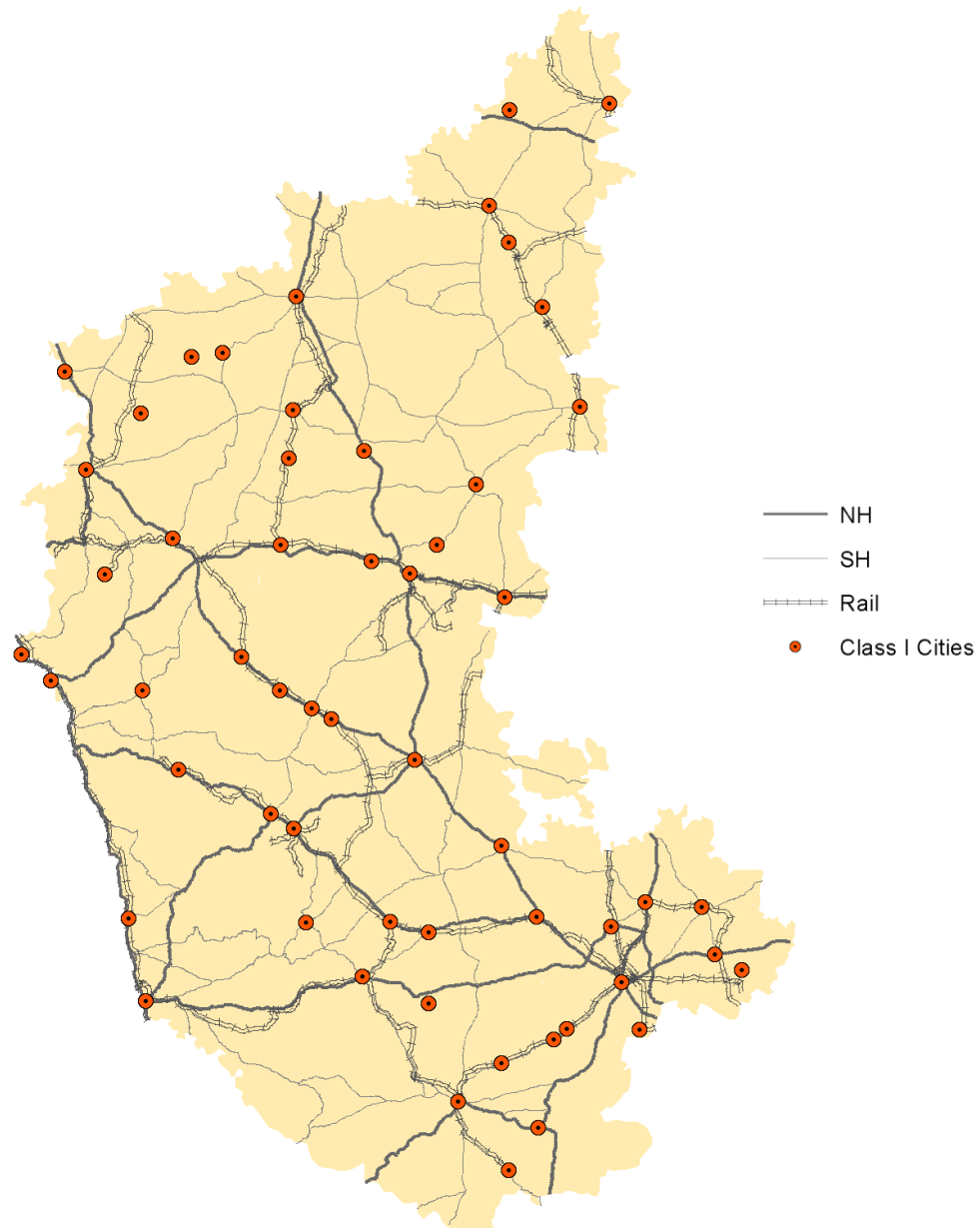


# Decision making for up-gradation of transport infrastructure

