

PHILIPPINE NATIONAL ROAD NETWORK

I. Road Classification

A number of laws have been passed regarding the classification of roads in the country. The first comprehensive reference to a Road Classification System is found in Republic Act No. 917, known as the Philippine Highway Act, enacted in 1953 and Executive Order (E.O.) No. 113, Series of 1955. E.O. No. 113 also laid down the criteria for classification of national roads and for conversion from local roads to national roads. This directive classified the roads into National Primary and National Secondary classes as well as delineated the so-called "national aid" provincial and city roads of sufficient importance.

In 1987, by virtue of E.O. No. 124, Series of 1987, Department of Public Works and Highways (DPWH), through the Secretary, was given the power to classify roads and highways and also to provide and authorize the conversion of roads and highways from one category to another.

In April 2002, a Technical Working Group (TWG) was established in connection with the New Planning Process under NRIMP-1, where the main recommendation was to transfer over 10,000 km. of national roads to the Local Government Units (LGU's) but this did not materialize.

In June 2009, a memorandum was approved by then Secretary Hermogenes E. Ebdane, Jr. relative to the Department's criteria/guidelines on road functional classification. National roads were classified in relation to its functionality to the local road network into National Primary Arterial Road (which is further categorized into: North-South Backbone, East-West Lateral, Other Roads of Strategic Importance) and National Secondary Roads.

The North-South Backbone was the main trunk line from northernmost Luzon down to Southern Mindanao interconnecting major islands while the East-West Laterals were the roads traversing the backbone and across the islands. Other Roads of Strategic Importance were direct access to important centers and areas vital for regional development and emergencies. National Secondary roads were other roads which complemented national arterial roads that provided access to other major population and production centers.

On 14 April 2014, a memorandum was issued by Secretary Rogelio L. Singson regarding the new Road Classification System as well as the Route Numbering to all primary roads that has been extended to secondary roads at present. This Road Classification and Route Numbering System was then implemented and incorporated in the Road and Bridge Information Application (RBIA) in compliance to the said memorandum. The succeeding table provides the criteria for each of these classes of road.

TABLE A
Current Classification System
(Per D.O No. 133, s. 2018)

National Primary Roads	<ul style="list-style-type: none"> • A contiguous length of significant road sections extending linearly without any breaks or forks that connect major cities (at least around 100,000 population) comprising the main trunk line or the backbone of the national road system.
National Secondary Roads	<ul style="list-style-type: none"> • Directly connect cities to National Primary Roads, except in metropolitan areas • Directly connect major ports and ferry terminals (as defined by DOTr) to National Primary Roads • Directly connect major airports (as defined by DOTr) to National Primary Roads • Directly connect tourist service centers (as defined by DOT) to National Primary Roads or other National Secondary Roads • Directly connect cities (not included in the category of major cities) • Directly connect provincial capitals within the same region • Directly connect major National Government Infrastructure to National Primary Roads or other National Secondary Roads
Applicable only for Primary and Secondary Roads	<ul style="list-style-type: none"> • Bypass/Diversion Roads – Roads that divert through traffic away from the city/municipality business centers (with affirmative feasibility study) • Roads that would connect or fill the gap between adjoining national roads (protruding) to form a continuous national road network.
National Tertiary Roads	<ul style="list-style-type: none"> • Other existing roads under DPWH which perform a local function
Provincial Roads	<ul style="list-style-type: none"> • Connect cities and municipalities without traversing National Roads • Connect to National Roads to barangays through rural areas • Connect to major provincial government infrastructure
Municipal and City Roads	<ul style="list-style-type: none"> • Roads within a Poblacion • Roads that connect to Provincial and National Roads • Roads that provide inter-barangay connections to major Municipal and City Infrastructure without traversing Provincial Roads
Barangay Roads	<ul style="list-style-type: none"> • Other Public Roads (officially turned over) within the barangay and not covered in the above definitions
Expressways	<ul style="list-style-type: none"> • Highways with limited access, normally with interchanges; may include facilities for levying tolls for passage in an open or closed system.

Modifications have been made to the new classification with the inclusion of the “National Tertiary” class, instead of transferring 10,000 km. of National Roads to the Local Government (city and municipality). No route numbers were assigned to Tertiary Roads as they function as local roads.

II. Route Numbering System (RNS)

Along with a new Functional Classification, a Route Numbering System was created which can be easily understood by road users. Route numbering is essential to road users in planning their itinerary. Road users will also expect that all roads of a certain classification, and of a certain numbering scheme, will have similar performance standards. A well-numbered, well-signed and well-publicized route system is also useful for road agencies and other government bodies to channel traffic into preferred routes or corridors.

The details of the road classification and numbering can be viewed through this web link: <http://www.dpwh.gov.ph/dpwh/gis/rbi>, which shall also be the official source of this information.

The RNS has been devised for Expressways, Primary Roads and Secondary Roads at present. It may be expanded to the Tertiary class at a later date.

TABLE B
Route Numbering System

Classification	Numbering
National Primary	Nos. N1 to N49 for the "main" routes or corridors, i.e. those connecting 3 or more cities Nos. N50 to N99 for other primary routes connecting two cities
National Secondary	Nos. 100 to 999
Expressways	E1, E2, E3, etc.

Expressways are prefixed by the letter "E" for Expressway, in order to differentiate these roads in road user's mind from other types of road. The letter "E" implies a different design and standard of road, and indicates to the public that a toll may be required. Expressways are numbered continuously. A new number is not given simply because a different concessionaire is in charge.

Primary Roads are numbered differently according to whether they form "main" corridors, or whether they only connect two cities. Numbers N1 to N49 are used for "main" routes or corridors like those connecting three or more cities. While, numbers N50 to N99 are for other primary routes connecting two cities. This is purely for convention but it helps to differentiate the nature and function of highways.

Secondary Roads have been given 3-digit numbers. The following general principles or guidelines have been applied:

- (1) The first digit of the Secondary Route corresponds to the number of the Primary Road to which it connects, if any. Thus, for example, Secondary Road 102 connects to Primary Road 1 while Secondary Road 405 connects to Primary Road 4;
- (2) If a Secondary Route connects two Primary Routes, then the first digit of the Secondary Route corresponds to the first digit of the lowest numbered Primary Route. Thus, if a Secondary Route connects Primary Routes 3 and 4, then the first digit of the Secondary Route would be 3;
- (3) "Major" Secondary such as those which can easily be identified as more significant thoroughfares have been numbered in multiples of 10 (e.g. 410, 420, 430...);
- (4) Where possible, gaps have been left in the numbering scheme to accommodate future expansion. Thus, there may be a Route 410, 411, 412 and then the next Route may be 420, leaving a gap 413-419 for future use;
- (5) Most islands (apart from the larger islands of Luzon and Mindanao) have unique first and second digits. Thus, for example, Secondary roads in Bohol are numbered in the 85 series (i.e. 850, 851, 852, etc.) while Secondary roads in Siquijor are numbered in the 86 series (i.e 860, 861, etc.). Note that, at this point, it has not been possible to apply these guidelines strictly in certain cases especially in dense parts of the network such as in National Capital Region.

It will be necessary to add new routes in the future. Any change in classification of an individual road section should result in a new Route Number. It will also be necessary to assign route numbers to new roads, especially at the Primary and Secondary levels.

It is not possible to develop detailed procedures in numbering routes since each situation must be dealt with on a case-by-case basis. The current route numbers will evolve over time as network develops. Reviews shall be undertaken on a periodic six-year cycle and must be done on a holistic basis and should consider the road network in its entirety rather than in a disjointed manner.

III. Road Conversion

The initial classification system of roads in the Philippines was established by succession of laws based from the necessity during the period of their implementation. There are several Executive Orders (E.O.s) and Republic Acts (R.A.) that governs the classification of roads in the Philippines.

E.O. No. 124, Series of 1987, reorganizing the Department of Public Works and Highways, state among others, "***the Minister*** (now Secretary) ***of the Ministry*** (now Department) ***of Public Works and Highways shall have the power to classify roads and highways into national, regional*** (interpreted as routes of primary arterial roads), ***provincial, city, municipal, and barangay roads and highways, based on objective criteria it shall adopt; provide or authorize the conversion of roads and highways from one category to another.***"

Road conversion relates to funding or ownership of the road or which organization is responsible for managing and maintaining an individual road. Normally, national roads are managed by the

National Government and local (Provincial, City, and Municipal) roads are managed by the Local Government.

A memorandum dated 10 June 2009 adopting the DPWH Road Functional Classification Criteria and Technical Requirement was approved and signed by the Department Secretary with the Planning Service as the final recommending arm of the Department. As such, the Planning Service is vested with the authority to inspect and evaluate the conversion of roads from one category to another.

There are three (3) ways of converting roads. It may be done through either executive, legislative or administrative means. The Department of Public Works and Highways was mandated by virtue of E.O. No. 124, series of 1987 to convert regional highways, provincial, city, municipal, barangay roads into national roads under its established Road Functional Classification Criteria and Technical Standards and Requirements. For legislative procedure, the Planning Service (PS) essentially provides comment and information in consonance to the Department's Criteria on Road Functional Classification when requested by both Committees on Public Works, House of Representatives and the Senate. During the hearings conducted by these committees, the Director and staff from PS usually represent DPWH, if the Secretary is not available.

The local road proposed for conversion will be considered for reclassification into national road by way of DPWH Administrative Procedure, as mandated under E.O. No. 124, Series of 1987. It shall be subjected to the criteria and guidelines set per Department Order (D.O.) No 133, s.2018. Said road should satisfy at least one of the new DPWH Road Functional Classification Criteria and should conform to the Technical Requirements and Standards for a national road

DPWH Technical Requirements and Standards for a National Road:

- 1) Proof of acquisition of the required minimum 20-meter road right-of-way (RROW) per E.O. 254, s.1987 (absolute requirement). This includes Deeds of Donation or Sale duly notarized (indicating the lot number, OCT/TCT number, area acquired including technical description, sketches and Real Property Tax Declaration Number;
- 2) Certifications from the concerned Provincial/City/Municipality Register of Deeds in order to ensure the Department that there will be no expense from its part for any claims for the payment of RROW that may arise therefrom;
- 3) Resolution from the City/Municipal/Provincial Board requesting the conversion of a local road into a national road (Absolute Requirement except for an unclassified road); and,
- 4) Certification from the District Engineer concerned that the road is within the DPWH's standards of at least 20 meters RROW, with carriageway width of 6 meters with gravel surfacing and in maintainable condition.

If these conditions are satisfied, a D.O. will be issued by the DPWH Secretary converting the road. The Secretary of Public Works and Highways was given the authority to recommend roads to be declared as national roads by the President of the Republic of the Philippines.

Since the Philippine road network is already mature, it is likely that there are very few cases which can actually warrant a change in classification from local to national function.

TABLE C
NUMBER AND LENGTH OF CONVERTED ROADS
FOR CY 2011 – 2020

YEAR	NUMBER/LENGTH	TOTAL	RA	DO
2011	Number	9	0	9
	Length (km)	67.73	0	67.73
2012	Number	9	0	9
	Length (km)	60.79	0	60.79
2013	Number	64	37	27
	Length (km)	549.13	443.86	105.27
2014	Number	24	0	24
	Length (km)	118.01	0	118.01
2015	Number	7	0	7
	Length (km)	52.65	0	52.65
2016	Number	33	0	33
	Length (km)	82.05	0	82.05
2017	Number	11	0	11
	Length (km)	87.17	0	87.17
2018	Number	16	0	16
	Length (km)	48.02	0	47.97
2019	Number	14	0	14
	Length (km)	73.74	0	73.74
2020	Number	12	1	11
	Length (km)	42.98	5.60	37.38
Grand Total	Number	199	38	161
	Length (km)	1,182.27	449.46	732.76

Table C shows the number and length of converted roads through Legislative and Administrative procedures from 2011 to 2020.

