

### ANALYSIS OF ALTERNATE OPTIONS

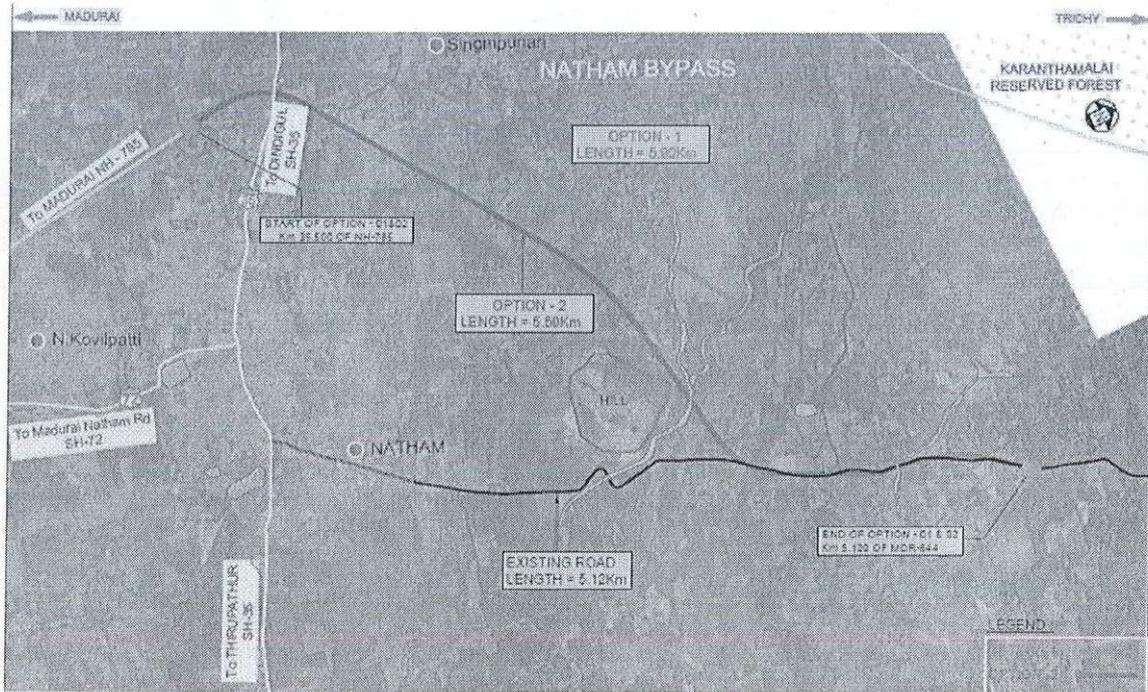
**Bypass for Natham:**

Natham is a Taluk in Dindigul district, having thickly populated residential and commercial properties along the project highway. Due to non availability of adequate RoW along the existing road through the Natham, it is likely to increase the congestion level further if the through traffic is not segregated. Existing RoW in the town is 15-20 m

As the widening of existing alignment passing through the Natham would involve acquisition and dismantling of large number of residential buildings and properties and would have a serious impact on local population and major R&R requirement.

A Bypass is proposed for Natham on SH-72 (New NH 785) on Western side of Natham Town which is under construction. Therefore Bypass is proposed from end of existing Natham Bypass, between Ex. km 35.500 of NH-785 (D.Ch: 35+500) and Ex. km 5.120 of MDR-644 (D.Ch: 41+400)

The various possible options of bypass alignments have been studied, a comparative analysis has been made with various parameters and same is furnished below.



Sl. No.	Description	Through Existing Road	Option - I	Option - II
1	Starting	Existing km 35.200 of SH-35	Existing km 35.500 of NH-785	Existing km 35.500 of NH-785
2	Ending	Existing km 5.120 of MDR-644	Existing km 5.120 of MDR-644	Existing km 5.120 of MDR-644

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Under Bharatmala Pariyojana, Lot 6/Package – 1: **Natham - Thuvankurichi**  
Forest Clearance Proposal

