Republic of the Philippines
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
OFFICE OF THE SECRETARY
Manila

897.13 DPWH
12.03.2014

DEC 02 2014

DEPARTMENT ORDER)
)
NO. 141)
Series of 2014 12.03.14

SUBJECT: Standard Construction Duration for Critical Road Projects in National Capital Region (NCR) and other Urban Areas

To ensure timely and efficient completion of critical DPWH projects located in urban areas, particularly in primary roads, standard construction durations are hereby prescribed (Annexes "A1" and "A2") for various categories of projects/works, depending on cost. These durations shall be the maximum allowable for the corresponding categories of projects/works. However, shorter durations shall be adopted whenever possible. In case a duration longer than the duration prescribed herein is to be used, the head of the implementing office shall seek prior approval from the Bureau of Construction.

The computed duration for various categories of projects/works with PCC Pavement surfacing design at 3,500 psi includes curing period of 3 calendar days for primary roads and 7 calendar days for secondary roads.

Annexes "B1" and "B2" are hereto attached, showing the derivation of the standard project duration, Annex "C" prescribes the formula to be adopted in the calculation of the project duration when the cost falls between the values prescribed in Annexes "A1" and "A2".

This Order shall take effect immediately.

ROGELIO L. SINGSON
Secretary

Department of Public Works and Highways
Office of the Secretary
WIN4W01745

5.2 WRO/RCA

STANDARD DURATION FOR DPWH CRITICAL ROAD PROJECTS IN URBAN AREAS
(PRIMARY ROADS / MAIN THOROUGHFARE)

Department Order No. 141
Series of 2014

ANNEX A1

Project Category /Level of Improvement				Project Duration by Project Cost (Calendar Days)				
				5 Million	20 Million	50 Million	100 Million	150 Million
Roads								
		1	Paved (Concrete) To Paved (Concrete)	52	183	272	319	345
		2	Paved (Asphalt) To Paved (Concrete) with Raising of Grade	45	152	225	298	337
		3	Paved (Asphalt) To Paved (Concrete) with Roadway Excavation	55	194	288	338	365
		4	Paved (Asphalt) To Paved (Asphalt), Two Layers (t=100mm)	27	81	119	157	179
		5	Asphalt Overlay, (t=50mm)	18	46	67	87	99
		6	Concrete Reblocking - 30% of existing PCCP	54	190	282	331	358
		7	Concrete Reblocking - 50% of existing PCCP	56	196	292	342	356

Note:

1. To calculate the project duration when the cost falls between the values in the above table, adopt the formula with sample computation attached as Annex "C".
2. Assumptions:
   a. Duration includes Mobilization/Demobilization: Up to P5 Million - 10 c.d.; Above P5 Million up to P20 Million - 15 c.d.; Above P20 Million up to 50 Million - 20 c.d.; Above P50 Million up to 100 Million - 25 c.d & Above P100 Million up to P150 Million - 30 c.d.;
   b. Duration excludes Sundays, Holidays and Pre-determined Unworkable Days, except PCCP where Sundays is included;
   c. For Concrete Pavement, work operation is 10:00 p.m. Friday to 6:00 a.m. Saturday to be passable 5:00 a.m. Monday;
   d. For Asphalt Pavement, work operation is 10:00 p.m. Monday to 5:00 a.m. the following day, daily up to Sunday 5:00 a.m.;
   e. Night operation 80% efficiency with night differential cost of 10% for Labor; and
   f. PCCP - 3500psi @ 3 days (passable within 2 days) using Conventional Method of Construction.
3. No standard duration was established for projects costing more than P150 Million. Computation shall be based on the PERT/CPM schedule, considering the use of optimum additional resources.

