)		67.28	40.00%	3.72
	Air, People (Air emission and noise control measures)		336.40	20.00%	9.30
	People (Occupational Safety		88.53	30.00%	3.67

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
	and Health				
Road Operations	Water (storm water management implementation)		336.40	40.00%	18.60
	People (enhancement employment livelihood)		88.53	20.00%	2.45
	People (Road traffic noise control)		88.53	10.00%	1.22
	People (Occupational Safety and Health		88.53	30.00%	3.67
	People (traffic control measures implementation)		88.53	10.00%	1.22

Main Corridor Package 5

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
PRE-CONSTRUCTION PHASE					
Acquisition and Applicable Permits processing	People	Development Cost	194.57	10.00%	2.31
Land Acquisition RROW	People (Disturbance/Displacement of Settlers)		194.57	25.00%	5.78
	People (households involuntary resettlements)		194.57	25.00%	5.78
Hiring of Workers (Local)	People (barangay host		194.57	15.00%	3.47
Site Preparation	Land		194.57	5.00%	1.16
Vegetation Clearing	Water		194.57	10.00%	2.31
Utilities Relocation	People		194.57	15.00%	3.47
CONSTRUCTION PHASE					
Construction of Temp Facilities for Workers	Land, Water, People (Solid Waste Management Plan)	Civil Works Cost	164.43	20.00%	3.91
	Land, Water, People (Adequate Sanitation Facilities)		164.43	15.00%	2.93
	People (Safety, Risks, Peace and Order) Coordinators		411.09	10.00%	4.89
Civil Works for the Main Corridor and Link Roads	Land (ground vibration control)		164.43	5.00%	0.98
	Land, Water, People (Proper disposal of debris/spoils and other solid wastes)		164.43	5.00%	0.98
	Land, Water, People (Proper onsite handling, transport and disposal of hazardous materials)		164.43	10.00%	1.95
	Water (implementing measures for water spillage)		164.43	20.00%	3.91
	Land, Water (oil spill management implementation)		164.43	15.00%	2.93
	Air, People (dust control		164.43	5.00%	0.98

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
	measures)				
	Air, People (Air emission and noise control measures)		164.43	5.00%	0.98
	People (Occupational Safety and Health		411.09	50.00%	24.44
	People (safety risks: Barriers, early warning devices)		411.09	10.00%	4.89
	People (coordinator for basic resources/providers, residents for any threats and concerns)		411.09	10.00%	4.89
	People (traffic control measures implementation)		411.09	20.00%	9.77
DEMOBILIZATION AND OPERATIONAL PHASE					
Dismantling of Temporary Facilities for Workers	Land, Water (solid waste management plan)		67.28	40.00%	3.20
	Air, People (Air emission and noise control measures)		336.40	20.00%	8.00
	People (Occupational Safety and Health		88.53	30.00%	3.16
Road Operations	Water (storm water management implementation)		336.40	40.00%	16.00
	People (enhancement employment livelihood)		88.53	20.00%	2.10
	People (Road traffic noise control)		88.53	10.00%	1.05
	People (Occupational Safety and Health		88.53	30.00%	3.16
	People (traffic control measures implementation)		88.53	10.00%	1.05

Main Corridor Package 6

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
PRE-CONSTRUCTION PHASE					
Acquisition and Applicable Permits processing	People	Development Cost	194.57	10.00%	2.48
Land Acquisition RROW	People (Disturbance/Displacement of Settlers)		194.57	25.00%	6.19
	People (households involuntary resettlements)		194.57	25.00%	6.19
Hiring of Workers (Local)	People (barangay host		194.57	15.00%	3.72
Site Preparation	Land		194.57	5.00%	1.24
Vegetation Clearing	Water		194.57	10.00%	2.48
Utilities Relocation	People		194.57	15.00%	3.72
CONSTRUCTION PHASE					