Overall, the total length of road sections whose administration have been transferred from local government units to the national government, from 2011 to 2020, is now 1,182.27 km, consisting of a total of 199 road sections that were converted for the period cited. All road sections reclassified from the year 2011 to 2020 are already included in the RBIA database.

The Department's main focus at this point is developing the Primary and Secondary roads to serve national road network functions. There is no basis for converting roads that largely perform local function. Likewise, the Philippine road network is already mature. It is likely that there are very few cases which can actually warrant a change in classification from local to national function.

Presented in the succeeding graphs (**Figures A and B**) are the number and length of roads converted per year from CY 2011 - 2020.

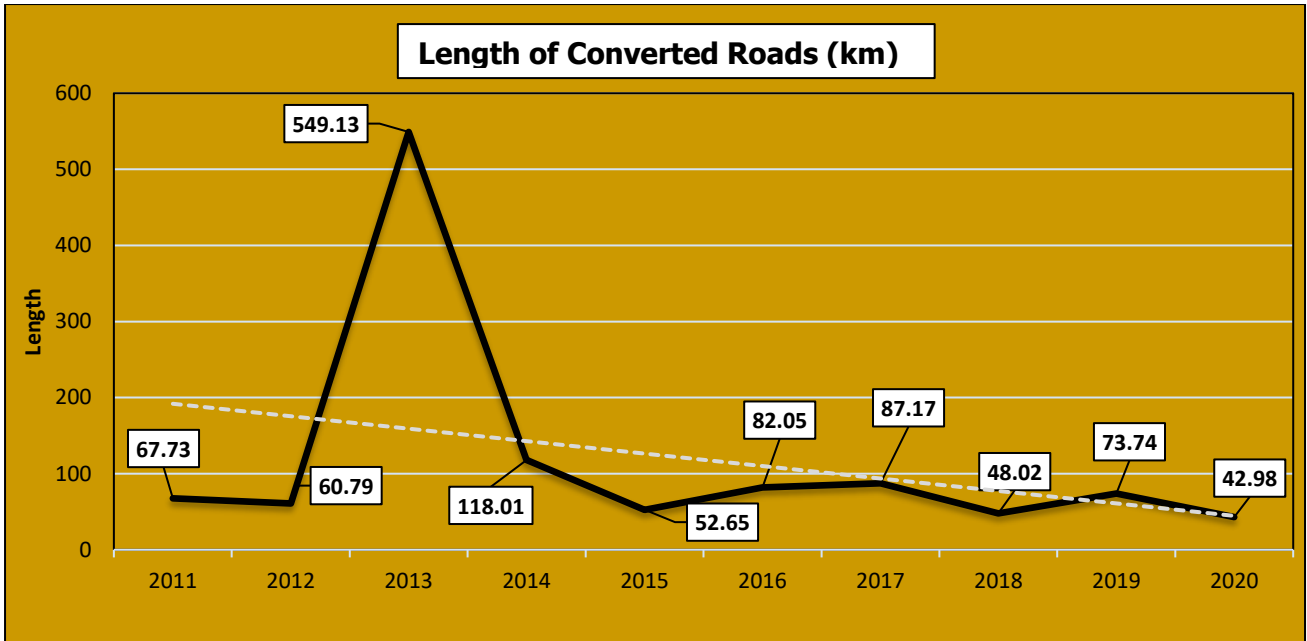


FIGURE A

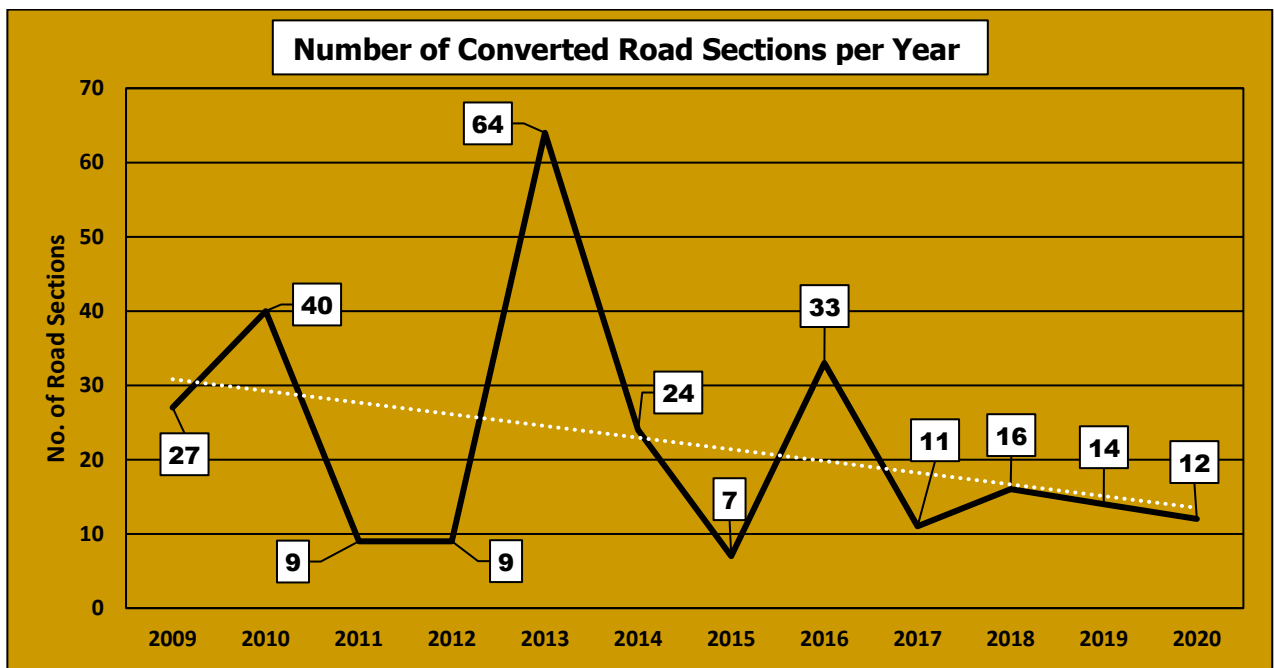


FIGURE B

The number of local roads subject for reclassification varies considerably based on the number of proposals endorsed by DEOs and local government units through resolution, as well as Congress through House Bills. The number of roads that have been converted from 2011 to 2020 are nine (9), nine (9), sixty-four (64), twenty-four (24), seven (7), thirty-three (33), eleven (11), sixteen (16), fourteen (14) and twelve (12); having a corresponding road length of 67.73 km, 60.79 km, 549.13 km, 118.01 km, 52.65 km, 82.05 km, 87.17 km, 48.02 km, 73.74 km and 42.98 km, respectively.

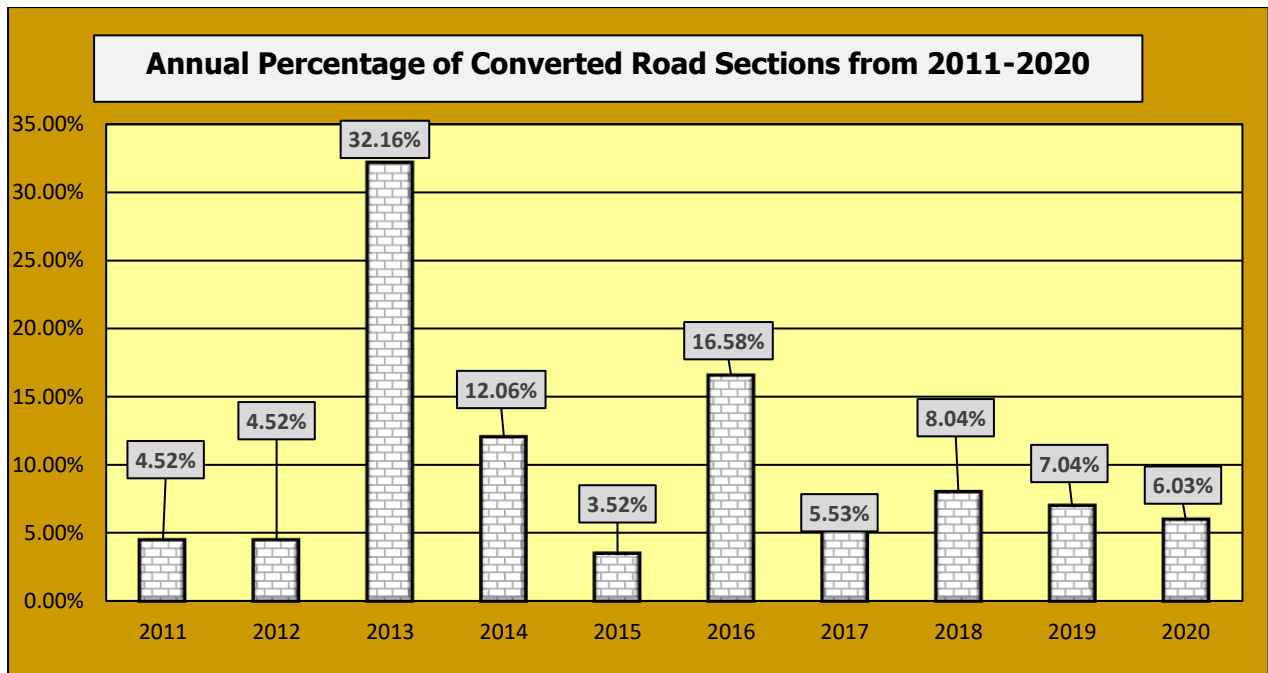


FIGURE C

Figure C shows the annual percentage distribution of the number of roads converted in a ten (10)-year period, from 2011 to 2020. The highest percentage distribution of converted roads is 32.16% which was in 2013. The lowest is at 3.52% in 2015.

Figure D represents the percentage distribution of the length of converted roads from 2011-2020. In a period of ten (10) years, 46.45% is the highest percentage recorded for the year 2013, seconded by 9.98% in 2014, followed by 7.37% in 2017, 6.94% in 2016, 6.24% in 2019, 5.73% in 2011, 5.14% in 2012, 4.45% in 2015, 4.06% in 2018, 3.64% in 2020.

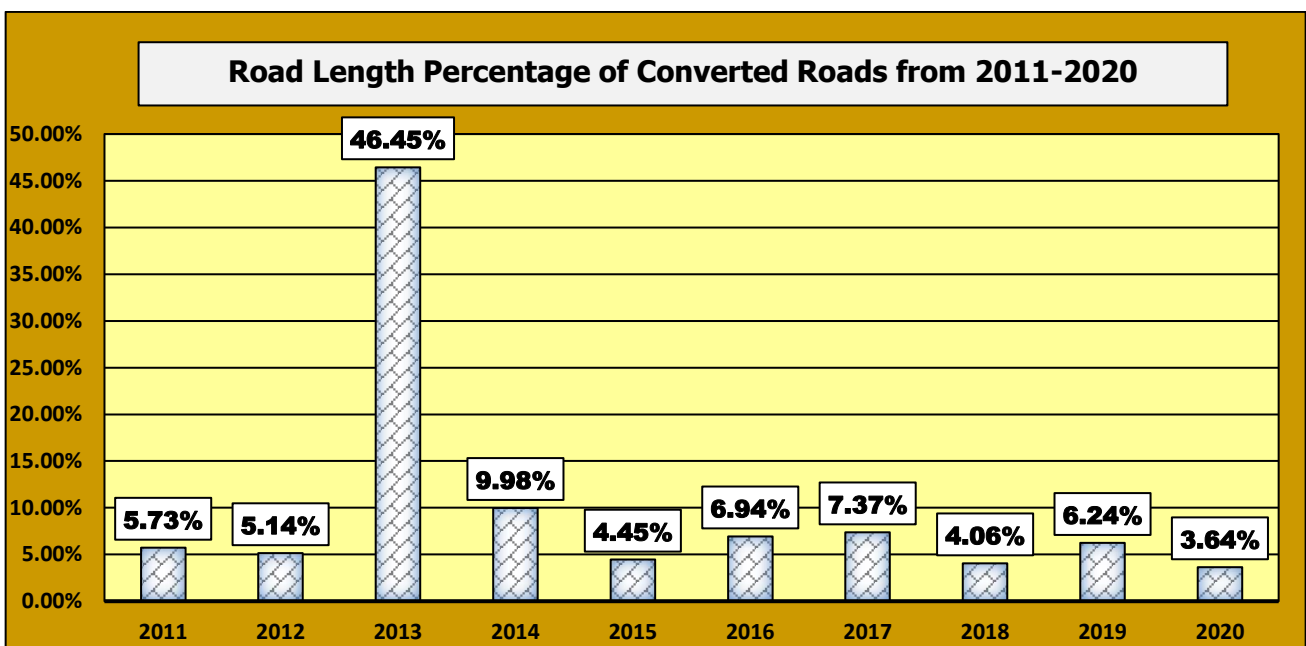


FIGURE D

Table D below provides a detailed list of local roads converted into national roads for CY 2020.