STANDARD DURATION FOR DPWH CRITICAL ROAD PROJECTS IN SECONDARY ROADS

Department Order No. 141
Series of 2014

ANNEX A2

Project Category /Level of Improvement				Project Duration by Project Cost (Calendar Days)				
				5 Million	20 Million	50 Million	100 Million	150 Million
Roads								
		1	Paved (Concrete) To Paved (Concrete)	22	61	89	116	132
		2	Paved (Asphalt) To Paved (Concrete) with Raising of Grade	21	56	81	106	121
		3	Paved (Asphalt) To Paved (Concrete) with Roadway Excavation	22	61	88	116	132
		4	Paved (Asphalt) To Paved (Asphalt), Two Layers (t=100mm)	16	36	52	67	78
		5	Asphalt Overlay, (t=50mm)	16	36	51	66	76
		6	Concrete Reblocking - 30% of existing PCCP	23	65	95	124	141
		7	Concrete Reblocking - 50% of existing PCCP	21	56	81	106	121
		8	Widening Paved with Obstructions	19	51	74	96	110
		9	Widening Paved with Complete Drainage Structures both sides (RCPC)	31	98	144	190	215
		10	Widening Paved with Complete Drainage Structures both sides (Concrete Line Canal)	30	92	136	179	203

Note:

1. To calculate the project duration when the cost falls between the values in the above table, adopt the formula with sample computation attached as Annex "C".
2. Assumptions:
   a. Duration includes Mobilization/Demobilization: Up to P5 Million - 10 c.d.; Above P5 Million up to P20 Million - 15 c.d.; Above P20 Million up to 50 Million - 20 c.d.; Above P50 Million up to 100 Million - 25 c.d & Above P100 Million up to P150 Million - 30 c.d.;
   b. Duration excludes Sundays, Holidays and Pre-determined Unworkable Days;
   c. Normal operation means an 8 hr./day operations;
   d. Night Operation is 80% efficiency with Night Differential cost of 10% for Labor.
   e. Work Operations at two (2) shifts per day (8 hours day time & 8 hours night time); and
   f. PCCP - 3500psi @ 7 days using Conventional Method of Construction.
3. No standard duration was established for projects costing more than P150 Million. Computation shall be based on the PERT/CPM schedule, considering the use of optimum additional resources.

DERIVATION OF STANDARD PROJECT DURATION FOR CRITICAL ROAD PROJECTS IN URBAN AREAS
(PRIMARY ROADS / MAIN THOROUGHFARE)

Department Order No. 141
Series of 2014

ANNEX B1

A. Roads

1 Paved (Concrete) To Paved (Concrete) - Pavement Width = 6.70m & Pavement Thickness = 0.30m

Length	1.00 Km.	0.28 Km.	1.13 Km.	2.81 Km.	5.63 Km.	8.44 Km.
Reference/Given amount	17,775,104.65	5,000,000.00	20,000,000.00	50,000,000.00	100,000,000.00	150,000,000.00
(Calendar Days) Reference duration/Proportionate to the given amount	149.00	42.00	168.00	419.50	838.50	1,257.50
Duration Reduction Factor*		1.00	1.00	0.60	0.35	0.25
Total estimated duration including Mob/Demob & Factored duration due to additional set of crew of manpower & equipment		52.00	183.00	271.75	318.50	344.50
		Say 52 c.d.	Say 183 c.d.	Say 272 c.d.	Say 319 c.d.	Say 345 c.d.

2 Paved (Asphalt) To Paved (Concrete) with Raising of Grade

Length	1.00 Km.	0.30 Km.	1.18 Km.	2.96 Km.	5.92 Km.	8.89 Km.
Reference/Given amount	16,879,356.85	5,000,000.00	20,000,000.00	50,000,000.00	100,000,000.00	150,000,000.00
(Calendar Days) Reference duration/Proportionate to the given amount	115.00	34.50	136.50	341.00	681.50	1,022.00
Duration Reduction Factor*		1.00	1.00	0.60	0.40	0.30
Total estimated duration including Mob/Demob & Factored duration due to additional set of crew of manpower & equipment		44.50	151.50	224.75	297.75	336.75
		Say 45 c.d.	Say 152 c.d.	Say 225 c.d.	Say 298 c.d.	Say 337 c.d.

*Duration reduction factor is applied due to infusion of additional resources as the scope of work becomes bigger.