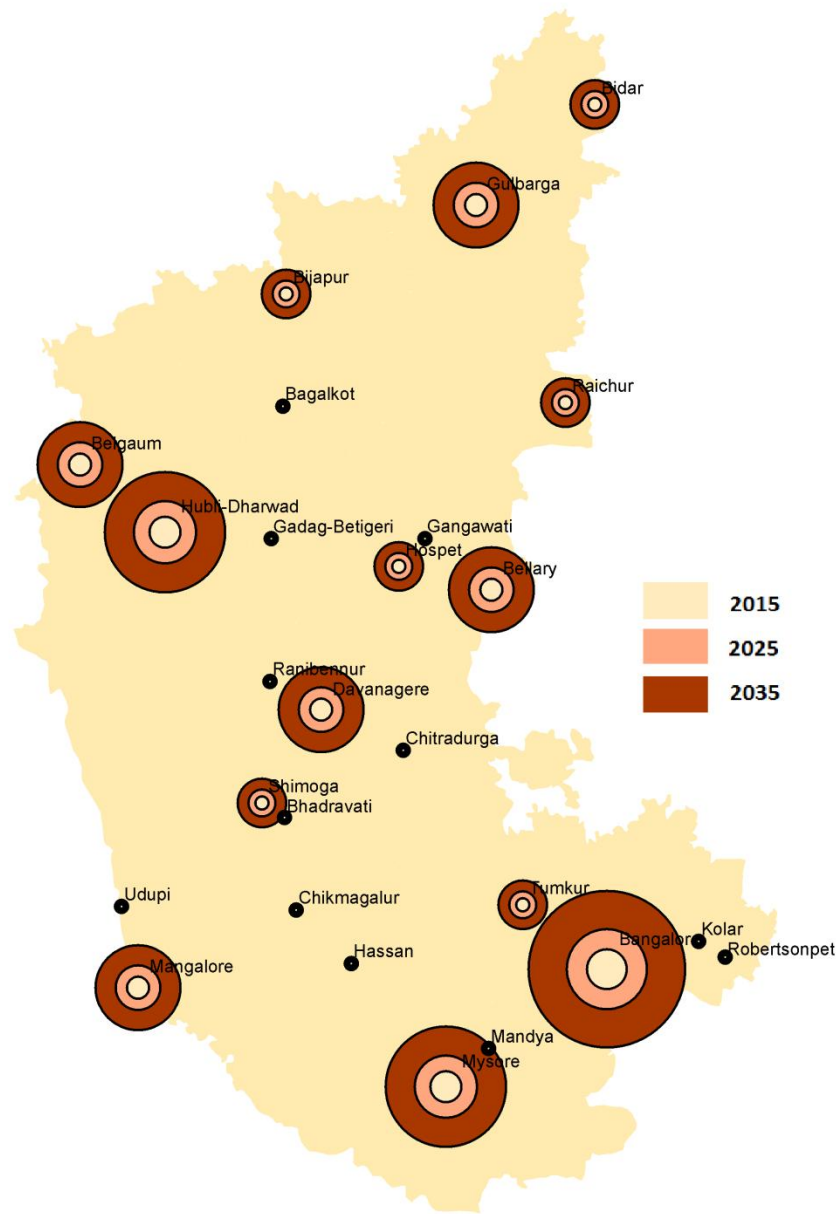
Focus on Karnataka

Center for Study of Science, Technology and Policy, Bangalore