Table D

Department of Public Works and Highways Newly Reclassified Local Roads into National Roads in 2020								
Item	Section ID	Road Name	Length (km)		DEO	Region	Declaration	Date
			Converted	Validated				
1	S06113LZ	Candon Bypass Road	14.512	4.342	Ilocos Sur 2nd	I	D.O. 44, s 2020	11-Mar-20
2	S06114LZ			2.871				
3	S06115LZ			2.847				
4	S06116LZ			4.330				
5	S06117LZ			0.122				
6	S04770LZ	Naguilian-San Mariano-Palanan Road	9.482	9.482	Isabela 3rd	II	D.O. 76, s 2020	25-Aug-20
7	S00428NR	Bacolod-City Boundary Road	3.285	3.285	Bacolod City	VI	D.O. 77, s 2020	25-Aug-20
8	S00406CB	Cansaga Bay Bridge (U-Turn)	0.320	0.320	Cebu 6th	VII	D.O. 78, s 2020	25-Aug-20
9	S00407CB	A. C. Cortes Avenue (U-Turn)	0.394	0.394				
10	S00408CB	U.N. Avenue (Y-Length)	0.123	0.123				
11	S01008MN	Bonifacio-Don Victoriano Road	9.260	9.259	Misamis Occ. 2nd	X	D.O. 79, s 2020	25-Aug-20
12	S05903LZ	Anduyan- San Pascual Road	5.600	5.600	La Union 2nd	I	R.A. 11484, s 2020	14-Aug-20
Total Length (m)			42.976	42.975				

Table E illustrates the number and length of converted roads on a per region basis from the year 2011 to 2020. It clearly shows that NCR has the most number of road sections that were converted as there were forty-two (42) proposed local roads that have passed the Functional Classification Criteria set by the Department.

Furthermore, the region with the longest aggregate road length that has been converted from local roads into national roads is Region II at 198.55 km.

Table E

Summary of Newly Reclassified Local Roads into National Roads by Number of Roads and Length per Region CY 2011-2020												
REGION	UNIT	YEAR										Total
		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
CAR	Number	0	0	8	0	0	2	0	0	0	0	10
	Length (km)	-	-	99.06	-	-	17.55	-	-	-	-	116.61
NCR	Number	0	0	7	11	2	14	4	4	0	0	42
	Length (km)	-	-	12.76	5.56	6.96	5.04	0.57	3.08	-	-	33.98
NIR	Number	0	0	0	0	0	3	0	0	0	0	3
	Length (km)	-	-	-	-	-	4.07	-	-	-	-	4.07
I	Number	2	0	2	1	0	2	0	1	1	6	15
	Length (km)	6.32	-	5.22	0.53	-	2.93	-	4.23	7.887	20.112	47.23
II	Number	4	0	4	0	1	0	3	6	2	1	21
	Length (km)	46.19	-	43.40	-	11.07	-	40.42	26.339	21.654	9.482	198.55
III	Number	0	0	6	0	0	1	0	0	0	0	7
	Length (km)	-	-	71.10	-	-	0.63	-	-	-	-	71.73
IV-A	Number	0	5	1	4	1	2	1	0	0	0	14
	Length (km)	-	1.76	1.60	37.14	2.77	10.68	24.83	-	-	-	78.78
IV-B	Number	0	1	4	0	0	0	1	1	0	0	7
	Length (km)	-	4.17	36.79	-	-	-	0.10	1.06	-	-	42.12
V	Number	1	0	3	0	1	2	0	0	0	0	7
	Length (km)	1.47	-	26.12	-	14.23	24.20	-	-	-	-	66.03
VI	Number	0	0	10	2	0	0	0	1	7	1	21
	Length (km)	-	-	33.16	10.00	-	-	-	1.13	22.855	3.285	70.43
VII	Number	0	0	13	0	0	3	0	1	2	3	22
	Length (km)	-	-	24.11	-	-	5.34	-	9.03	12.188	0.837	51.51
VIII	Number	1	2	2	1	2	1	1	0	0	0	10
	Length (km)	1.20	51.74	44.68	16.58	17.62	1.40	19.22	-	-	-	152.44
IX	Number	0	1	2	0	0	0	0	0	0	0	3
	Length (km)	-	3.13	135.18	-	-	-	-	-	-	-	138.31
X	Number	0	0	0	0	0	0	0	0	1	1	2
	Length (km)	-	-	-	-	-	-	-	-	8.157	9.260	17.42
XI	Number	1	0	0	1	0	0	0	2	0	0	4
	Length (km)	12.55	-	-	5.37	-	-	-	3.16	-	-	21.08
XII	Number	0	0	0	0	0	3	1	0	0	0	4
	Length (km)	-	-	-	-	-	10.21	2.04	-	-	-	12.24
XIII	Number	0	0	2	4	0	0	0	0	1	0	7
	Length (km)	-	-	15.93	42.83	-	-	-	-	0.995	-	59.75
Grand Total	Number	9	9	64	24	7	33	11	16	14	12	199
	Length (km)	67.73	60.79	549.13	118.01	52.65	82.05	87.17	48.02	73.74	42.98	1,182.27

IV. Engineering Offices

Section 25 of Executive Order No. 124, Series of 1987, provides for the establishment of engineering offices in each of the provinces and cities throughout the country responsible for all highways, flood control and water resource development systems, and other public works within the district under the purview of regional offices comprised therein.

Under its present set-up, DPWH has 184 existing Regular District Engineering Offices (DEOs), one (1) Sub-DEO and 16 Regional Offices (ROs) making up contiguous component municipalities established through administrative orders and other forms of legislation.

Significant developments have taken place for the year in consideration specifically with the establishment of the Negros Occidental Sub-DEO and the upgrading of the Cotabato Sub-DEO into a regular engineering office, now known as the Cotabato 3rd DEO. Reconstitution of the component municipalities of the four (4) DEOs of the Province of Isabela has likewise taken place as a result of the two (2) new additional legislative districts that were created pursuant to R.A. No. 11080 enacted in CY 2018 as implemented through D.O. No. 129, s.2019. Also worth noting is the renaming of the Compostela Valley DEO to Davao de Oro DEO in compliance to R.A. No. 11297 approved on 17 April 2019 and ratified through a plebiscite held on 07 December 2019.

The classification of a DEO determines its staffing pattern or workforce as set by the Human Resource and Administrative Service (HRAS). Each regular DEO is classified as either 1st, 2nd or 3rd class based on its equivalent road length. Presently, seventy-one (71), one hundred (100), and thirteen (13) are under the aforementioned classification, respectively.

Table F
Classification of Existing District Engineering Offices

Region	First	Second	Third	Total
CAR	2	10	0	12
NCR	4	3	2	9
I	5	5	0	10
II	4	6	1	11
III	6	6	2	14
IV-A	3	13	0	16
IV-B	5	3	0	8
V	4	10	1	15
VI	6	9	0	15
VII	1	11	2	14
VIII	6	7	0	13
IX	4	4	1	9
X	5	4	3	12
XI	7	1	0	8
XII	6	2	1	9
XIII	3	6	0	9
Total	71	100	13	184

Existing DEOs were established based on vital parameters such as the district's physical and socioeconomic features, particularly its road length, land area and population per DO No. 110, Series of 2016.

A. For the creation of a new DEO, the minimum requirements are as follows:

REQUIREMENT FOR THE CREATION OF DEOs	
PARAMETERS	MINIMUM REQUIREMENT
NATIONAL ROAD LENGTH	100 KILOMETERS
LAND AREA	100 SQ. KM
POPULATION	250,000 INHABITANTS
FOR ISLAND COMPONENT MUNICIPALITY	35,000 INHABITANTS

B. For the classification/reclassification of DEOs the following parameters must be followed:

PARAMETER FOR DEO CLASSIFICATION	
EQUIVALENT LANE KILOMETER	DEO CLASS
250 AND ABOVE	1 ST CLASS
100 UP TO < 250	2 ND CLASS
< 100	3 RD CLASS

An updated list of existing district and regional offices including their corresponding address is provided below.

Table G
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
LIST OF DISTRICT ENGINEERING OFFICES (DEOs) AND OFFICE LOCATION

REGION	DEO	OFFICE LOCATION
CAR	CORDILLERA ADMINISTRATIVE REGION (CAR)	Engineer's Hill, Baguio City
1	ABRA DEO	Rizal St., Zone 7, Bangued, Abra
2	APAYAO 1ST DEO	Conner, Apayao
3	APAYAO 2ND DEO	San Isidro Sur, Luna, Apayao
4	BAGUIO CITY DEO	Engineer's Hill, Baguio City
5	BENGUET 1ST DEO	Wangal, La Trinidad, Benguet
6	BENGUET 2ND DEO	Natubleng, Buguias, Benguet
7	IFUGAO 1ST DEO	Poblacion North, Lagawe, Ifugao
8	IFUGAO 2ND DEO	Galunugon, Aguinaldo, Ifugao
9	LOWER KALINGA DEO	Purok 6, Brgy. Bulanao, Tabuk City, Kalinga
10	MT. PROVINCE DEO	Lower Caluttit, Bontoc, Mountain Province
11	MT. PROVINCE 2ND DEO	Poblacion, Natonin, Mountain Province
12	UPPER KALINGA DEO	Bulanao, Tabuk City, Kalinga, Apayao
NCR	NATIONAL CAPITAL REGION (NCR)	2nd Street, Port Area, Manila
1	LAS PIÑAS-MUNTINLUPA DEO	DPWH NCR Compound, 2nd Street, Port Area, Mla.
2	MALABON-NAVOTAS DEO	C-4 Road, Bagumbayan North, Navotas City
3	METRO MANILA 1ST DEO	West Bank Road, Manggahan Floodway, Rosario, Pasig City
4	METRO MANILA 2ND DEO	Bonifacio Drive cor. 8th St. Port Area, Manila
5	METRO MANILA 3RD DEO	APDC-BAI Compound, R. Valenzuela Ext., Marulas, Valenzuela City
6	NORTH MANILA DEO	Nagtahan, Sta. Mesa, Manila
7	QUEZON CITY 1ST DEO	Sta. Catalina St., Brgy. Holy Spirit, Quezon City
8	QUEZON CITY 2ND DEO	790 EDSA, Diliman, Quezon City
9	SOUTH MANILA DEO	Bonifacio Drive cor. 8th St. Port Area, Manila
REGION I	ILOCOS REGION	Aguila Road, Sevilla, San Fernando City, La Union
1	ILOCOS NORTE 1ST DEO	Airport Avenue, Brgy. 43, Cavit, Laoag City, Ilocos Norte
2	ILOCOS NORTE 2ND DEO	Brgy. 20, San Pablo, San Nicolas, Ilocos Norte
3	ILOCOS SUR 1ST DEO	Zone 6, Bantay, Ilocos Sur
4	ILOCOS SUR 2ND DEO	Brgy. Calaoa-an, Candon City, Ilocos Sur
5	LA UNION 1ST DEO	Brgy. Lingsat, San Fernando City, La Union
6	LA UNION 2ND DEO	Brgy. Natividad, Naguilian, La Union
7	PANGASINAN 1ST DEO	Pandayan St., Poblacion, Alaminos City, Pangasinan
8	PANGASINAN 2ND DEO	Alvear St., Lingayen, Pangasinan
9	PANGASINAN 3RD DEO	Tomana West, Rosales, Pangasinan
10	PANGASINAN 4TH DEO	Brgy. Tuliao, Sta. Barbara, Pangasinan
REGION II	CAGAYAN VALLEY	Reg. Site Center, Carig Sur, Tuguegarao City, Cagayan
1	BATANES DEO	National Rd., Kayvaluganan, Basco, Batanes
2	CAGAYAN 1ST DEO	Brgy. Minanga, Aparri, Cagayan