Sl. No.	Description	Through Existing Road	Option - I	Option - II
3	Length of Bypass	<b>0.00 Km</b>	<b>5.90 Km</b>	<b>5.50 Km</b>
4	Length of road utilising existing RoW	5.12 Km	<b>0.27 Km</b>	<b>0.83 Km</b>
5	Total Length of Proposed Alternative Option	5.12 Km	<b>6.17 Km</b>	<b>6.33 Km</b>
6	Speed	40-100kmph	100 kmph	100 kmph
7	Existing land use pattern through proposed alignment	Highly Built up and residential/commercial land	Partially Dry land and Agricultural Land	Partially Dry land and Agricultural Land
8	No. of Structures	Major Bridge - 0 Minor Bridge - 8 Box Culvert - 10 Pipe Culvert - 0 VUP/VOP - 2	Major Bridge - 0 Minor Bridge - 6 Box Culvert - 12 Pipe Culvert - 0 VUP/VOP - 2	Major Bridge - 0 Minor Bridge - 8 Box Culvert - 13 Pipe Culvert - 0 VUP/VOP - 3
		<b>Total no of Structures = 20 no.</b>	<b>Total no of Structures = 20 no.</b>	<b>Total no of Structures = 24 no.</b>
9	Proposed ROW	60.0 m	60.0 m	60.0 m
10	Existing RoW	15.0 m	15.0 m (At start and End of Bypass)	15.0 m (At start and End of Bypass)
11	Total Additional land required in Ha	23.04 ha.	36.62 ha.	36.74 ha.
12	No of Structure affected	225 no.	13 no.	18 no.
13	Proposed Improvement as per IRC SP 84 2014 four lane Manual	4 lane divided carriageway with Service road in Built up	4 lane divided carriageway	4 lane divided carriageway
14	LA & R&R Cost	27.55 Cr	10.17 Cr	10.45 Cr
15	Construction Civil cost	65.88 Cr	70.07 Cr	78.85 Cr

  
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Sl. No.	Description	Through Existing Road	Option - I	Option - II
16	Total Project Cost	<b>93.43 Cr</b>	<b>80.24 Cr</b>	<b>89.30 Cr</b>
17	Merits	<ol style="list-style-type: none"> <li>1. Utilising the existing RoW.</li> <li>2. Extent of Land acquisition less, But more buildings are getting Affected</li> </ol>	<ol style="list-style-type: none"> <li>1. Provides better connectivity and smooth passage to through traffic and trucks.</li> <li>2. Length of Alignment is comparatively less, Extent of Land Acquisition is less</li> <li>3. Project cost is comparatively less</li> </ol>	<ol style="list-style-type: none"> <li>1. 1. Provides better connectivity and smooth passage to through traffic and trucks.</li> <li>2. Utilising the existing RoW for a length of 0.83 km</li> </ol>
18	Demerits	<ol style="list-style-type: none"> <li>1. Though the extent of land to be acquired is less, cost of land and cost of structures to be acquired and demolished will be very high to achieve 60m ROW.</li> <li>2. Elevated Flyover to be constructed in Built up stretch of 1km, Leads to drastic increase in project cost</li> <li>3. Rehabilitation &amp; Resettlement Cost (R&amp;R) will be very high.</li> <li>4. likely to be affected due to growth of the town in near future.</li> <li>5. Severe health hazard to local public due to traffic congestion and likely increase of air &amp; noise</li> </ol>	<ol style="list-style-type: none"> <li>1. As the alignment passes through highly cultivated farms involves acquisition of large extent of highly fertile farm land.</li> </ol>	<ol style="list-style-type: none"> <li>1. As the alignment passes through highly cultivated farms involves acquisition of large extent of highly fertile farm land.</li> <li>2. More number of Buildings are getting Affected compared to Option-I</li> <li>3. Alignment crossing more number of Nalas/Ponds which requires more number of cross drainage structures</li> <li>4. Project Cost is more compared to option - I</li> </ol>