DERIVATION OF STANDARD PROJECT DURATION FOR CRITICAL ROAD PROJECTS IN URBAN AREAS
(PRIMARY ROADS / MAIN THOROUGHFARE)

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ANNEX B1

3 Paved (Asphalt) To Paved (Concrete) with Roadway Excavation

Length	1.00 Km.	0.30 Km.	1.20 Km.	2.99 Km.	5.98 Km.	8.97 Km.
Reference/Given amount	17,498,544.38	5,000,000.00	20,000,000.00	50,000,000.00	100,000,000.00	150,000,000.00
(Calendar Days) Reference duration/Proportionate to the given amount	156.00	45.00	178.50	446.00	892.00	1,337.50
Duration Reduction Factor*		1.00	1.00	0.60	0.35	0.25
Total estimated duration including Mob/Demob & Factored duration due to additional set of crew of manpower & equipment		55.00	193.50	287.75	337.25	364.50
		Say 55 c.d.	Say 194 c.d.	Say 288 c.d.	Say 338 c.d.	Say 365 c.d.

4 Paved (Asphalt) To Paved (Asphalt) - Pavement Width = 6.70m & Pavement Thickness = 100mm

Length	1.00 Km.	0.30 Km.	1.20 Km.	2.99 Km.	5.98 Km.	8.97 Km.
Reference/Given amount	16,726,795.84	5,000,000.00	20,000,000.00	50,000,000.00	100,000,000.00	150,000,000.00
(Calendar Days) Reference duration/Proportionate to the given amount	55.00	16.50	66.00	164.50	329.00	493.50
Duration Reduction Factor*		1.00	1.00	0.60	0.40	0.30
Total estimated duration including Mob/Demob & Factored duration due to additional set of crew of manpower & equipment		26.50	81.00	118.75	156.75	178.25
		Say 27 c.d.	Say 81 c.d.	Say 119 c.d.	Say 157 c.d.	Say 179 c.d.

*Duration reduction factor is applied due to infusion of additional resources as the scope of work becomes bigger.

DERIVATION OF STANDARD PROJECT DURATION FOR CRITICAL ROAD PROJECTS IN URBAN AREAS
(PRIMARY ROADS / MAIN THOROUGHFARE)

Department Order No. 141
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ANNEX B1

5 Asphalt Overlay - Pavement Width = 6.70m Pavement Thickness = 50mm

Length	1.00 Km.	0.70 Km.	2.79 Km.	6.97 Km.	13.93 Km.	20.90 Km.
Reference/Given amount	7,178,032.63	5,000,000.00	20,000,000.00	50,000,000.00	100,000,000.00	150,000,000.00
(Calendar Days) Reference duration/Proportionate to the given amount	11.00	8.00	31.00	77.00	153.50	230.00
Duration Reduction Factor*		1.00	1.00	0.60	0.40	0.30
Total estimated duration including Mob/Demob & Factored duration due to additional set of crew of manpower & equipment		18.00	46.00	66.25	86.50	99.00
		Say 18 c.d.	Say 46 c.d.	Say 67 c.d.	Say 87 c.d.	Say 99 c.d.

6 Concrete Reblocking (w/ overlay, t=50mm) - 30% of existing PCCP

Length	1.00 Km.	0.74 Km.	2.96 Km.	7.40 Km.	14.79 Km.	22.19 Km.
Reference/Given amount	6,759,824.12	5,000,000.00	20,000,000.00	50,000,000.00	100,000,000.00	150,000,000.00
(Calendar Days) Reference duration/Proportionate to the given amount	59.00	44.00	175.00	436.50	873.00	1,309.50
Duration Reduction Factor*		1.00	1.00	0.60	0.35	0.25
Total estimated duration including Mob/Demob & Factored duration due to additional set of crew of manpower & equipment		54.00	190.00	282.00	330.75	357.50
		Say 54 c.d.	Say 190 c.d.	Say 282 c.d.	Say 331 c.d.	Say 358 c.d.

*Duration reduction factor is applied due to infusion of additional resources as the scope of work becomes bigger.