3	CAGAYAN 2ND DEO	Libertad, Abulog, Cagayan
4	CAGAYAN 3RD DEO	Nursery Compound, Bagay Road, San Gabriel, Tuguegarao City, Cagayan
5	ISABELA 1ST DEO	Brgy. Osmeña, City of Ilagan, Isabela
6	ISABELA 2ND DEO	San Antonio, Roxas, Isabela
7	ISABELA 3RD DEO	Brgy. Tagaran, Cauayan City, Isabela
8	ISABELA 4TH DEO	Brgy. Quezon, San Isidro, Isabela
9	NUEVA VIZCAYA DEO	Capitol Compound, Bayombong, Nueva Viscaya
10	NUEVA VIZCAYA 2ND DEO	Malasin, Dupax del Norte, Nueva Viscaya
11	QUIRINO DEO	Cabarroguis, Quirino
REGION III	CENTRAL LUZON	Sindalan, City of San Fernando, Pampanga
1	AURORA DEO	Brgy. Reserva, Baler, Aurora
2	BATAAN 1ST DEO	Roman Expressway, Orani, Bataan
3	BATAAN 2ND DEO	Vicarville Subdivision, Tenejaro, Balanga City, Bataan
4	BULACAN 1ST DEO	Tikay, City of Malolos, Bulacan
5	BULACAN 2ND DEO	Cityland Subd., Pulong Buhangin, Sta. Maria, Bulacan
6	NUEVA ECIJA 1ST DEO	La Torre, Talavera, Nueva Ecija
7	NUEVA ECIJA 2ND DEO	Brgy. San Isidro, Cabanatuan City
8	PAMPANGA 1ST DEO	Sindalan, City of San Fernando, Pampanga
9	PAMPANGA 2ND DEO	San Antonio, Guagua, Pampanga
10	PAMPANGA 3RD DEO	San Francisco St., Brgy. Pampang, Angeles City
11	TARLAC DEO	Parsolingan, Gerona, Tarlac
12	TARLAC 2ND DEO	NIA Compound, Jefmin, Concepcion, Tarlac
13	ZAMBALES 1ST DEO	Iba, Zambales
14	ZAMBALES 2ND DEO	Sitio Baring, San Nicolas, Castillejos, Zambales
REGION IV-A	CALABARZON	EDSA, Quezon City
1	BATANGAS 1ST DEO	Kumintang Ilaya, Batangas City
2	BATANGAS 2ND DEO	Kumintang Ilaya, Batangas City
3	BATANGAS 3RD DEO	J. Gonzales St., Tanauan City, Batangas
4	BATANGAS 4TH DEO	Brgy. Marawoy, Lipa City, Batangas
5	CAVITE 1ST DEO	Brgy. De Ocampo, Trece Martires City
6	CAVITE 2ND DEO	Akle St., cor. Mahogany Ave., Brgy. Kaybagal South, Tagaytay City
7	CAVITE 3RD DEO	Carmona, Cavite
8	LAGUNA 1ST DEO	Manuel L. Quezon Ave., Brgy. Callios, Sta. Cruz, Laguna
9	LAGUNA 2ND DEO	Brgy. Bambang, Los Baños, Laguna
10	LAGUNA 3RD DEO	Mariflor Subd., San Pablo City, Laguna
11	QUEZON 1ST DEO	Brgy. Abang, Lucban, Quezon
12	QUEZON 2ND DEO	Dalahican Road, Ibabang Dupay, Lucena City
13	QUEZON 3RD DEO	Catanauan, Quezon
14	QUEZON 4TH DEO	Immaculada Concepcion Village, Brgy. Isabang, Lucena City
15	RIZAL 1ST DEO	Brgy. Calumpang, Binangonan, Rizal
16	RIZAL 2ND DEO	#16 West Bank Road, Mangahan Floodway, Brgy. Rosario, Pasig City

REGION IV-B	MIMAROPA	EDSA, Quezon City
1	MARINDUQUE DEO	Bangbangalon, Boac, Marinduque
2	MINDORO OCCIDENTAL DEO	Airport Rd., Mamburao, Mindoro Occidental
3	MINDORO ORIENTAL DEO	Brgy. Masipit, Calapan City, Mindoro Oriental
4	PALAWAN 1ST DEO	Barangay III, Roxas, Palawan
5	PALAWAN 2ND DEO	Km.92, South National Highway, Brgy. Antipuluan, Narra, Palawan
6	PALAWAN 3RD DEO	Brgy. Sta. Monica, Puerto Princesa City, Palawan
7	ROMBLON DEO	#014 J.P. Rizal St., Tabing Dagat, Odiongan, Romblon
8	SOUTHERN MINDORO DEO	Barangay Roxas, Mindoro Oriental
REGION V	BICOL REGION	Regional Center Site, Rawis, Legazpi City, Albay
1	ALBAY 1ST DEO	Airport Site, Legaspi City
2	ALBAY 2ND DEO	RES V Compound, Airport Site, Legaspi City
3	ALBAY 3RD DEO	Paulog, Ligao City
4	CAMARINES NORTE DEO	F. Pimentel Avenue, Brgy. Pasig, Daet, Camarines Norte
5	CAMARINES SUR 1ST DEO	Baras, Canaman, Camarines Sur
6	CAMARINES SUR 2ND DEO	Baras, Canaman, Camarines Sur
7	CAMARINES SUR 3RD DEO	Baras, Canaman, Camarines Sur
8	CAMARINES SUR 4TH DEO	Caraycayon, Tigaon, Camarines Sur
9	CAMARINES SUR 5TH DEO	Brgy. Sta. Teresa, Baao, Camarines Sur
10	CATANDUANES DEO	San Isidro Village, Virac, Catanduanes
11	MASBATE 1ST DEO	Brgy. Bayanihan, San Fernando, Masbate
12	MASBATE 2ND DEO	Capitol Road, Brgy. Centro, Masbate City
13	MASBATE 3RD DEO	Brgy. Balocawe, Dimasalang, Masbate
14	SORSOGON DEO	Daang Maharlika, Guinlajon, Sorsogon
15	SORSOGON 2ND DEO	Brgy. Payawin, Gubat, Sorsogon
REGION VI	WESTERN VISAYAS	Fort San Pedro, Iloilo City
1	AKLAN DEO	Toting Reyes St., Kalibo, Aklan
2	ANTIQUÉ DEO	Preciado Street, San Jose, Antique
3	BACOLOD CITY DEO	Zardonyx St., Brgy. Taculing, Bacolod City
4	CAPIZ 1ST DEO	Km. 1, Roxas City
5	CAPIZ 2ND DEO	Brgy. Consolacion, Dumalag, Capiz
6	GUIMARAS DEO	Brgy. San Miguel, Jordan, Guimaras
7	ILOILO 1ST DEO	Fort San Pedro, Iloilo City
8	ILOILO 2ND DEO	Balabag, Dumangas, Iloilo
9	ILOILO 3RD DEO	Brgy. Puerto Princesa, Barotac Viejo, Iloilo
10	ILOILO 4TH DEO	Brgy. Bolong, Oeste, Sta Barbara, Iloilo
11	ILOILO CITY DEO	Fort San Pedro, Iloilo City
12	NEGROS OCC. 1ST DEO	Matab-ang, Talisay City, Negros Occidental
13	NEGROS OCC. 2ND DEO	Binalbagan, Negros Occidental
14	NEGROS OCC. 3RD DEO	Kabankalan City, Negros Occidental
15	NEGROS OCC. 4TH DEO	Bago City, Negros Occidental
16	NEGROS OCC. SUB-DEO	City of Escalante, Negros Occidental

REGION VII	CENTRAL VISAYAS	South Road Properties (SRP), Cebu City
1	BOHOL 1ST DEO	Dao, Tagbilaran City
2	BOHOL 2ND DEO	Ubay, Bohol
3	BOHOL 3RD DEO	Sawang, Guindulman, Bohol
4	CEBU 1ST DEO	New Medellin Estate, Poblacion Medellin, Cebu
5	CEBU 2ND DEO	Lawaan, Talisay, Cebu
6	CEBU 3RD DEO	Sitio Khinner, Brgy. Poblacion, Toledo City, Cebu
7	CEBU 4TH DEO	Poblacion, Dalaguete, Cebu
8	CEBU 5TH DEO	V. Sotto St., Brgy. Tinago, Pier 3, Cebu City
9	CEBU 6TH DEO	A.C. Cortes Ave., Mandaue City
10	CEBU CITY DEO	V. Sotto St., Brgy. Tinago, Cebu City
11	NEGROS ORIENTAL 1ST DEO	Tinaoagan, Bindoy, Negros Oriental
12	NEGROS ORIENTAL 2ND DEO	Capitol Area, Dumaguete City, Negros Oriental
13	NEGROS ORIENTAL 3RD DEO	Malabuhan, Siaton, Negros Oriental
14	SIQUIOR DEO	Larena, Siquijor
REGION VIII	EASTERN VISAYAS	Govt. Center, Baras, Palo, Leyte
1	BILIRAN DEO	Naval, Biliran
2	EASTERN SAMAR DEO	Brgy. Alang-alang, Borongan City, Eastern Samar
3	LEYTE 1ST DEO	Brgy. Pawing, Palo, Leyte
4	LEYTE 2ND DEO	Brgy. Barugohay Central, Carigara, Leyte
5	LEYTE 3RD DEO	Brgy. Suba, Villaba, Leyte
6	LEYTE 4TH DEO	Government Center Area, Brgy. Punta, Ormoc City, Leyte
7	LEYTE 5TH DEO	Brgy. Hipusngo, Baybay City, Leyte
8	NORTHERN SAMAR 1ST DEO	Catarman, Northern Samar
9	NORTHERN SAMAR 2ND DEO	Brgy. Burabud, Laoang, Northern Samar
10	SAMAR 1ST DEO	Brgy. San Policarpo, Calbayog City, Samar
11	SAMAR 2ND DEO	Brgy. Guindapunan, Catbalogan City, Samar
12	SOUTHERN LEYTE DEO	Brgy. Asuncion, Maasin City, Southern Leyte
13	TACLOBAN CITY DEO	New Bus Terminal, Brgy. Abucay, Tacloban City, Leyte
REGION IX	ZAMBOANGA PENINSULA	Veterans Avenue Extension, Tetuan, Zamboanga City
1	ISABELA CITY DEO	Tabuk, Isabela City, Basilan
2	ZAMBOANGA CITY DEO	MCLL, Divisoria, Zamboanga City
3	ZAMBOANGA DEL NORTE 1ST DEO	Sta. Isabel, Dipolog City, Zamboanga del Norte
4	ZAMBOANGA DEL NORTE 2ND DEO	Usukan, Labason, Zamboanga del Norte
5	ZAMBOANGA DEL NORTE 3RD DEO	Segabe, Piñan, Zamboanga del Norte
6	ZAMBOANGA DEL SUR 1ST DEO	Rizal Avenue, Balangasan District, Pagadian City, Zamboanga del Sur
7	ZAMBOANGA DEL SUR 2ND DEO	Guipos, Zamboanga del Sur
8	ZAMBOANGA SIBUGAY 1ST DEO	Diplahan, Zamboanga Sibugay
9	ZAMBOANGA SIBUGAY 2ND DEO	Ipil, Zamboanga Sibugay
REGION X	NORTHERN MINDANAO	Engineer's Hill, Bulua, Cagayan de Oro City
1	BUKIDNON 1ST DEO	Diclum, Manolo Fortich, Bukidnon
2	BUKIDNON 2ND DEO	Capitol Site, Malaybalay City, Bukidnon