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
Construction of Temp Facilities for Workers	Land, Water, People (Solid Waste Management Plan)	Civil Works Cost	164.43	20.00%	4.19
	Land, Water, People (Adequate Sanitation Facilities)		164.43	15.00%	3.14
	People (Safety, Risks, Peace and Order) Coordinators		411.09	10.00%	5.23
Civil Works for the Main Corridor and Link Roads	Land (ground vibration control)		164.43	5.00%	1.05
	Land, Water, People (Proper disposal of debris/spoils and other solid wastes)		164.43	5.00%	1.05
	Land, Water, People (Proper onsite handling, transport and disposal of hazardous materials)		164.43	10.00%	2.09
	Water (implementing measures for water spillage)		164.43	20.00%	4.19
	Land, Water (oil spill management implementation)		164.43	15.00%	3.14
	Air, People (dust control measures)		164.43	5.00%	1.05
	Air, People (Air emission and noise control measures)		164.43	5.00%	1.05
	People (Occupational Safety and Health		411.09	50.00%	26.17
	People (safety risks: Barriers, early warning devices)		411.09	10.00%	5.23
	People (coordinator for basic resources/providers, residents for any threats and concerns)		411.09	10.00%	5.23
	People (traffic control measures implementation)		411.09	20.00%	10.47
DEMOBILIZATION AND OPERATIONAL PHASE					
Dismantling of Temporary Facilities for Workers	Land, Water (solid waste management plan)		67.28	40.00%	3.43
	Air, People (Air emission and noise control measures)		336.40	20.00%	8.57
	People (Occupational Safety and Health		88.53	30.00%	3.38
Road Operations	Water (storm water management implementation)		336.40	40.00%	17.13
	People (enhancement employment livelihood)		88.53	20.00%	2.25
	People (Road traffic noise control)		88.53	10.00%	1.13
	People (Occupational Safety and Health		88.53	30.00%	3.38
	People (traffic control measures implementation)		88.53	10.00%	1.13

Main Corridor Package 7

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
PRE-CONSTRUCTION PHASE					
Acquisition and	People	Development	194.57	10.00%	2.69

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
Applicable Permits processing		Cost			
Land Acquisition RROW	People (Disturbance/Displacement of Settlers)		194.57	25.00%	6.73
	People (households involuntary resettlements)		194.57	25.00%	6.73
Hiring of Workers (Local)	People (barangay host		194.57	15.00%	4.04
Site Preparation	Land		194.57	5.00%	1.35
Vegetation Clearing	Water		194.57	10.00%	2.69
Utilities Relocation	People		194.57	15.00%	4.04
CONSTRUCTION PHASE					
Construction of Temp Facilities for Workers	Land, Water, People (Solid Waste Management Plan)	Civil Works Cost	164.43	20.00%	4.55
	Land, Water, People (Adequate Sanitation Facilities)		164.43	15.00%	3.41
	People (Safety, Risks, Peace and Order) Coordinators		411.09	10.00%	5.69
Civil Works for the Main Corridor and Link Roads	Land (ground vibration control)		164.43	5.00%	1.14
	Land, Water, People (Proper disposal of debris/spoils and other solid wastes)		164.43	5.00%	1.14
	Land, Water, People (Proper onsite handling, transport and disposal of hazardous materials)		164.43	10.00%	2.28
	Water (implementing measures for water spillage)		164.43	20.00%	4.55
	Land, Water (oil spill management implementation)		164.43	15.00%	3.41
	Air, People (dust control measures)		164.43	5.00%	1.14
	Air, People (Air emission and noise control measures)		164.43	5.00%	1.14
	People (Occupational Safety and Health		411.09	50.00%	28.46
	People (safety risks: Barriers, early warning devices)		411.09	10.00%	5.69
	People (coordinator for basic resources/providers, residents for any threats and concerns)		411.09	10.00%	5.69
	People (traffic control measures implementation)		411.09	20.00%	11.38
DEMOBILIZATION AND OPERATIONAL PHASE					
Dismantling of Temporary Facilities for Workers	Land, Water (solid waste management plan)		67.28	40.00%	3.73
	Air, People (Air emission and noise control measures)		336.40	20.00%	9.31
	People (Occupational Safety and Health		88.53	30.00%	3.68
Road	Water (storm water		336.40	40.00%	18.63

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
Operations	management implementation)				
	People (enhancement employment livelihood)		88.53	20.00%	2.45
	People (Road traffic noise control)		88.53	10.00%	1.23
	People (Occupational Safety and Health		88.53	30.00%	3.68
	People (traffic control measures implementation)		88.53	10.00%	1.23