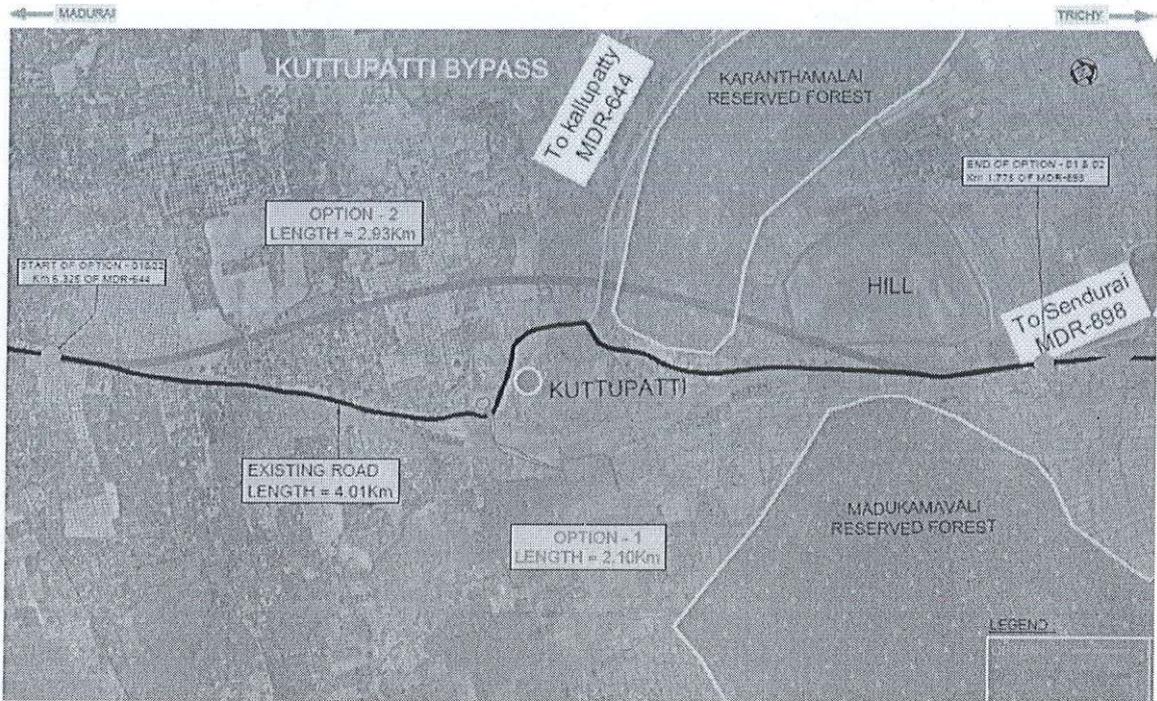
  
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Sl. No.	Description	Through Existing Road	Option - I	Option - II
		pollution.		

### Bypass for Kuttupatti:

Kuttupatti is a Village in Natham Taluk in Dindigul District. Existing Road passing through Kuttupatti has Steep Curves. Existing RoW in the village is 10-15m. Improvement of existing alignment passing through the Kuttupatti would involve acquisition and dismantling of large number of residential buildings and properties and would have a serious impact on local population and major R&R requirement, bypass is proposed between Ex. km 6.325 of MDR-644 (D.Ch: 43+700) and Ex. km 1.775 of MDR-898 (D.Ch: 45+800)

The various possible options of bypass alignments have been studied, a comparative analysis has been made with various parameters and same is furnished below.



Sl. No.	Description	Through Existing Road	Option - I	Option - II
1	Starting	Existing km 6.325 of MDR-644	Existing km 6.325 of MDR-644	Existing km 6.325 of MDR-644
2	Ending	Existing km 1.775 of MDR-898	Existing km 1.775 of MDR-898	Existing km 1.775 of MDR-898
3	Length of Bypass	<b>0.00 Km</b>	<b>2.10 Km</b>	<b>2.93 Km</b>
4	Length of road utilising existing	<b>4.01 Km</b>	<b>1.69 Km</b>	<b>0.86 Km</b>

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Sl. No.	Description	Through Existing Road	Option - I	Option - II
	RoW			
5	Total Length of Proposed Alternative Option	<b>4.01 Km</b>	<b>3.79 Km</b>	<b>3.79 Km</b>
6	Speed	40-100 kmph	100 kmph	100 kmph
7	Existing land use pattern through proposed alignment	Highly Built up and residential/commercial land	Partially Dry land and Agricultural Land	Partially Dry land and Agricultural Land
8	No. of Structures	Major Bridge - 0 Minor Bridge - 2 Box Culvert - 8 Pipe Culvert - 0 VUP/VOP - 2	Major Bridge - 0 Minor Bridge - 1 Box Culvert - 8 Pipe Culvert - 0 VUP/VOP - 2	Major Bridge - 0 Minor Bridge - 2 Box Culvert - 8 Pipe Culvert - 0 VUP/VOP - 3
		<b>Total no of Structures = 12 no.</b>	<b>Total no of Structures = 11 no.</b>	<b>Total no of Structures = 13 no.</b>
9	Proposed ROW	60.0 m	60.0 m	60.0 m
10	Existing RoW	15.0 m	15.0m (At start and End of Bypass)	15.0m (At start and End of Bypass)
11	Total Additional land required in Ha	18.04 ha	20.21 ha.	21.43 ha.
12	No of Structure affected	152 no.	4 no.	5 no.
13	Proposed Improvement as per IRC SP 84 2014 four lane Manual	4 lane divided carriageway with Service road in Built up	4 lane divided carriageway	4 lane divided carriageway
14	LA & R&R Cost	15.07 Cr	5.45 Cr	5.82 Cr
15	Construction Civil cost	43.02 Cr	39.21 Cr	43.86 Cr
16	Total Project Cost	<b>58.09 Cr</b>	<b>44.66 Cr</b>	<b>49.68 Cr</b>