3	BUKIDNON 3RD DEO	Pinamoloy, Don Carlos, Bukidnon
4	CAGAYAN DE ORO CITY 1ST DEO	10th RES Compound, Bulua, Cagayan de Oro City
5	CAGAYAN DE ORO CITY 2ND DEO	Brgy. Macabalan, Cagayan de Oro City
6	CAMIGUIN DEO	Poblacion, Mambajao, Camiguin
7	LANAO DEL NORTE 1ST DEO	ARS Compound, Seminary Drive, Del Carmen, Iligan City
8	LANAO DEL NORTE 2ND DEO	ARS Compound, Seminary Drive, Del Carmen, Iligan City
9	MISAMIS OCCIDENTAL 1ST DEO	Capitol Site, Lowel Lamak, Oroquita City, Misamis Occidental
10	MISAMIS OCCIDENTAL 2ND DEO	Juan Luna Street, Tangub City, Misamis Occidental
11	MISAMIS ORIENTAL 1ST DEO	Purok 5, Saat State Subdivision, Brgy. 26, Gingoog City, Misamis Oriental
12	MISAMIS ORIENTAL 2ND DEO	Balase Street, El Salvador City
REGION XI	DAVAO REGION	Ramon Magsaysay Ave., corner Chavez St., Davao City
1	DAVAO DE ORO DISTRICT	Humabon St., Poblacion Nabunturan, Compostela
2	DAVAO CITY DEO	L. Maria Guerrero St., Davao City
3	DAVAO CITY 2ND DEO	Tirol St., Tugbok, Davao City
4	DAVAO DEL NORTE DEO	Brgy. Canocotan, Tagum City, Davao del Norte
5	DAVAO DEL SUR DEO	Lapu-Lapu St., Digos City, Davao del Sur
6	DAVAO OCCIDENTAL DEO	Brgy. Buhangin, Malita, Davao del Sur
7	DAVAO ORIENTAL 1ST DEO	Brgy. Lucod, Baganga, Davao Oriental
8	DAVAO ORIENTAL 2ND DEO	Mati-ao, Mati City, Davao Oriental
REGION XII	SOCCSKSARGEN	Mabini St., cor. Alunan Ave., Koronadal City, South Cotabato
1	COTABATO 1ST DEO	Villarica, Midsayap, North Cotabato
2	COTABATO 2ND DEO	Lanao, Kidapawan City, North Cotabato
3	COTABATO 3RD DEO	Lanao, Kidapawan City, North Cotabato
4	COTABATO CITY DEO	#8 Ramon H. Rabago Sr. Street, Cotabato City
5	SARANGGANI DEO	Brgy. Kawas, Alabel, Saranggani
6	SOUTH COTABATO 1ST DEO	Brgy. Lagao, General Santos City, South Cotabato
7	SOUTH COTABATO 2ND DEO	Alunan Avenue, Brgy. 3, Koronadal City, South Cotabato
8	SULTAN KUDARAT 1ST DEO	Old Capitol Site, Kalawag Dos, Isulan, Sultan Kudarat
9	SULTAN KUDARAT 2ND DEO	Brgy. Porikay, Sitio Kumalawit, Lebak, Sultan Kudarat
REGION XIII	CARAGA REGION	J. Rosales Ave., Butuan City
1	AGUSAN DEL NORTE DEO	J. Rosales Avenue, Butuan City, Agusan del Norte
2	AGUSAN DEL SUR 1ST DEO	Patin-ay, Prosperidad, Agusan del Sur
3	AGUSAN DEL SUR 2ND DEO	Brgy. Karaos, San Francisco, Agusan del Sur
4	BUTUAN CITY DEO	R. Palma St., Butuan City
5	DINAGAT ISLANDS DEO	Brgy. Cuarenta, San Jose, Dinagat Island
6	SURIGAO DEL NORTE 1ST DEO	Brgy. Dose, Catabaan, Dapa, Surigao del Norte
7	SURIGAO DEL NORTE 2ND DEO	Juese Seing Road, Surigao City
8	SURIGAO DEL SUR 1ST DEO	Capitol Road, Brgy. Elaje, Tandag City, Surigao del Sur
9	SURIGAO DEL SUR 2ND DEO	Purok 13, Mancarogo, Bislig City, Surigao del Sur

Y. Data Analysis

A. National Road Length Per Functional Classification

TABLE H
Annual Increase in Length of National Roads (2011 – 2020)

Year	National Primary (km)	National Secondary (km)	National Tertiary (km)	Total	Annual Increase (km)	Growth Rate (%)
2011	15,986.72	15,372.40	-	31,359.12	116.74	0.37
2012	16,056.47	15,541.21	-	31,597.68	238.56	0.76
2013	16,078.72	16,148.22	-	32,226.93	629.25	1.99
2014	7,060.39	14,051.37	11,414.73	32,526.50	299.57	0.93
2015	7,066.74	14,118.49	11,448.14	32,633.37	106.87	0.33
2016	7,067.42	14,148.04	11,554.81	32,770.27	136.90	0.42
2017	7,066.58	14,248.89	11,552.60	32,868.06	97.79	0.30
2018	7,068.23	14,284.60	11,579.88	32,932.71	64.65	0.20
2019	7,071.85	14,339.06	11,607.34	33,018.25	85.54	0.26
2020	7,093.80	14,394.71	11,631.06	33,119.57	101.32	0.31

Table H provides a summary of the development, in terms of increase in length, of the Philippine National Road Network from 2011-2020. With the inception of the current Functional Classification in April 2014, the length of national roads has been apportioned accordingly, as Primary and Secondary, with the inclusion of National Tertiary Roads.

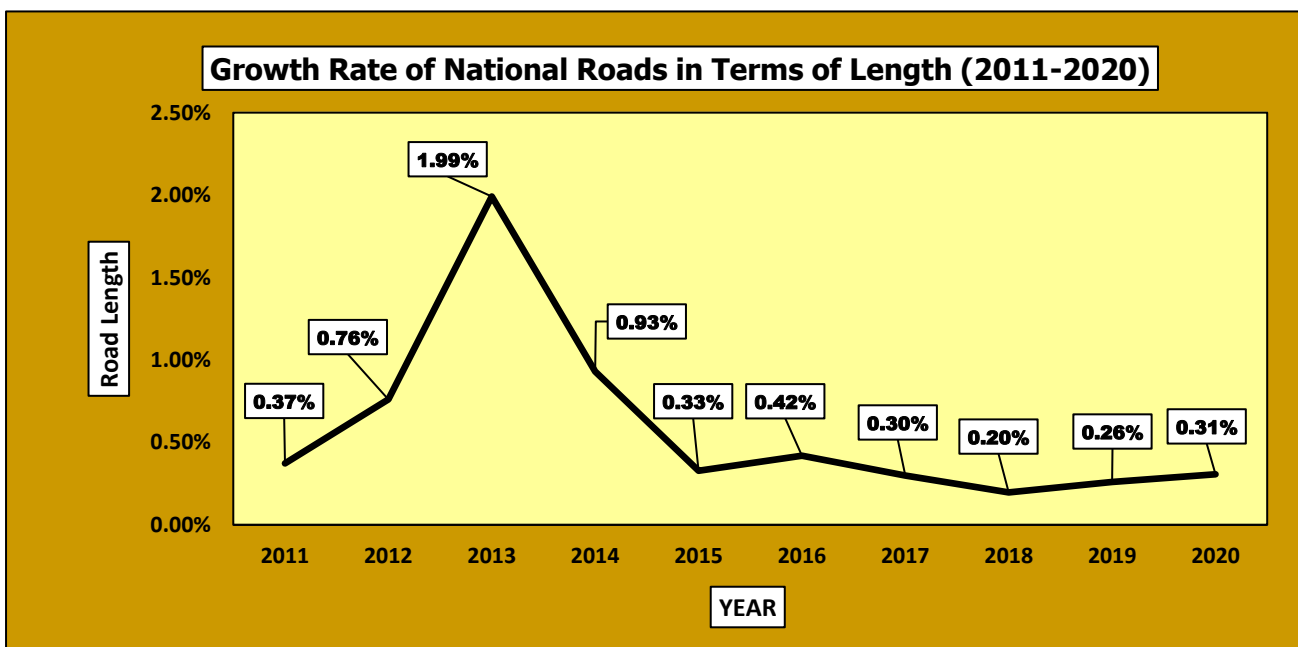


FIGURE E

Figure E gives us a clear picture of the growth rate of roads for the same given period. The figures are as follows: 0.37%, 0.76%, 1.99%, 0.93%, 0.33%, 0.42%, 0.30%, 0.20%, 0.26%, and 0.31%. It is apparent that road length varied significantly throughout the period in consideration.

Based on the most current data for the year 2020, there has been an increase of 101.32 km or 0.31 % in the total road length from the previous year attributable to newly-converted road sections, newly improved gap sections, completed flyover and wye length and modified road configuration from single to dual carriageway.

B. Comparative Regional Yearly Length of National Roads (2011-2020)

The data illustrated in **Table 7** on page 56 shows the increase or decrease of road length according to surface type (paved or unpaved) and functional classification in all the regions under the jurisdiction of the Department. These data give us a clear idea on the state of national roads in the country from 2011 to 2020. The table provides information that can be used as a gauge in monitoring the progress of road surface on an annual basis, so as to assess and compare existing and previous road lengths which are utilized in planning and programming of the Philippine road network.

These data are very useful information to give support to decision-makers from government and private sectors on the future plans and programs in their area of concern to spur economic development in accordance with national development goals and objectives.

The trend shows that from year 2011 to 2020, there has been a relative decrease in the length of unpaved roads and consequently an increase in the length of paved roads all throughout the regions in the country. This was due to road improvements attributable to newly improved gap sections, road sections that were subjected to validation and road inventory and roads requested for conversion from local road to national road evaluated by the Department, in its commitment to provide total connectivity of national roads.

As a result of the inclusion of tertiary roads to the national road network, through the memorandum that was signed by the Secretary in 2014, there has been a notable decrease in the length of Primary and Secondary roads. Nevertheless, this inclusion has not affected the aggregate length of national roads since roads tagged as tertiary were merely reclassified and remain part of the road network.