Main Corridor Package 8

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
PRE-CONSTRUCTION PHASE					
Acquisition and Applicable Permits processing	People	Development Cost	194.57	10.00%	2.93
Land Acquisition RROW	People (Disturbance/Displacement of Settlers)		194.57	25.00%	7.32
	People (households involuntary resettlements)		194.57	25.00%	7.32
Hiring of Workers (Local)	People (barangay host		194.57	15.00%	4.39
Site Preparation	Land		194.57	5.00%	1.46
Vegetation Clearing	Water		194.57	10.00%	2.93
Utilities Relocation	People		194.57	15.00%	4.39
CONSTRUCTION PHASE					
Construction of Temp Facilities for Workers	Land, Water, People (Solid Waste Management Plan)	Civil Works Cost	164.43	20.00%	4.95
	Land, Water, People (Adequate Sanitation Facilities)		164.43	15.00%	3.71
	People (Safety, Risks, Peace and Order) Coordinators		411.09	10.00%	6.19
Civil Works for the Main Corridor and Link Roads	Land (ground vibration control)		164.43	5.00%	1.24
	Land, Water, People (Proper disposal of debris/spoils and other solid wastes)		164.43	5.00%	1.24
	Land, Water, People (Proper onsite handling, transport and disposal of hazardous materials)		164.43	10.00%	2.48
	Water (implementing measures for water spillage)		164.43	20.00%	4.95
	Land, Water (oil spill management implementation)		164.43	15.00%	3.71
	Air, People (dust control measures)		164.43	5.00%	1.24
	Air, People (Air emission and		164.43	5.00%	1.24

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
	noise control measures)				
	People (Occupational Safety and Health		411.09	50.00%	30.95
	People (safety risks: Barriers, early warning devices)		411.09	10.00%	6.19
	People (coordinator for basic resources/providers, residents for any threats and concerns)		411.09	10.00%	6.19
	People (traffic control measures implementation)		411.09	20.00%	12.38
DEMOBILIZATION AND OPERATIONAL PHASE					
Dismantling of Temporary Facilities for Workers	Land, Water (solid waste management plan)		67.28	40.00%	4.05
	Air, People (Air emission and noise control measures)		336.40	20.00%	10.13
	People (Occupational Safety and Health		88.53	30.00%	4.00
Road Operations	Water (storm water management implementation)		336.40	40.00%	20.26
	People (enhancement employment livelihood)		88.53	20.00%	2.67
	People (Road traffic noise control)		88.53	10.00%	1.33
	People (Occupational Safety and Health		88.53	30.00%	4.00
	People (traffic control measures implementation)		88.53	10.00%	1.33

Link Road Package 1

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
PRE-CONSTRUCTION PHASE					
Acquisition and Applicable Permits processing	People	Development Cost	194.57	10.00%	1.15
Land Acquisition RROW	People (Disturbance/Displacement of Settlers)		194.57	25.00%	2.88
	People (households involuntary resettlements)		194.57	25.00%	2.88
Hiring of Workers (Local)	People (barangay host		194.57	15.00%	1.73
Site Preparation	Land		194.57	5.00%	0.58
Vegetation Clearing	Water		194.57	10.00%	1.15
Utilities Relocation	People		194.57	15.00%	1.73
CONSTRUCTION PHASE					
Construction of Temp Facilities	Land, Water, People (Solid Waste Management Plan)	Civil Works Cost	164.43	20.00%	1.95

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
for Workers	Land, Water, People (Adequate Sanitation Facilities)		164.43	15.00%	1.46
	People (Safety, Risks, Peace and Order) Coordinators		411.09	10.00%	2.44
Civil Works for the Main Corridor and Link Roads	Land (ground vibration control)		164.43	5.00%	0.49
	Land, Water, People (Proper disposal of debris/spoils and other solid wastes)		164.43	5.00%	0.49
	Land, Water, People (Proper onsite handling, transport and disposal of hazardous materials)		164.43	10.00%	0.97
	Water (implementing measures for water spillage)		164.43	20.00%	1.95
	Land, Water (oil spill management implementation)		164.43	15.00%	1.46
	Air, People (dust control measures)		164.43	5.00%	0.49
	Air, People (Air emission and noise control measures)		164.43	5.00%	0.49
	People (Occupational Safety and Health		411.09	50.00%	12.18
	People (safety risks: Barriers, early warning devices)		411.09	10.00%	2.44
	People (coordinator for basic resources/providers, residents for any threats and concerns)		411.09	10.00%	2.44
	People (traffic control measures implementation)		411.09	20.00%	4.87
DEMOBILIZATION AND OPERATIONAL PHASE					
Dismantling of Temporary Facilities for Workers	Land, Water (solid waste management plan)		67.28	40.00%	1.60
	Air, People (Air emission and noise control measures)		336.40	20.00%	3.99
	People (Occupational Safety and Health		88.53	30.00%	1.57
Road Operations	Water (storm water management implementation)		336.40	40.00%	7.98
	People (enhancement employment livelihood)		88.53	20.00%	1.05
	People (Road traffic noise control)		88.53	10.00%	0.52
	People (Occupational Safety and Health		88.53	30.00%	1.57
	People (traffic control measures implementation)		88.53	10.00%	0.52