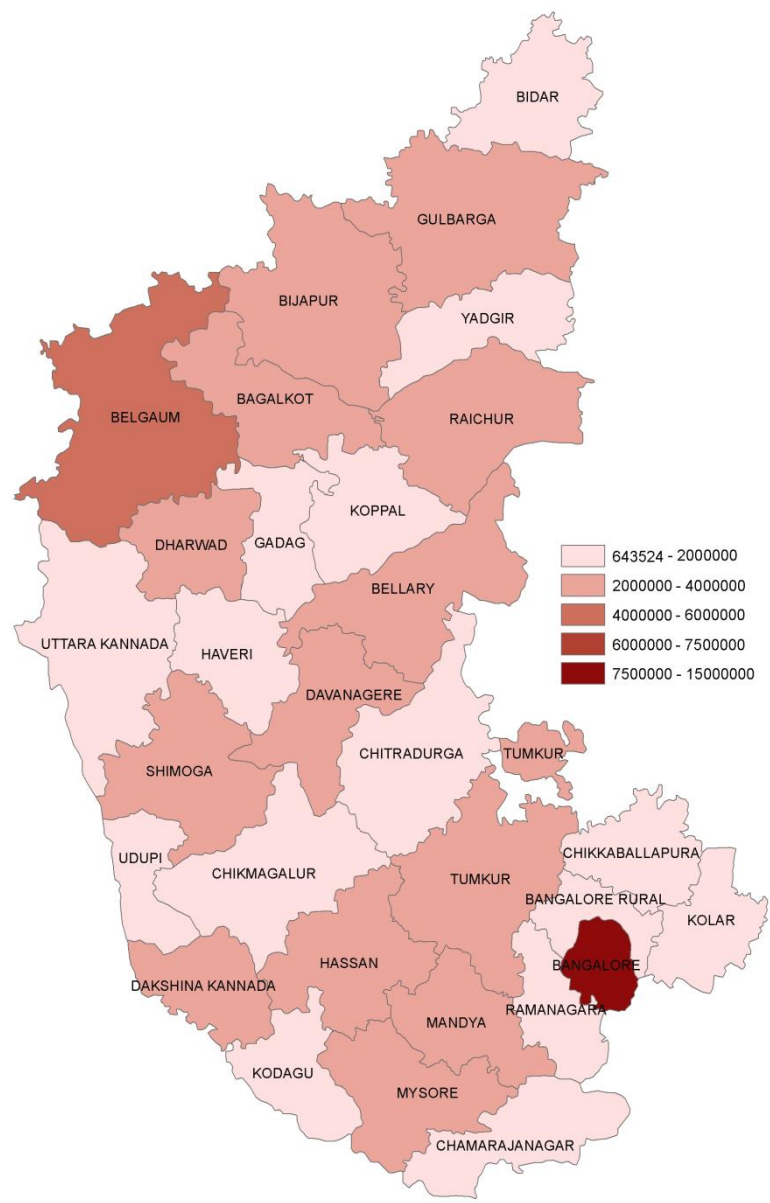
# Transport Network (2005)



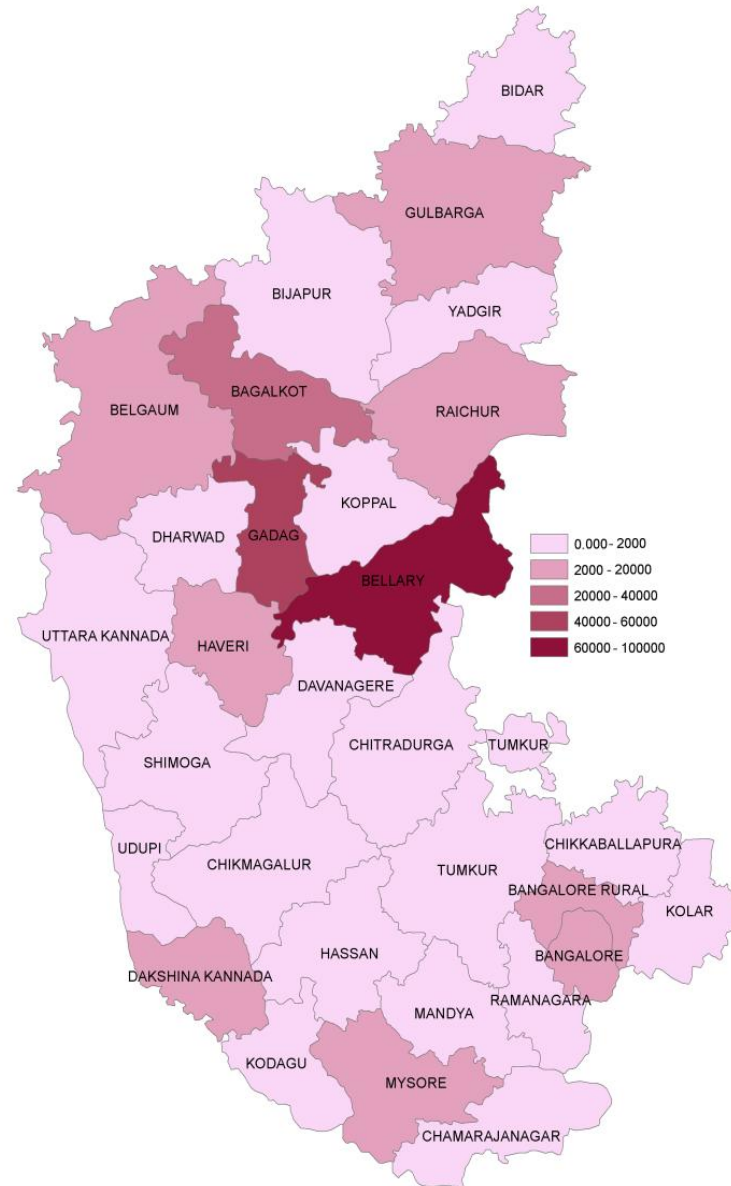