C. Road Length and Percentage Per Surface Type

**TABLE I
Length and Percentage of National Roads
(CY 2020)**

Surface Type	Length (km)	Percentage (%)
Concrete	21,651.30	65.37
Asphalt	10,875.74	32.84
Gravel	553.91	1.67
Earth	38.62	0.12
Total	33,119.57	100.00

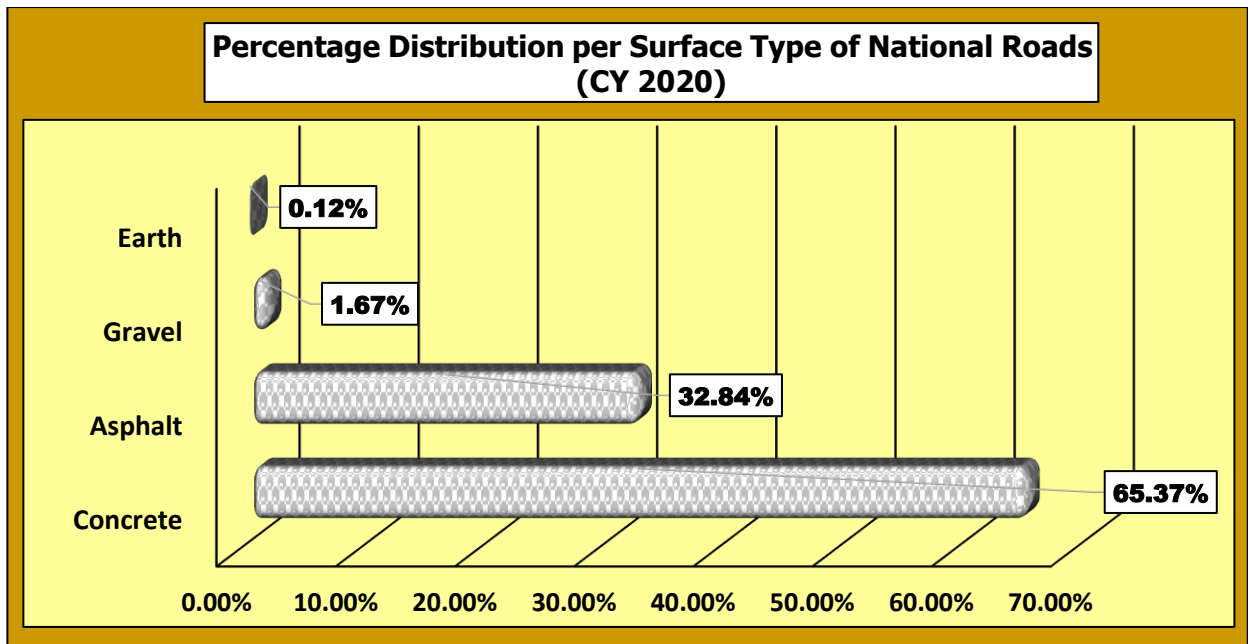


FIGURE F

The country's national road network is predominantly concrete surfacing at 65.37% or 21,651.30 km out of the total length of 33,119.57 km. Asphalt roads which comprise 32.84% of the total road network increased from 10,440.98 the previous year to 10,875 km in CY 2020. Gravel and earth roads are now 1.67% and 0.12% or 553.91 km and 38.62 km, respectively, which is a substantial decrease from 889.21 km and 41.96 km road length based on the data of the next preceding year, as shown in **FIGURE F**.

FIGURE G below shows the percentage of length of national roads based on surface type. For the year 2020, Region VI has the longest concrete roads among the regions in the country, with a length of 2,300.33 km, while NCR has the shortest at 435.72 km. Whereas, Region IV-A has the longest aggregate asphalt road length at 1,636.50 km while Region IV-B has the shortest asphalt roads with a length of 160.15 km.

Further, it is worth noting that NCR and Region IV-A have the highest ratio of paved roads or roads composed of concrete or asphalt among all the other regions under the purview of the Department with zero percent gravel and earth roads, respectively.

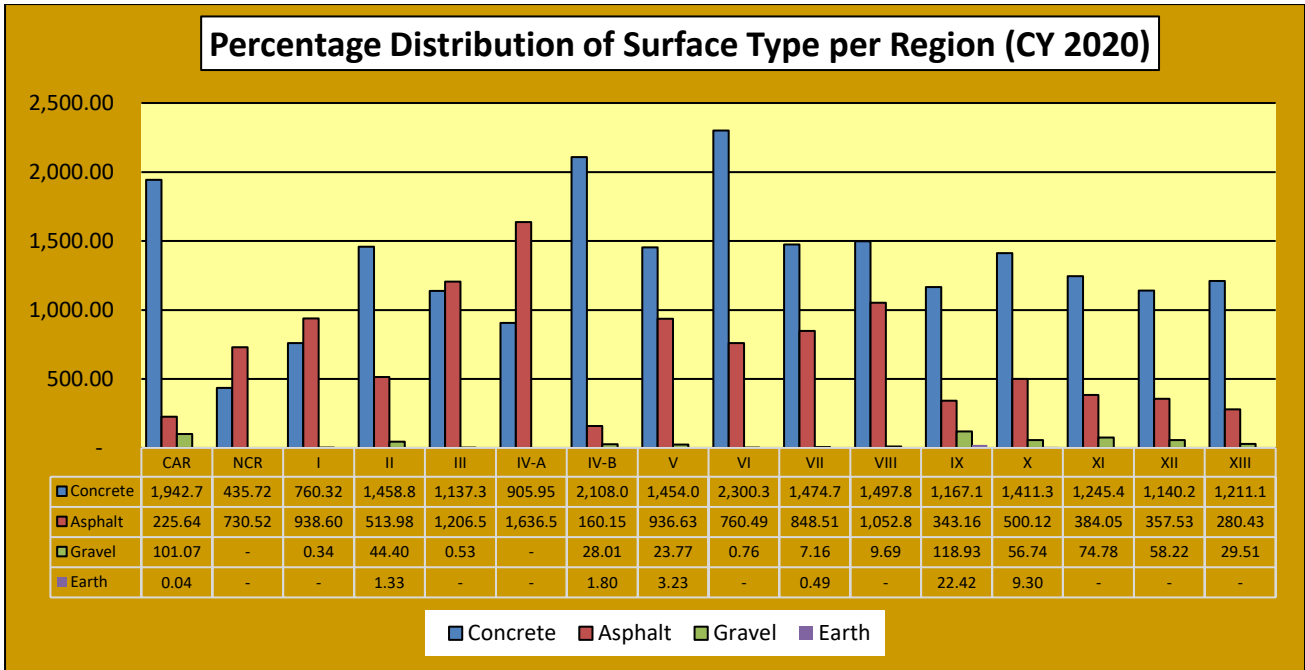


FIGURE G

D. Length and Percentage of Paved & Unpaved Roads

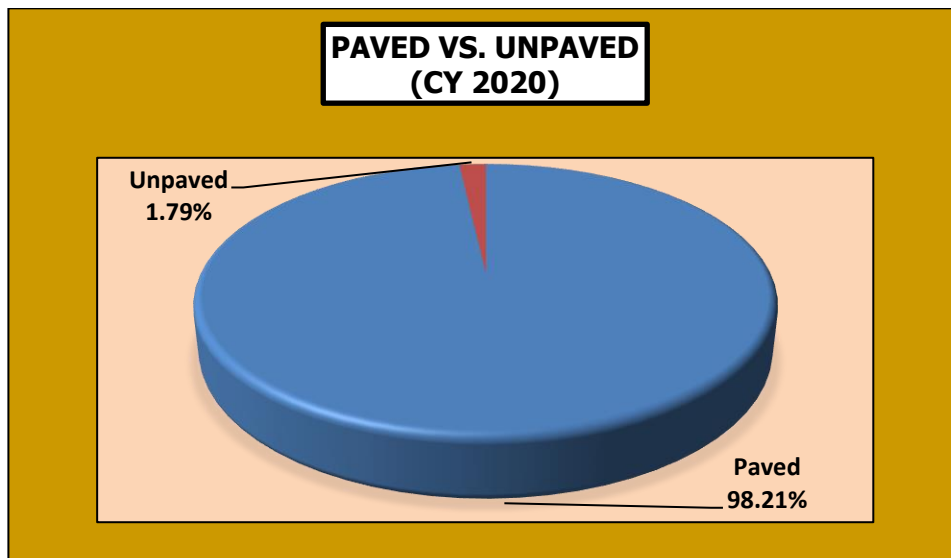


FIGURE H

TABLE J
Length and Percentage of Paved & Unpaved Roads From 2011-2020

Year	PAVED		UNPAVED		Total
	Total	%	Total	%	
2011	24,834.38	79.19	6,524.74	20.81	31,359.12
2012	25,443.44	80.52	6,154.24	19.48	31,597.68
2013	26,772.93	83.08	5,454.00	16.92	32,226.93
2014	27,816.46	85.52	4,710.04	14.48	32,526.50
2015	28,919.17	88.62	3,714.20	11.38	32,633.37
2016	30,009.99	91.58	2,760.27	8.42	32,770.27
2017	31,035.31	94.42	1,832.75	5.58	32,868.06
2018	31,622.78	96.02	1,309.93	3.98	32,932.71
2019	32,087.08	97.18	931.17	2.82	33,018.25
2020	32,527.04	98.21	592.53	1.79	33,119.57

TABLE K
Length and Growth Rate of Paved Roads
For the Period 2011-2020

Year	Length (km)	Growth Rate (%)
2011	24,834.38	2.93
2012	25,443.44	2.45
2013	26,772.93	5.23
2014	27,816.46	3.90
2015	28,919.17	3.96
2016	30,009.99	3.77
2017	31,035.31	3.42
2018	31,622.78	1.89
2019	32,087.08	1.47
2020	32,527.04	1.37

Paved roads in the Philippines steadily increased in the past ten (10) years. **TABLE K** shows the growth rate of paved roads in the Philippine national road network from 2011-2020. Through implementation of right projects, the target outcome has substantially been accomplished at 98.21% or 32,527.04 km of paved roads for the year 2020.

Also, in line with the current administration’s mantra to “Build, Build, Build”, the Philippine government intends to spend around ₱8-9 trillion in infrastructure projects to usher in a golden age of infrastructure in the Philippines. Government spending on public infrastructure was increased from 5.4% of GDP in 2017 to around 7.3% of GDP by 2022. Its infrastructure plan, which is consistent with the Master Plan on ASEAN Connectivity, will help facilitate connectivity of capital, goods, and people; contribute towards increasing trade; and provide greater access to different markets. Thus, such move shall significantly affect the Philippine national road network.

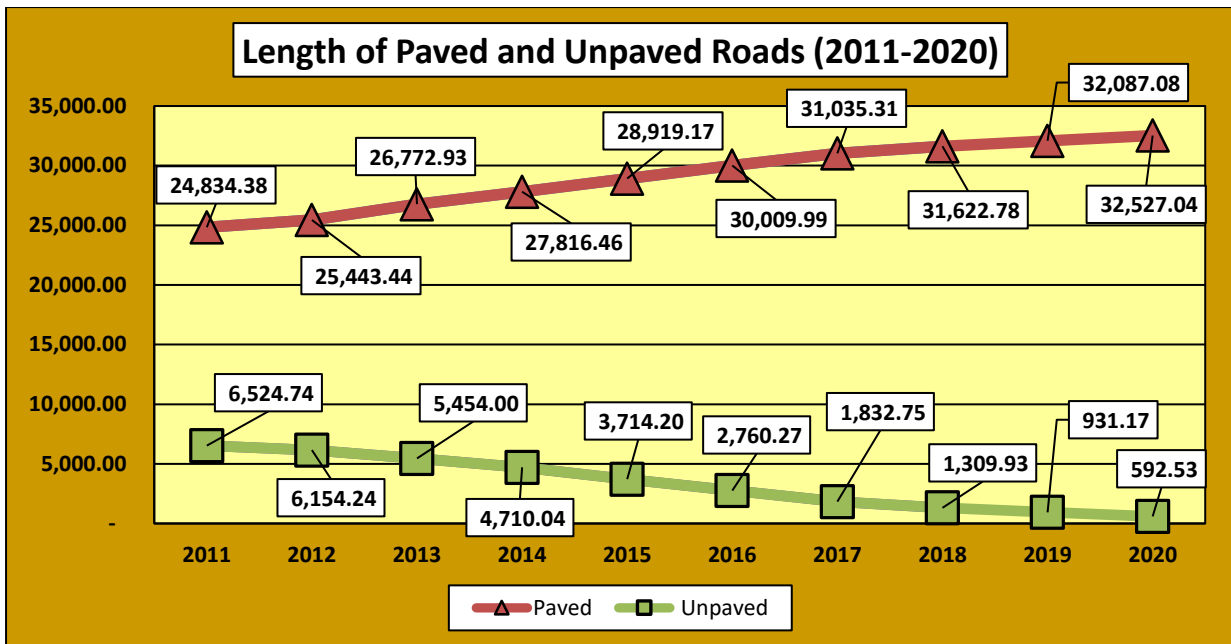


FIGURE I

Figure I shows a noticeable increase in paved roads and decrease in unpaved roads in the country. The line graph shows the yearly increase of paved road and the yearly decrease of unpaved roads from 2011 to 2020. For the past ten (10) years, there has been an increase of 7,692.66 km of paved roads in the Philippines and consequently, a decrease by 5,932.21 km of unpaved roads. For the year 2020, out of the 33,119.57 km of national roads, 98.21% is paved and only 1.79% remains unpaved as shown in **Figure H**.