DERIVATION OF STANDARD PROJECT DURATION FOR CRITICAL ROAD PROJECTS IN URBAN AREAS
(PRIMARY ROADS / MAIN THOROUGHFARE)

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ANNEX B1

7 Concrete Reblocking (w/ overlay, t=50mm) - 50% of existing PCCP

Length	1.00 Km.	0.45 Km.	1.81 Km.	4.52 Km.	9.03 Km.	13.55 Km.
Reference/Given amount	11,073,395.33	5,000,000.00	20,000,000.00	50,000,000.00	100,000,000.00	150,000,000.00
(Calendar Days) Reference duration/Proportionate to the given amount	100.00	45.50	181.00	452.00	903.50	1,355.00
Duration Reduction Factor*		1.00	1.00	0.60	0.35	0.24
Total estimated duration including Mob/Demob & Factored duration due to additional set of crew of manpower & equipment		55.50	196.00	291.25	341.25	355.25
		Say 56 c.d.	Say 196 c.d.	Say 292 c.d.	Say 342 c.d.	Say 356 c.d.

*Duration reduction factor is applied due to infusion of additional resources as the scope of work becomes bigger.

DERIVATION OF STANDARD PROJECT DURATION FOR CRITICAL ROAD PROJECTS IN SECONDARY ROADS

Department Order No. 141
Series of 2014

ANNEX B2

1 **Paved (Concrete) To Paved (Concrete) - Pavement Width = 6.70m, Shoulder Width = 2.00m & Pavement Thickness = 0.28m**

Length	1.00 Km.	0.30 Km.	1.19 Km.	2.98 Km.	5.96 Km.	8.95 Km.
Reference/Given amount	16,764,714.33	5,000,000.00	20,000,000.00	50,000,000.00	100,000,000.00	150,000,000.00
(Calendar Days) Reference duration/Proportionate to the given amount	38.00	11.50	45.50	113.50	227.00	340.00
Duration Reduction Factor*		1.00	1.00	0.60	0.40	0.30
Total estimated duration including Mob/Demob & Factored duration due to additional set of crew of manpower & equipment		21.50	60.50	88.25	116.00	132.00
		Say 22 c.d.	Say 61 c.d.	Say 89 c.d.	Say 116 c.d.	Say 132 c.d.

2 **Paved (Asphalt) To Paved (Concrete) with Raising of Grade**

Length	1.00 Km.	0.29 Km.	1.15 Km.	2.87 Km.	5.75 Km.	8.62 Km.
Reference/Given amount	17,393,654.04	5,000,000.00	20,000,000.00	50,000,000.00	100,000,000.00	150,000,000.00
(Calendar Days) Reference duration/Proportionate to the given amount	35.00	10.50	40.50	101.00	201.50	302.00
Duration Reduction Factor*		1.00	1.00	0.60	0.40	0.30
Total estimated duration including Mob/Demob & Factored duration due to additional set of crew of manpower & equipment		20.50	55.50	80.75	105.75	120.75
		Say 21 c.d.	Say 56 c.d.	Say 81 c.d.	Say 106 c.d.	Say 121 c.d.

*Duration reduction factor is applied due to infusion of additional resources as the scope of work becomes bigger.

DERIVATION OF STANDARD PROJECT DURATION FOR CRITICAL ROAD PROJECTS IN SECONDARY ROADS

Department Order No. 141
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ANNEX B2

3 Paved (Asphalt) To Paved (Concrete) with Roadway Excavation

Length	1.00 Km.	0.29 Km.	1.15 Km.	2.87 Km.	5.75 Km.	8.62 Km.
Reference/Given amount	16,857,598.44	5,000,000.00	20,000,000.00	50,000,000.00	100,000,000.00	150,000,000.00
(Calendar Days) Reference duration/Proportionate to the given amount	38.00	11.50	45.50	113.00	225.50	338.50
Duration Reduction Factor*		1.00	1.00	0.60	0.40	0.30
Total estimated duration including Mob/Demob & Factored duration due to additional set of crew of manpower & equipment		21.50	60.50	88.00	115.25	131.75
		Say 22 c.d.	Say 61 c.d.	Say 88 c.d.	Say 116 c.d.	Say 132 c.d.