Link Road Package 2

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
PRE-CONSTRUCTION PHASE					
Acquisition and Applicable Permits	People	Development Cost	194.57	10.00%	1.90

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
processing					
Land Acquisition RROW	People (Disturbance/Displacement of Settlers)		194.57	25.00%	4.75
	People (households involuntary resettlements)		194.57	25.00%	4.75
Hiring of Workers (Local)	People (barangay host		194.57	15.00%	2.85
Site Preparation	Land		194.57	5.00%	0.95
Vegetation Clearing	Water		194.57	10.00%	1.90
Utilities Relocation	People		194.57	15.00%	2.85
CONSTRUCTION PHASE					
Construction of Temp Facilities for Workers	Land, Water, People (Solid Waste Management Plan)	Civil Works Cost	164.43	20.00%	3.21
	Land, Water, People (Adequate Sanitation Facilities)		164.43	15.00%	2.41
	People (Safety, Risks, Peace and Order) Coordinators		411.09	10.00%	4.01
Civil Works for the Main Corridor and Link Roads	Land (ground vibration control)		164.43	5.00%	0.80
	Land, Water, People (Proper disposal of debris/spoils and other solid wastes)		164.43	5.00%	0.80
	Land, Water, People (Proper onsite handling, transport and disposal of hazardous materials)		164.43	10.00%	1.60
	Water (implementing measures for water spillage)		164.43	20.00%	3.21
	Land, Water (oil spill management implementation)		164.43	15.00%	2.41
	Air, People (dust control measures)		164.43	5.00%	0.80
	Air, People (Air emission and noise control measures)		164.43	5.00%	0.80
	People (Occupational Safety and Health		411.09	50.00%	20.06
	People (safety risks: Barriers, early warning devices)		411.09	10.00%	4.01
	People (coordinator for basic resources/providers, residents for any threats and concerns)		411.09	10.00%	4.01
	People (traffic control measures implementation)		411.09	20.00%	8.02
DEMOBILIZATION AND OPERATIONAL PHASE					
Dismantling of	Land, Water (solid waste		67.28	40.00%	2.63

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
Temporary Facilities for Workers	management plan)				
	Air, People (Air emission and noise control measures)		336.40	20.00%	6.56
	People (Occupational Safety and Health		88.53	30.00%	2.59
Road Operations	Water (storm water management implementation)		336.40	40.00%	13.13
	People (enhancement employment livelihood)		88.53	20.00%	1.73
	People (Road traffic noise control)		88.53	10.00%	0.86
	People (Occupational Safety and Health		88.53	30.00%	2.59
	People (traffic control measures implementation)		88.53	10.00%	0.86

Link Road Package 3

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
PRE-CONSTRUCTION PHASE					
Acquisition and Applicable Permits processing	People	Development Cost	194.57	10.00%	0.84
Land Acquisition RROW	People (Disturbance/Displacement of Settlers)		194.57	25.00%	2.10
	People (households involuntary resettlements)		194.57	25.00%	2.10
Hiring of Workers (Local)	People (barangay host		194.57	15.00%	1.26
Site Preparation	Land		194.57	5.00%	0.42
Vegetation Clearing	Water		194.57	10.00%	0.84
Utilities Relocation	People		194.57	15.00%	1.26
CONSTRUCTION PHASE					
Construction of Temp Facilities for Workers	Land, Water, People (Solid Waste Management Plan)	Civil Works Cost	164.43	20.00%	1.42
	Land, Water, People (Adequate Sanitation Facilities)		164.43	15.00%	1.06
	People (Safety, Risks, Peace and Order) Coordinators		411.09	10.00%	1.77
Civil Works for the Main Corridor and Link Roads	Land (ground vibration control)		164.43	5.00%	0.35
	Land, Water, People (Proper disposal of debris/spoils and other solid wastes)		164.43	5.00%	0.35
	Land, Water, People (Proper onsite handling, transport and		164.43	10.00%	0.71

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
	disposal of hazardous materials)				
	Water (implementing measures for water spillage)		164.43	20.00%	1.42
	Land, Water (oil spill management implementation)		164.43	15.00%	1.06
	Air, People (dust control measures)		164.43	5.00%	0.35
	Air, People (Air emission and noise control measures)		164.43	5.00%	0.35
	People (Occupational Safety and Health		411.09	50.00%	8.86
	People (safety risks: Barriers, early warning devices)		411.09	10.00%	1.77
	People (coordinator for basic resources/providers, residents for any threats and concerns)		411.09	10.00%	1.77
	People (traffic control measures implementation)		411.09	20.00%	3.54
DEMOBILIZATION AND OPERATIONAL PHASE					
Dismantling of Temporary Facilities for Workers	Land, Water (solid waste management plan)		67.28	40.00%	1.16
	Air, People (Air emission and noise control measures)		336.40	20.00%	2.90
	People (Occupational Safety and Health		88.53	30.00%	1.14
Road Operations	Water (storm water management implementation)		336.40	40.00%	5.80
	People (enhancement employment livelihood)		88.53	20.00%	0.76
	People (Road traffic noise control)		88.53	10.00%	0.38
	People (Occupational Safety and Health		88.53	30.00%	1.14
	People (traffic control measures implementation)		88.53	10.00%	0.38