  
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Sl. No.	Description	Through Existing Road	Option - I	Option - II
17	Merits	<ol style="list-style-type: none"> <li>1. Utilizing the existing RoW.</li> <li>2. Extent of Land acquisition less, But more buildings are getting Affected</li> </ol>	<ol style="list-style-type: none"> <li>1. Provides better connectivity and smooth passage to through traffic and trucks.</li> <li>2. Project cost is comparatively less</li> </ol>	<ol style="list-style-type: none"> <li>1. Provides better connectivity and smooth passage to through traffic and trucks.</li> </ol>
18	Demerits	<ol style="list-style-type: none"> <li>1. Though the extent of land to be acquired is less, cost of land and cost of structures to be acquired and demolished will be very high to achieve 60m ROW.</li> <li>2. Project Cost is high</li> <li>3. Rehabilitation &amp; Resettlement Cost (R&amp;R) will be very high.</li> <li>4. likely to be affected due to growth of the town in near future.</li> </ol>	<ol style="list-style-type: none"> <li>1. As the alignment passes through highly cultivated farms involves acquisition of large extent of highly fertile farm land.</li> </ol>	<ol style="list-style-type: none"> <li>1. Alignment is Passing through for a length of 720m. Forest Clearance is required which will delay the execution of Project.</li> <li>2. Project Cost is more compared to option - I</li> </ol>

#### **Bypass for Akkiyampatti and Palayapalam:**

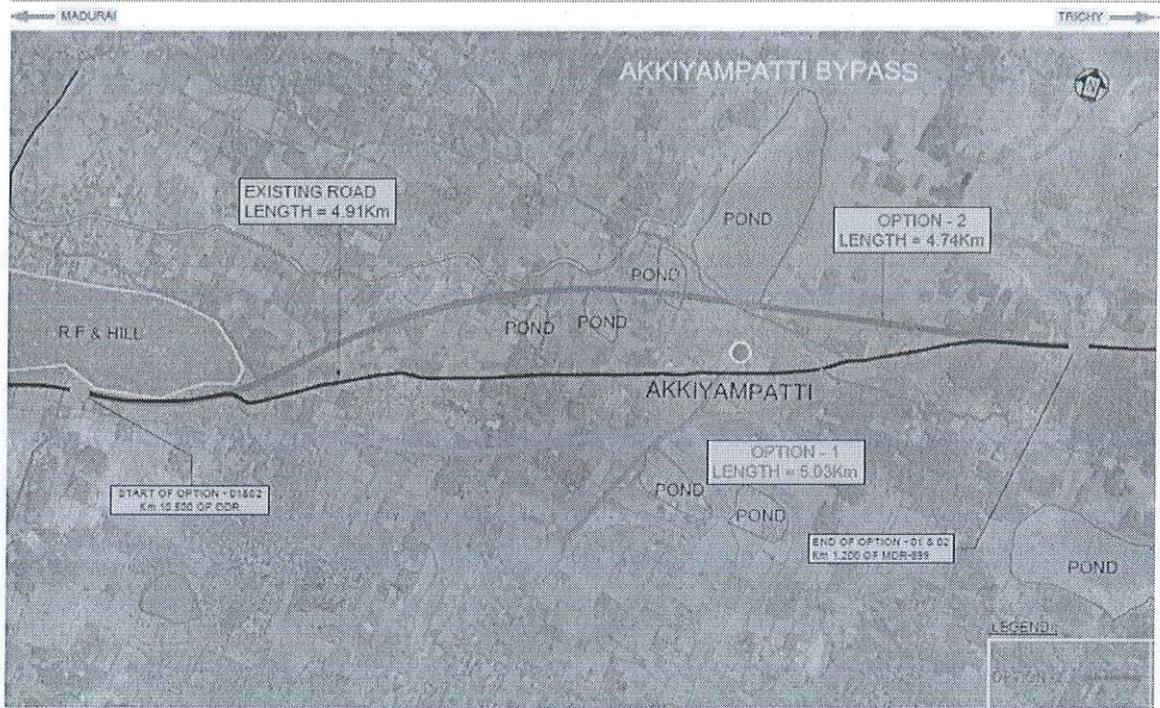
Akkiyampatti and Palayapalam are villages in Marungapuri taluk of Tiruchirappalli District. Existing Road passing through Akkiyampatti and Palayapalam villages has sharp horizontal Curves. Existing RoW in the built up is 15-20 m.