4 Paved (Asphalt) To Paved (Asphalt) - Pavement Width = 6.70m, Shoulder Width = 2.00m & Pavement Thickness = 100mm

Length	1.00 Km.	0.31 Km.	1.23 Km.	3.08 Km.	6.16 Km.	9.24 Km.
Reference/Given amount	16,238,385.44	5,000,000.00	20,000,000.00	50,000,000.00	100,000,000.00	150,000,000.00
(Calendar Days) Reference duration/Proportionate to the given amount	17.00	5.50	21.00	52.50	105.00	157.50
Duration Reduction Factor*		1.00	1.00	0.60	0.40	0.30
Total estimated duration including Mob/Demob & Factored duration due to additional set of crew of manpower & equipment		15.50	36.00	51.50	67.00	77.25
		Say 16 c.d.	Say 36 c.d.	Say 52 c.d.	Say 67 c.d.	Say 78 c.d.

*Duration reduction factor is applied due to infusion of additional resources as the scope of work becomes bigger.

DERIVATION OF STANDARD PROJECT DURATION FOR CRITICAL ROAD PROJECTS IN SECONDARY ROADS

Department Order No. 141
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ANNEX B2

5 Asphalt Overlay - Pavement Width = 6.70m, Shoulder Width = 2.00m & Pavement Thickness = 50mm

Length	1.00 Km.	0.72 Km.	2.86 Km.	7.16 Km.	14.32 Km.	21.49 Km.
Reference/Given amount	6,981,070.47	5,000,000.00	20,000,000.00	50,000,000.00	100,000,000.00	150,000,000.00
(Calendar Days) Reference duration/Proportionate to the given amount	7.00	5.50	20.50	50.50	100.50	150.50
Duration Reduction Factor*		1.00	1.00	0.60	0.40	0.30
Total estimated duration including Mob/Demob & Factored duration due to additional set of crew of manpower & equipment		15.50	35.50	50.50	65.25	75.25
		Say 16 c.d.	Say 36 c.d.	Say 51 c.d.	Say 66 c.d.	Say 76 c.d.

6 Concrete Reblocking - 30% of existing PCCP

Length	1.00 Km.	0.82 Km.	3.29 Km.	8.22 Km.	16.44 Km.	24.66 Km.
Reference/Given amount	6,082,618.84	5,000,000.00	20,000,000.00	50,000,000.00	100,000,000.00	150,000,000.00
(Calendar Days) Reference duration/Proportionate to the given amount	15.00	12.50	49.50	123.50	247.00	370.00
Duration Reduction Factor*		1.00	1.00	0.60	0.40	0.30
Total estimated duration including Mob/Demob & Factored duration due to additional set of crew of manpower & equipment		22.50	64.50	94.25	124.00	141.00
		Say 23 c.d.	Say 65 c.d.	Say 95 c.d.	Say 124 c.d.	Say 141 c.d.

*Duration reduction factor is applied due to infusion of additional resources as the scope of work becomes bigger.

DERIVATION OF STANDARD PROJECT DURATION FOR CRITICAL ROAD PROJECTS IN SECONDARY ROADS

Department Order No. 141
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ANNEX B2

7 Concrete Reblocking - 50% of existing PCCP

Length	1.00 Km.	0.50 Km.	2.01 Km.	5.02 Km.	10.04 Km.	15.07 Km.
Reference/Given amount	9,955,622.03	5,000,000.00	20,000,000.00	50,000,000.00	100,000,000.00	150,000,000.00
(Calendar Days) Reference duration/Proportionate to the given amount	20.00	10.50	40.50	100.50	201.00	301.50
Duration Reduction Factor*		1.00	1.00	0.60	0.40	0.30
Total estimated duration including Mob/Demob & Factored duration due to additional set of crew of manpower & equipment		20.50	55.50	80.50	105.50	120.50
		Say 21 c.d.	Say 56 c.d.	Say 81 c.d.	Say 106 c.d.	Say 121 c.d.