Link Road Package 4

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
PRE-CONSTRUCTION PHASE					
Acquisition and Applicable Permits processing	People	Development Cost	194.57	10.00%	0.82
Land Acquisition RROW	People (Disturbance/Displacement of Settlers)		194.57	25.00%	2.06
	People (households involuntary resettlements)		194.57	25.00%	2.06
Hiring of Workers (Local)	People (barangay host		194.57	15.00%	1.24
Site	Land		194.57	5.00%	0.41

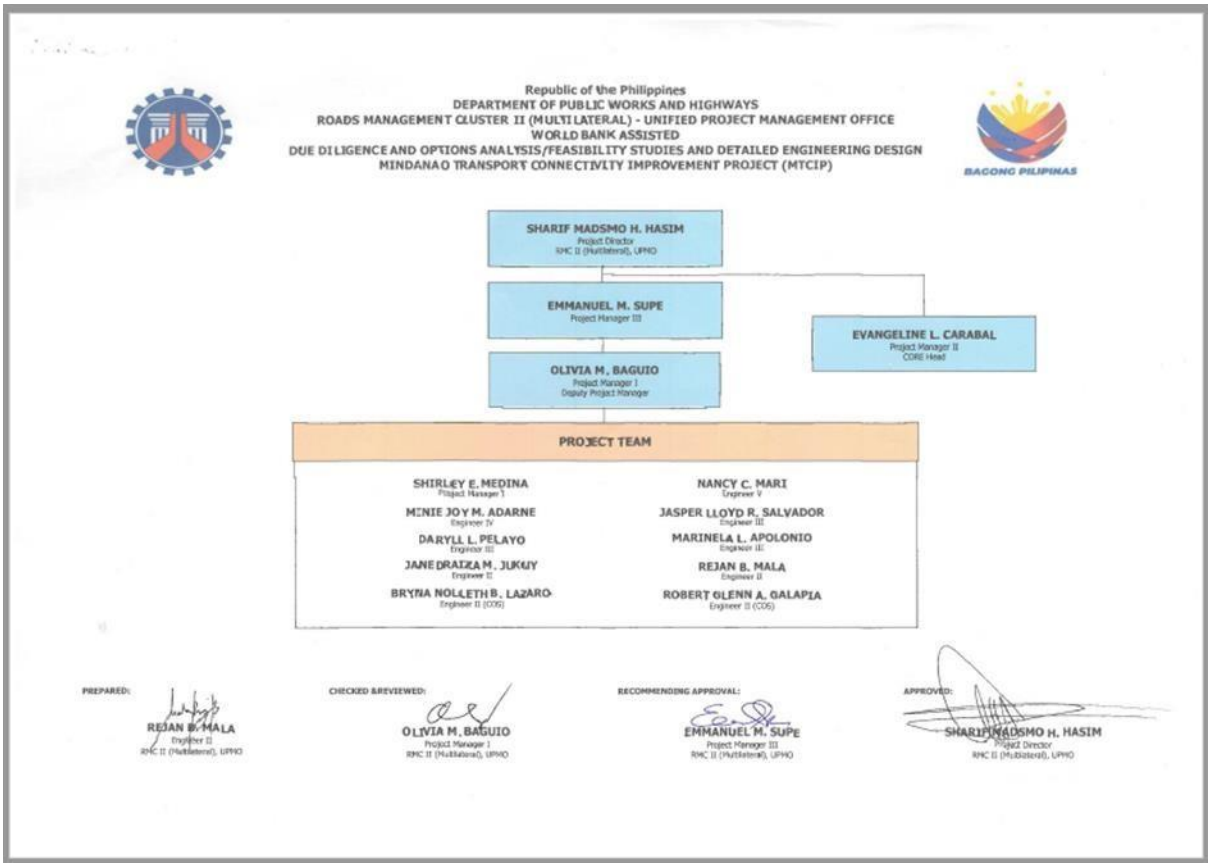
Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
Preparation					
Vegetation Clearing	Water		194.57	10.00%	0.82
Utilities Relocation	People		194.57	15.00%	1.24
CONSTRUCTION PHASE					
Construction of Temp Facilities for Workers	Land, Water, People (Solid Waste Management Plan)	Civil Works Cost	164.43	20.00%	1.39
	Land, Water, People (Adequate Sanitation Facilities)		164.43	15.00%	1.05
	People (Safety, Risks, Peace and Order) Coordinators		411.09	10.00%	1.74
Civil Works for the Main Corridor and Link Roads	Land (ground vibration control)		164.43	5.00%	0.35
	Land, Water, People (Proper disposal of debris/spoils and other solid wastes)		164.43	5.00%	0.35
	Land, Water, People (Proper onsite handling, transport and disposal of hazardous materials)		164.43	10.00%	0.70
	Water (implementing measures for water spillage)		164.43	20.00%	1.39
	Land, Water (oil spill management implementation)		164.43	15.00%	1.05
	Air, People (dust control measures)		164.43	5.00%	0.35
	Air, People (Air emission and noise control measures)		164.43	5.00%	0.35
	People (Occupational Safety and Health		411.09	50.00%	8.71
	People (safety risks: Barriers, early warning devices)		411.09	10.00%	1.74
	People (coordinator for basic resources/providers, residents for any threats and concerns)		411.09	10.00%	1.74
	People (traffic control measures implementation)		411.09	20.00%	3.49
DEMOBILIZATION AND OPERATIONAL PHASE					
Dismantling of Temporary Facilities for Workers	Land, Water (solid waste management plan)		67.28	40.00%	1.14
	Air, People (Air emission and noise control measures)		336.40	20.00%	2.85
	People (Occupational Safety and Health)		88.53	30.00%	1.13
Road Operations	Water (storm water management implementation)		336.40	40.00%	5.70
	People (enhancement employment livelihood)		88.53	20.00%	0.75
	People (Road traffic noise control)		88.53	10.00%	0.38
	People (Occupational Safety and Health		88.53	30.00%	1.13
	People (traffic control measures implementation)		88.53	10.00%	0.38