Improvement of existing alignment passing through the Akkiyampatti and Palayapalam villages would involve acquisition and dismantling of large number of residential buildings and properties and would have a serious impact on local population and major R&R requirement, bypass is proposed between Ex. km 10.500 of ODR (D.Ch: 54+820) and Ex. km 1.200 of MDR-899 (D.Ch: 59+850)

Various possible options of bypass alignments have been studied, a comparative analysis has been made with various parameters and same is furnished below.

  
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Sl. No.	Description	Through Existing Road	Option - I	Option - II
1	Starting	Existing km 10.500 of ODR	Existing km 10.500 of ODR	Existing km 10.500 of ODR
2	Ending	Existing km 1.200 of MDR-899	Existing km 1.200 of MDR-899	Existing km 1.200 of MDR-899
3	Length of Bypass	<b>0.00 Km</b>	<b>5.03 Km</b>	<b>4.74 Km</b>
4	Length of road utilising existing RoW	<b>4.91 Km</b>	<b>0.37 Km</b>	<b>0.70 Km</b>
5	Total Length of Proposed Alternative Option	<b>4.91 Km</b>	<b>5.40 Km</b>	<b>5.44 Km</b>
6	Speed	40-100 kmph	100 kmph	100 kmph
7	Existing land use pattern through proposed alignment	Highly Built up and residential/commercial land	Partially Dry land and Agricultural Land	Partially Dry land and Agricultural Land

  
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Sl. No.	Description	Through Existing Road	Option - I	Option - II
8	No. of Structures	Major Bridge - 0 Minor Bridge - 2 Box Culvert - 9 Pipe Culvert - 0 VUP - 2	Major Bridge - 0 Minor Bridge - 2 Box Culvert - 9 Pipe Culvert - 0 VUP - 2	Major Bridge - 1 Minor Bridge - 4 Box Culvert - 11 Pipe Culvert - 0 VUP - 2
		<b>Total no of Structures = 13 no.</b>	<b>Total no of Structures = 13 no.</b>	<b>Total no of Structures = 18 no.</b>
9	Proposed ROW	60.0 m	60.0 m	60.0 m
10	Existing RoW	15.0 m	15.0 m (At Start and End of Bypass)	15.0 m (At Start and End of Bypass)
11	Total Additional land required in Ha	22.10 ha.	31.85 ha.	31.59 ha.
12	No of Structure affected	237 no.	11 no.	14 no.
13	Proposed Improvement as per IRC SP 84 2014 four lane Manual	4 lane divided carriageway with Service road in Built up	4 lane divided carriageway	4 lane divided carriageway
14	LA & R&R Cost	21.96 Cr	8.83 Cr	8.91 Cr
15	Construction Civil cost	50.03 Cr	53.46 Cr	72.70 Cr
16	Total Project Cost	<b>71.99 Cr</b>	<b>62.29 Cr</b>	<b>81.61 Cr</b>
17	Merits	1. Utilising the existing RoW. 2. Extent of Land acquisition less, But more buildings are getting Affected	1. Provides better connectivity and smooth passage to through traffic and trucks. 2. Length of Alignment is comparatively less, Extent of Land Acquisition is less 3. Project cost is comparatively less	1. Provides better connectivity and smooth passage to through traffic and trucks.

  
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Sl. No.	Description	Through Existing Road	Option - I	Option - II
18	Demerits	<p>1. Though the extent of land to be acquired is less, cost of land and cost of structures to be acquired and demolished will be very high to achieve 60m ROW.</p> <p>2. Project Cost is high</p> <p>3. Rehabilitation &amp; Resettlement Cost (R&amp;R) will be very high.</p> <p>4. likely to be affected due to growth of the town in near future.</p> <p>5. Severe health hazard to local public due to traffic congestion and likely increase of air &amp; noise pollution.</p>	<p>1. As the alignment passes through highly cultivated farms involves acquisition of large extent of highly fertile farm land.</p>	<p>1. Alignment is Crossing Pond locations which require Cross Drainage Structures. Also Required Clearance from Irrigation Department leads to delay in execution of Project</p> <p>2. Alignment crossing more number of Nalas/Ponds which requires more number of cross drainage structures</p> <p>3. Project Cost is more compared to option - I</p>

  
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