8 Widening Paved with Obstructions (3.35m Both Sides)

Length	1.00 Km.	0.28 Km.	1.14 Km.	2.85 Km.	5.69 Km.	8.54 Km.
Reference/Given amount	17,569,958.87	5,000,000.00	20,000,000.00	50,000,000.00	100,000,000.00	150,000,000.00
(Calendar Days) Reference duration/Proportionate to the given amount	31.00	9.00	35.50	88.50	176.50	265.00
Duration Reduction Factor*		1.00	1.00	0.60	0.40	0.30
Total estimated duration including Mob/Demob & Factored duration due to additional set of crew of manpower & equipment		19.00	50.50	73.25	95.75	109.50
		Say 19 c.d.	Say 51 c.d.	Say 74 c.d.	Say 96 c.d.	Say 110 c.d.

*Duration reduction factor is applied due to infusion of additional resources as the scope of work becomes bigger.

DERIVATION OF STANDARD PROJECT DURATION FOR CRITICAL ROAD PROJECTS IN SECONDARY ROADS

Department Order No. 141
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ANNEX B2

9 Widening Paved with Complete Drainage Structures Both Sides (RCPC)

Length	1.00 Km.	0.28 Km.	1.14 Km.	2.85 Km.	5.69 Km.	8.54 Km.
Reference/Given amount	37,775,786.83	5,000,000.00	20,000,000.00	50,000,000.00	100,000,000.00	150,000,000.00
(Calendar Days) Reference duration/Proportionate to the given amount	155.00	21.00	82.50	205.50	410.50	615.50
Duration Reduction Factor*		1.00	1.00	0.60	0.40	0.30
Total estimated duration including Mob/Demob & Factored duration due to additional set of crew of manpower & equipment		31.00	97.50	143.50	189.25	214.75
		Say 31 c.d.	Say 98 c.d.	Say 144 c.d.	Say 190 c.d.	Say 215 c.d.

10 Widening Paved with Complete Drainage Structures Both Sides (Concrete Lined Canal)

Length	1.00 Km.	0.28 Km.	1.14 Km.	2.85 Km.	5.69 Km.	8.54 Km.
Reference/Given amount	45,820,277.53	5,000,000.00	20,000,000.00	50,000,000.00	100,000,000.00	150,000,000.00
(Calendar Days) Reference duration/Proportionate to the given amount	176.00	19.50	77.00	192.50	384.50	576.50
Duration Reduction Factor*		1.00	1.00	0.60	0.40	0.30
Total estimated duration including Mob/Demob & Factored duration due to additional set of crew of manpower & equipment		29.50	92.00	135.50	179.00	203.00
		Say 30 c.d.	Say 92 c.d.	Say 136 c.d.	Say 179 c.d.	Say 203 c.d.

*Duration reduction factor is applied due to infusion of additional resources as the scope of work becomes bigger.

DERIVATION OF PROJECT DURATION

Department Order No. 141
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ANNEX C

1. PRIMARY ROADS/MAIN THOROUGHFARE

Formula:

$$C.D. = \left(\frac{(Dh - Dl) \times (Ap - Al)}{(Ah - Al)} \right) + Dl$$

Where:

Dh = Reference Duration (Higher)
Dl = Reference Duration (Lower)
Ah = Reference Amount (Higher)
Al = Reference Amount (Lower)
Ap = Appropriation, amount to be programmed

Sample Computation:

1. Paved (Concrete) to Paved (Concrete) with Appropriation of ₱ 40 Million.

$$= \left(\frac{(272 - 183) \times (40{,}000{,}000 - 20{,}000{,}000)}{(50{,}000{,}000 - 20{,}000{,}000)} \right) + 183$$

= **243 Calendar Days**

2. Asphalt Overlay, (t=50mm) with Appropriation of ₱125 Million.

$$= \left(\frac{(99 - 87) \times (125{,}000{,}000 - 100{,}000{,}000)}{(150{,}000{,}000 - 100{,}000{,}000)} \right) + 87$$

= **93 Calendar Days**