Link Road Package 5

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
PRE-CONSTRUCTION PHASE					
Acquisition and Applicable Permits processing	People	Development Cost	194.57	10.00%	1.25
Land Acquisition RROW	People (Disturbance/Displacement of Settlers)		194.57	25.00%	3.13
	People (households involuntary resettlements)		194.57	25.00%	3.13
Hiring of Workers (Local)	People (barangay host		194.57	15.00%	1.88
Site Preparation	Land		194.57	5.00%	0.63
Vegetation Clearing	Water		194.57	10.00%	1.25
Utilities Relocation	People		194.57	15.00%	1.88
CONSTRUCTION PHASE					
Construction of Temp Facilities for Workers	Land, Water, People (Solid Waste Management Plan)	Civil Works Cost	164.43	20.00%	2.11
	Land, Water, People (Adequate Sanitation Facilities)		164.43	15.00%	1.58
	People (Safety, Risks, Peace and Order) Coordinators		411.09	10.00%	2.64
Civil Works for the Main Corridor and Link Roads	Land (ground vibration control)		164.43	5.00%	0.53
	Land, Water, People (Proper disposal of debris/spoils and other solid wastes)		164.43	5.00%	0.53
	Land, Water, People (Proper onsite handling, transport and disposal of hazardous materials)		164.43	10.00%	1.06
	Water (implementing measures for water spillage)		164.43	20.00%	2.11
	Land, Water (oil spill management implementation)		164.43	15.00%	1.58
	Air, People (dust control measures)		164.43	5.00%	0.53
	Air, People (Air emission and noise control measures)		164.43	5.00%	0.53
	People (Occupational Safety and Health		411.09	50.00%	13.21
	People (safety risks: Barriers, early warning devices)		411.09	10.00%	2.64
	People (coordinator for basic resources/providers, residents for any threats and concerns)		411.09	10.00%	2.64
	People (traffic control measures implementation)		411.09	20.00%	5.28
DEMOBILIZATION AND OPERATIONAL PHASE					
Dismantling of Temporary Facilities for	Land, Water (solid waste management plan)		67.28	40.00%	1.73
	Air, People (Air emission and		336.40	20.00%	4.32