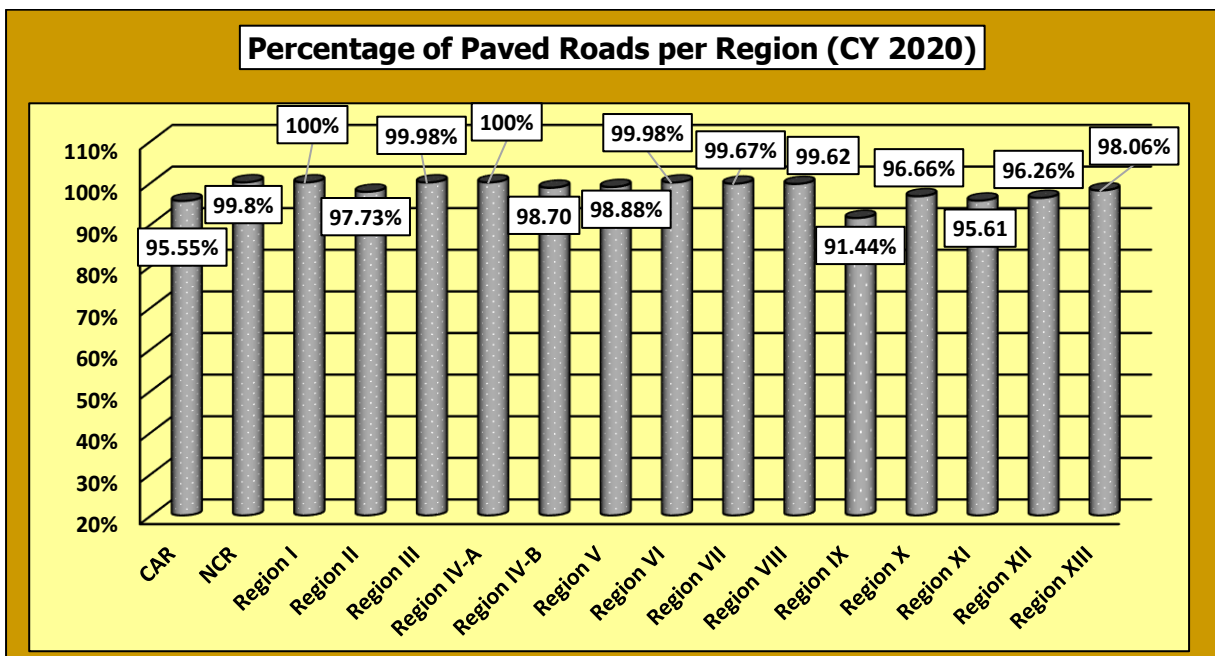


FIGURE J

Based on the total national road network as shown in **Figure J**, National Capital Region (NCR) and Region IV-A have both reached the maximum target of 100% with an aggregate length of 1,166.24 km and 2,542.45 km, respectively. Conversely, Region IX has the lowest percentage of paved roads at 91.44% and with a total length of 1,510.31 km.

E. Road Condition

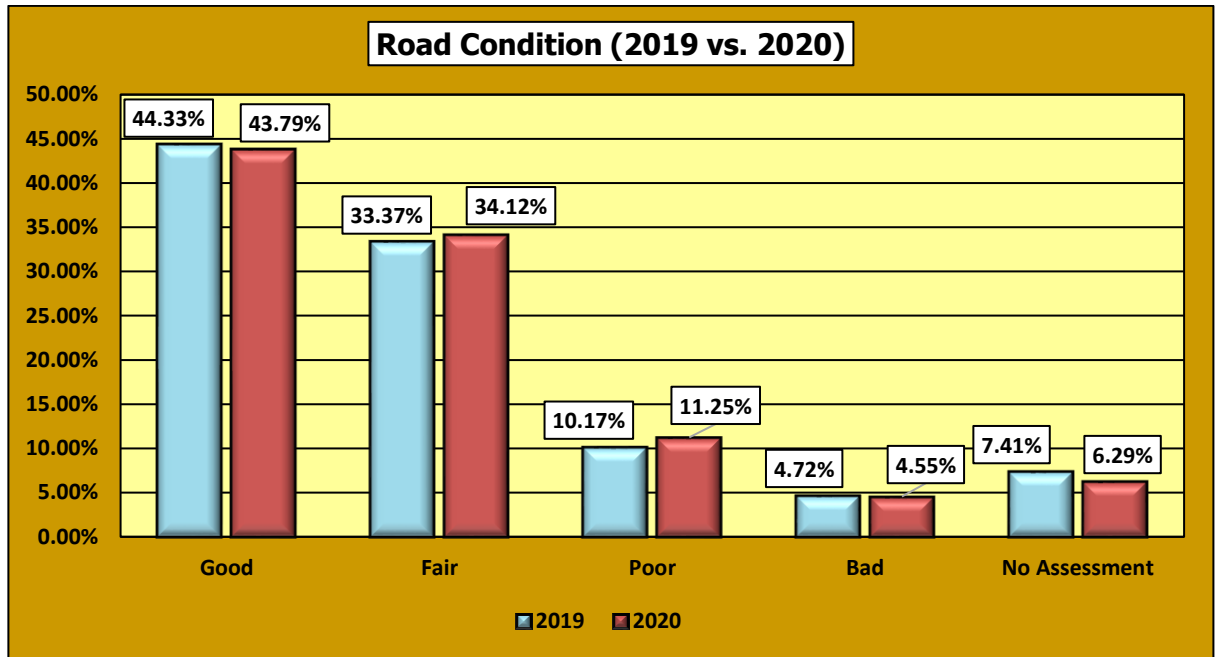


FIGURE K

The graph provides a comparison of the assessed road condition of the national road network in 2019 with that of 2020. The Visual Road Condition (RoCond) survey is a yearly activity wherein the condition of the road is being assessed manually. The gathered data is being utilized as one of the components in running the HDM-4 analysis and for prioritization of projects. Assessors must hike the stretch of roads in order to visualize all the defects and come-up with an accurate assessment to ensure the sustainability and viability of the collected data. The road condition is assessed as "Good", "Fair", "Poor" or "Bad". Good and fair road conditions are subjected to routine maintenance while poor conditions are due for rehabilitation and those with bad conditions are recommended for total reconstruction. However, there are some road sections that were not assessed as they are either under construction, committed for construction and bridges and/or segments with lengths below the 50-meter gauging length.

For the year 2020, record shows that out of the 33,119.57 km total length of national road, 43.79% is in good condition, 34.12% in fair condition, 11.25% in poor condition, 4.55% in bad condition while 6.29% of the total road network are yet to be assessed.

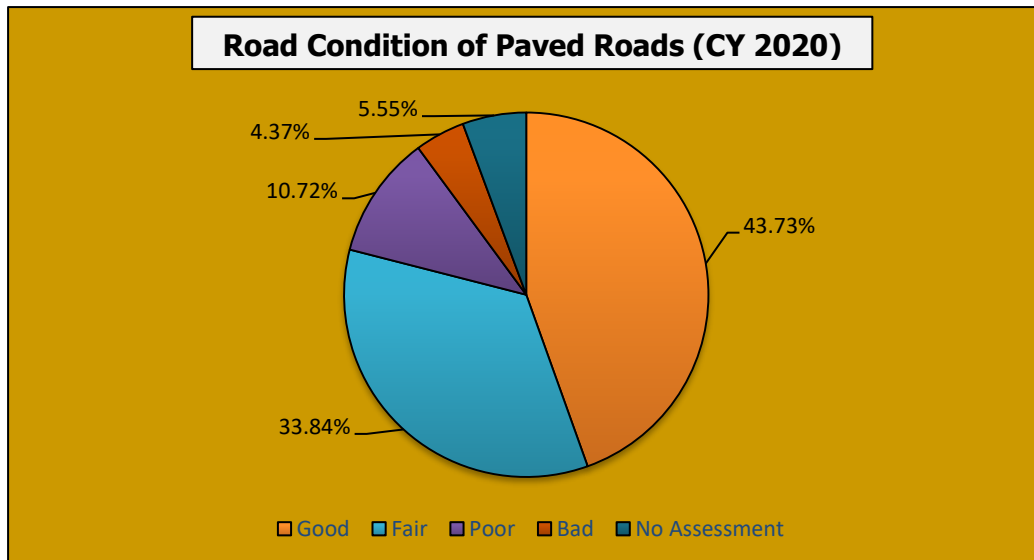


FIGURE L

As shown in **Figure L**, for the year 2020, the percentage of good and fair condition at 43.79% and 34.12% for the entire road network is slightly higher as compared to the percentage exclusive of unpaved roads at 43.73% and 33.84%, respectively. Whereas, poor condition of the whole national road network at 11.25% is higher than that of paved roads at 10.72%. While, the bad condition for paved roads is 4.37% which is slightly lower than the whole network at 4.55%.

The following Visual Condition Index (VCI) value determines the condition of the segment assessed:

TABLE L
VCI Range Values

ROAD CONDITION	CONDITION RATING
>70 - 100	Good
>40 - 70	Fair
>20 - 40	Poor
1 - 20	Bad

TABLE M
Road Condition with Recommended Treatment Measures

Road Condition	Treatment Measures
GOOD	Little or no maintenance required (routine maintenance)
FAIR	Needs some partial/full depth repairs (preventive maintenance)
POOR	Needs extensive full depth repairs, some full slab replacement/ Rehabilitation
BAD	Needs to rebuilt pavement (Total Reconstruction)

F. International Roughness Index (IRI)

Roughness data is one of the key parameters for the operation of the Pavement Management System (PMS) using the HDM-4 software. PMS is used for long-term, medium-term and annual planning and programming purposes. Likewise, information on roughness is a vital data set in reporting network performance under the Department's Performance Governance System (PGS), which is aligned with the administration's initiative of coming up with strategic and performance management tools that would allow government agencies to be assessed objectively, in order to foster transparency and accountability in the different tiers of the organization.

Reduced roughness is a key driver of economic benefit and therefore is crucial to the operation of the PMS. In order to address this matter, a nationwide roughness survey of the paved road network was outsourced.

Since initial inception in 2002, the gathering of the National Road Roughness Index (NRRRI) has been one of the key indicators used in the Pavement Management System (PMS) and HDM-4 by the DPWH in identifying and quantifying key projects for programming. In accomplishing the task, the Statistics Division has been leading the collection and management of the Road Roughness Survey to be able to sustain and support the PMS of the Department.

Aimed at sustaining the Roughness Data requirements for PMS and HDM-4, the NRRIP II (Re-bidding) was procured through Consulting Services in 2016. The project was awarded to RoadKorea Inc. in joint venture Cybersoft Integrated GE.O.informatics Inc. (RKI jv CIGI). The project, which started on 26 January 2017 was completed as scheduled on 25 September 2017. The project was expected to deliver 7,048,929 meters of Roughness Data along the Nation's Primary Road Network in Regions I, II, III, IV-A, V, VI, VII, VIII, IX, X, XI, XII, XIII, CAR and NCR. However, actual accomplishments showed roughness data acceptance totaling 7,000.281 meters of IRI Data.