Project Activities	Environmental Components	Type of Cost	Cost	%	Final Cost (in millions)
Workers	noise control measures)				
	People (Occupational Safety and Health		88.53	30.00%	1.71
Road Operations	Water (storm water management implementation)		336.40	40.00%	8.65
	People (enhancement employment livelihood)		88.53	20.00%	1.14
	People (Road traffic noise control)		88.53	10.00%	0.57
	People (Occupational Safety and Health		88.53	30.00%	1.71
	People (traffic control measures implementation)		88.53	10.00%	0.57

Annex 24. Office Order of DPWH Officials/Personnel Assigned to the Due Diligence and Options Analysis (DDOA)/ Feasibility Studies (FS) and Detailed Engineering Design (DED) for MTCIP



Republic of the Philippines
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
ROADS MANAGEMENT CLUSTER II (MULTILATERAL) - UNIFIED PROJECT MANAGEMENT OFFICE
WORLD BANK ASSISTED
DUE DILIGENCE AND OPTIONS ANALYSIS/FEASIBILITY STUDIES AND DETAILED ENGINEERING DESIGN
MINDANAO TRANSPORT CONNECTIVITY IMPROVEMENT PROJECT (MTCIP)

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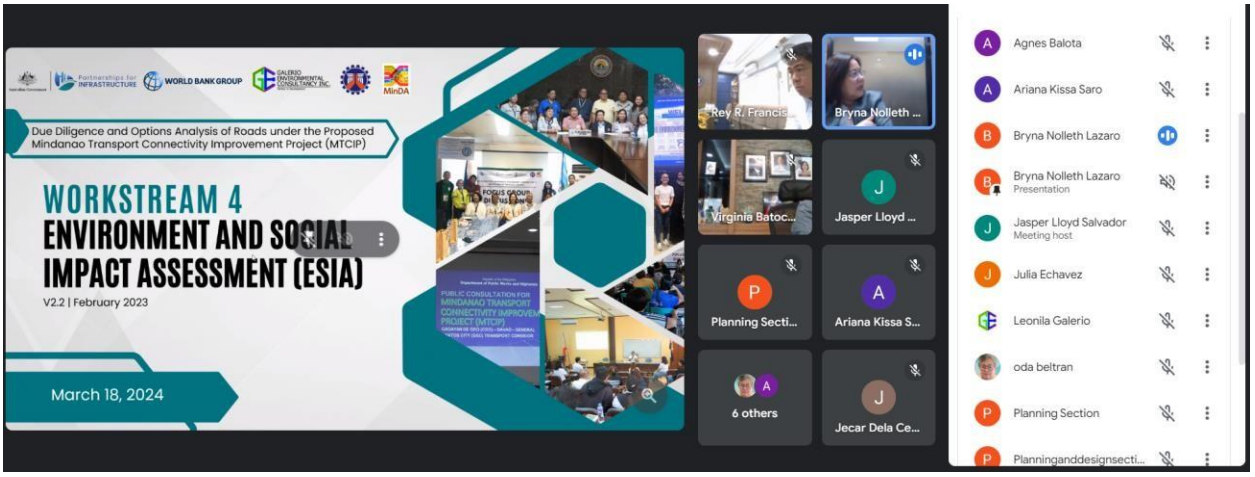
APPROVED:
SHARIF MADSMO H. HASIM
Project Director
RMC II (Multilateral), UPMO

Annex 25. Stakeholders Consultation

Stakeholders consultation of Regional Office

Activity	Date and Time	Invitees	Question	Respond
Workstream 4 Environmental and Social Impact Assessment (ESIA)	March 18, 2024 1:00 PM to 2:00 PM	DPWH Regional Offices X, XI, XII District Engineering Office (DEO)	All participants: Requesting for e-copy of presentation	UPMO Olivia Baguio: Responded that they will send the e-copy of the meeting.

Photo Documentation



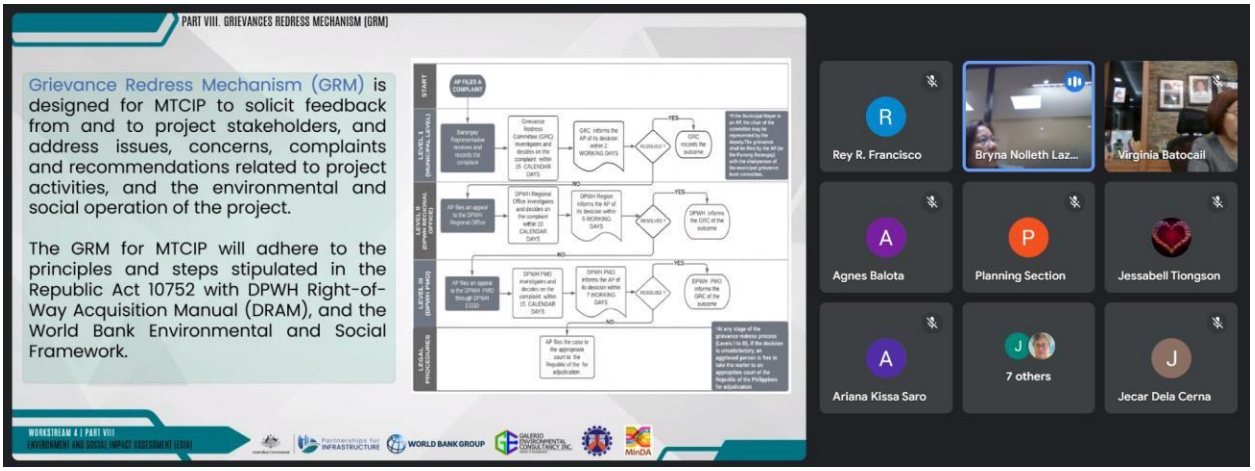
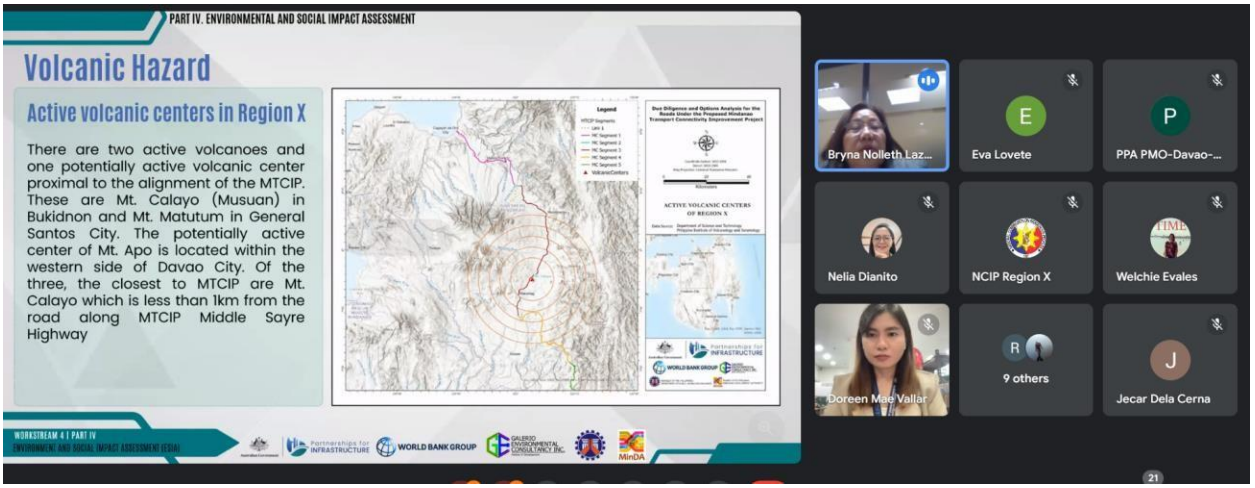


Table 1. Stakeholders' consultation of Line Agencies

Activity	Date and Time	Invitees	Question	Respond
Workstream 4 Environmental and Social Impact Assessment (ESIA)	March 18, 2024 2:00 PM to 3:00 PM	DENR, DHSUD, DOST, NCIP, NEDA, DA, PPA	All participants: Requesting for e-copy of presentation Estrella Luz Peñanosa – NEDA X: Asking about the labor influx? NCIP representative: Asking about suggested measures for addressing the concern of potential IPs affected by the certain project? Additionally, what existing mechanism are in place between the wDPWH and NCIP?	UPMO Olivia Baguio: Responded that they will send the e-copy of the meeting. UPMO Olivia Baguio: Responded in accordance with RA 6685, the DPWH will follow the RA 6685 to hire fifty percent (50%) of the unskilled and the thirty percent (30%) of the skilled worker locally. Coordination with the LGUs the City/Municipality about the program which is include the livelihood program, which is applicable with the local community including women which is also encourage to participate. UPMO Olivia Baguio: We have already existing MOA with the NCIP, and their office will guide/lead us on the step-by-step process of what we should do.

Photo Documentation



Stakeholders' consultation for Local Government Units (LGU)

Activity	Date and Time	Invitees	Question	Respond
Workstream 4 Environmental and Social Impact Assessment (ESIA)	March 18, 2024 1:00 PM to 2:00 PM	LGU's	All participants: Requesting for e-copy of presentation	UPMO Olivia Baguio: Responded that they will send the e-copy of the meeting.

Photo Documentation