The Department, through the SD, PS has been manually conducting Road Condition Assessment Survey annually in coordination with the District and Regional Engineering Offices nationwide. Results generated from the said activity were used to support the requirements for PMS and HDM-4 activities and processes. In 2017, initiatives to improve the system came to order through semi-automation of portions of the said survey program. Hence, in line with the said trusts, the outsourcing of the semi-automated Visual Road Condition Assessment Program (VRCAP) went underway as a pilot project in 2017.

The program was procured through Bids and Awards Committee, Consulting Services. RoadKorea Inc. in joint venture Cybersoft Integrated GE.O.informatics Inc. was awarded, the winning bidder from an initially failed procurement bid in 2016. The project which covers a total of 14,112.511 km of Primary Roads Nationwide in Regions I, II, III, IV-A, V, VI, VII, VIII, IX, X, XI, XII, XIII, CAR and NCR, has a project cost of 41,525,188.08. The program started at 26 January 2017, however, the ten (10) month program duration which was expected to end on 26 November was extended until 03 February 2018, due to unexpected turn of events beyond the control of the project. This include, peace and order situations attributed to the siege of Maute Groups in Marawi City in Region X (10 days), additional holidays declared through

Proclamation No. 50 (10.5 days), adjustment and transitory period on Quality Assurance Checking of Statistics Division Staff (28 days), and others (6 days).

The Special Survey for the National Road Roughness Index is being gathered on a regular basis to provide pertinent information to the PMS in the identification and prioritization of future road projects of the department, hence the procurement of the National Road Roughness Index Program Phase III (NRRIP III).

Awarded to RKI JV CIGI on 01 October, 2018, NRRIP III started the day after the issuance of the Notice to Proceed on 21 November, 2018. The project continued to progress in early 2019 until its completion on September 21, 2019. The project required roughness data submission totaling 12,382.813km of national road network which include 6,417.095km of all primary and 5,965.718km of selected secondary national road on cyclical frequency. In the completion of the project, the Consultant provided a total of 12,425.909km of IRI Data to the Department. This is 43.096km more than the contract requirement as previously identified.

Outlook for the 2019 International Road Roughness Index for the Philippine National Road Network registered a Fair Roughness Index after generating a weighted average of 4.68 in the rating scale. Of the total 12.425.909km of roads surveyed for roughness index, 52% are Primary Roads and 48% are Secondary Roads. Out of the total roads surveyed, 25% reached a "Good" condition rating, while 31% of the road network registered a "Fair" condition and a "Poor" road condition reflects on 31% of the road network. The rest 13% of the network recorded a "Bad" road roughness condition.

TABLE N
2019 ROAD ROUGHNESS INDEX, BY ROAD CLASSIFICATION, BY LENGTH, BY % DISTRIBUTION, Philippines

IRI		Primary			Secondary			Total		
Condition	Scoring Range	Rating	Length	% Distribution	Rating	Length	% Distribution	Rating	Length	% Distribution
PHILIPPINES		4.21	6,432,031	52	5.18	5,993,878	48	4.68	12,425,909	100
Good	1 - 3	2.22	2,135,923	17	2.33	983,364	8	2.26	3119287	25
Fair	>3 - 5	3.99	2,154,186	17	4.07	1,750,460	14	4.02	3904646	31
Poor	>5 - 7	5.88	1,598,768	13	5.95	2,225,068	18	5.92	3823836	31
Bad	>7	7.99	543,154	4	8.07	1,034,986	8	8.04	1578140	13

Overall Condition Scores

Among the 25% that reached "Good" road roughness condition, Region XIII demonstrated the best road by registering a 2.11 IRI rating score, followed by Region XII (2.12 IRI rating score), and Region V (2.13 IRI rating score).

Likewise, among the 31% of the road network that reached "Fair" condition rating, Regions IV-A, Region V, and Region I showed to be the fairest by generating condition scores of 3.70, 3.81 and 3.92, respectively.

On the other hand, CAR (6.04 IRI rating score), Region XII (5.98 IRI rating score) and Region XIII (5.98 IRI rating score), reflected the top three (3) bottom scores among the 31% of the road network that recorded the "Poor" road roughness condition.

Meanwhile, among the minor 13% of the road network that revealed a "Bad" road roughness condition rating, Regions III (8.45 IRI rating score), NCR (8.35 IRI rating score) and Region IV-A (8.34 IRI rating score) demonstrated to have the worst road condition and were mostly located in Secondary Roads.

IRI Regional Average shows Region IV-A to have the best road roughness condition in the network by attaining a regional average of 3.34, followed by Regions V and III, by registering IRI scores of 3.39 and 3.63, respectively.

TABLE O
2019 ROAD ROUGHNESS INDEX BY REGION, BY LENGTH, BY % DISTRIBUTION, Philippines

REGION	Good			Fair			Poor			Bad			IRI REGIONAL AVERAGE	TOTAL LENGTH	% DIST
	IRI	LENGTH	% DIST	IRI	LENGTH	% DIST	IRI	LENGTH	% DIST	IRI	LENGTH	% DIST			
PHILIPPINES	2.26	3,119,287	25	4.02	3,904,646	31	5.92	3,823,836	31	8.04	1,578,140	13	4.68	12,425,909	100
CAR	2.36	10,335	0	4.20	15,244	0	6.04	41,623	0	8.12	22,192	0	5.83	89,394	1
NCR	2.37	125,197	1	3.95	187,690	2	5.93	152,203	1	8.35	92,658	1	4.91	557,748	4
Region I	2.29	145,485	1	3.92	147,425	1	5.81	63,350	1	7.72	13,956	0	3.75	370,216	3
Region II	2.26	137,247	1	4.03	244,425	2	5.89	178,600	1	7.93	61,479	0	4.56	621,751	5
Region III	2.16	167,137	1	4.00	119,289	1	5.77	57,226	0	8.45	15,652	0	3.63	359,304	3
Region IV-A	2.26	257,442	2	3.70	130,950	1	5.93	38,543	0	8.34	25,707	0	3.34	452,642	4
Region IX	2.33	142,240	1	4.12	351,607	3	5.91	355,574	3	8.04	142,224	1	5.07	991,645	8
Region V	2.13	177,501	1	3.81	117,313	1	5.84	38,009	0	8.20	16,532	0	3.39	349,355	3
Region VI	2.29	341,335	3	4.09	564,135	5	5.91	711,293	6	7.98	274,960	2	5.02	1,891,723	15
Region VII	2.42	341,233	3	4.01	642,513	5	5.87	487,752	4	7.92	142,014	1	4.58	1,613,512	13
Region VIII	2.26	503,334	4	4.00	567,037	5	5.95	564,957	5	7.99	238,766	2	4.63	1,874,094	15
Region X	2.22	240,569	2	3.99	208,842	2	5.91	215,032	2	7.83	64,182	1	4.31	728,625	6
Region XI	2.20	196,766	2	4.16	297,008	2	5.95	503,680	4	7.95	204,991	2	5.24	1,202,445	10
Region XII	2.12	252,187	2	4.11	236,970	2	5.98	351,377	3	8.23	234,604	2	5.16	1,075,138	9
Region XIII	2.11	81,279	1	4.04	74,198	1	5.98	64,617	1	8.05	28,223	0	4.37	248,317	2

TABLE P
2019 INTERNATIONAL ROAD ROUGHNESS INDEX, PHILIPPINES

REGION	Primary				Secondary				REGIONAL RATING AVERAGE	REGIONAL CONDITION RATING	TOTAL LENGTH	PERCENT DISTRIBUTION
	IRI SCORE	CONDITION RATING	LENGTH	PERCENT DISTRIBUTION	IRI SCORE	CONDITION RATING	LENGTH	PERCENT DISTRIBUTION				
PHILIPPINES	4.21	Fair	6,432,031	52	5.18	Poor	5,993,878	48	4.68	Fair	12,425,909	100
CAR	5.83	Poor	89,394	1					5.83	Poor	89,394	1
NCR	4.96	Fair	169,683	1	4.88	Fair	388,065	3	4.91	Fair	557,748	4
Region I	3.75	Fair	370,216	3					3.75	Fair	370,216	3
Region II	4.56	Fair	621,751	5					4.56	Fair	621,751	5
Region III	3.63	Fair	359,304	3					3.63	Fair	359,304	3
Region IV-A	3.34	Fair	452,642	4					3.34	Fair	452,642	4
Region V	3.39	Fair	349,355	3					3.39	Fair	349,355	3
Region VI	5.07	Poor	481,567	4	5.00	Poor	1,410,156	11	5.02	Poor	1,891,723	15
Region VII	4.27	Fair	528,012	4	4.74	Fair	1,085,500	9	4.58	Fair	1,613,512	13
Region VIII	3.68	Fair	560,345	5	5.04	Poor	1,313,749	11	4.63	Fair	1,874,094	15
Region IX	4.57	Fair	655,035	5	6.04	Poor	336,610	3	5.07	Poor	991,645	8
Region X	4.31	Fair	728,625	6					4.31	Fair	728,625	6
Region XI	4.32	Fair	450,421	4	5.79	Poor	752,024	6	5.24	Poor	1,202,445	10
Region XII	4.36	Fair	367,364	3	5.57	Poor	707,774	6	5.16	Poor	1,075,138	9
Region XIII	4.37	Fair	248,317	2					4.37	Fair	248,317	2

Procurement of the *National Road Roughness Index Program Phase IV (NRRIP-IV)*.

Activities to sustain the HDM-4 requirements continues through the procurement of the NRRIP IV which is programmed under GAA 2020, through an early procurement scheme to pro-actively augment the ill-effects of the cash-based program being implemented by the administrative government. The Program’s Term of Reference (TOR) and Approved Budget of Contract (ABC) were approved on 14 October 2019 and 15 November 2019, respectively. Pre-Bid Conference was the last activity to be conducted for the year for the Project.

Since the World Health Organization (WHO) declared the COVID-19 outbreak as a global pandemic on 11 March 2020, lives have been upended and economic activities disrupted around the world. Implementation of government projects, sadly, was not spared from its effects. One of the many results of COVID-19 has been the imposition of travel restrictions within and between countries. These restrictions, together with government regulations, policies and guidelines, have led to a significant decrease in in-country and international travel. As a consequence of which, outsourcing of consultancy work for our national road roughness project had been put on indefinite hold for the time being.

F. Road Density

Road density pertains to the ratio of the length of the country's total road network to the country's land area. The road network includes all roads in the country: motorways, highways, main or national roads, secondary or regional roads, and other urban and rural roads. It is considered as an appropriate index of human activity and land-use intensity. Thus, road density is generally highly-correlated with amount of developed land surface.

A well-developed road transport sector, most especially in developing countries, is assumed to fuel up the growth process through a variety of activities of the development endeavors of a nation. Among these, creation of market access opportunities for agricultural products is the most crucial.

Road transport facilities play a significant role in both the production and consumption decisions of every household in their day-to-day activities. Besides, road transport facilities are essential for expanding education, health service provision, trade furtherance – both within the country and the export market, and better public as well as private service provisions, including banking and insurance services, to the poor and marginalized rural dweller. Likewise, roads serve as key infrastructural units, which provide linkages to other modes of transportation like railways, shipping, and air network. Hence, it is imperative that we consider all the factors necessary in coming up with the optimum plan to improve road infrastructure, one of which is road density.

Table 11, as seen in page 89 provides a rundown of the road density of the country in the regional and national level for the year 2011-2020. It encompasses the national primary, secondary and tertiary roads; with the exclusion, however, of local roads, under the jurisdiction of the Department of the Interior and Local Government (DILG).

In terms of road density, for the current year, the National Capital Region (NCR) has 188.24 km of roads per square kilometer of land area whereas Western Visayas, the region with the second highest road density, has only 23.97 kilometer per square kilometer. Cagayan Valley has the lowest road density at 6.77 kilometers per square kilometer. Higher income local government units are better able to provide the road network needed in the local areas. Overall, the Philippines' road density for CY 2020 is 10.65 kilometers per square kilometers.