# Cities Population Projection



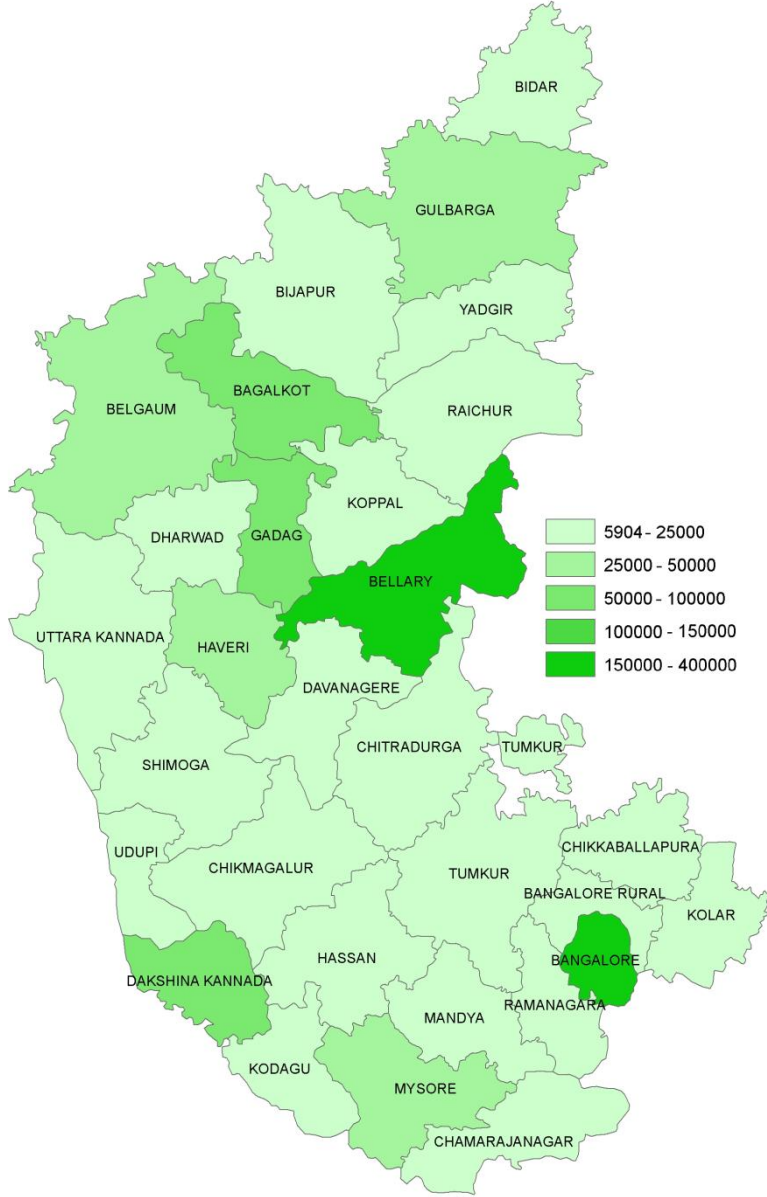
# 2025: Projected Population



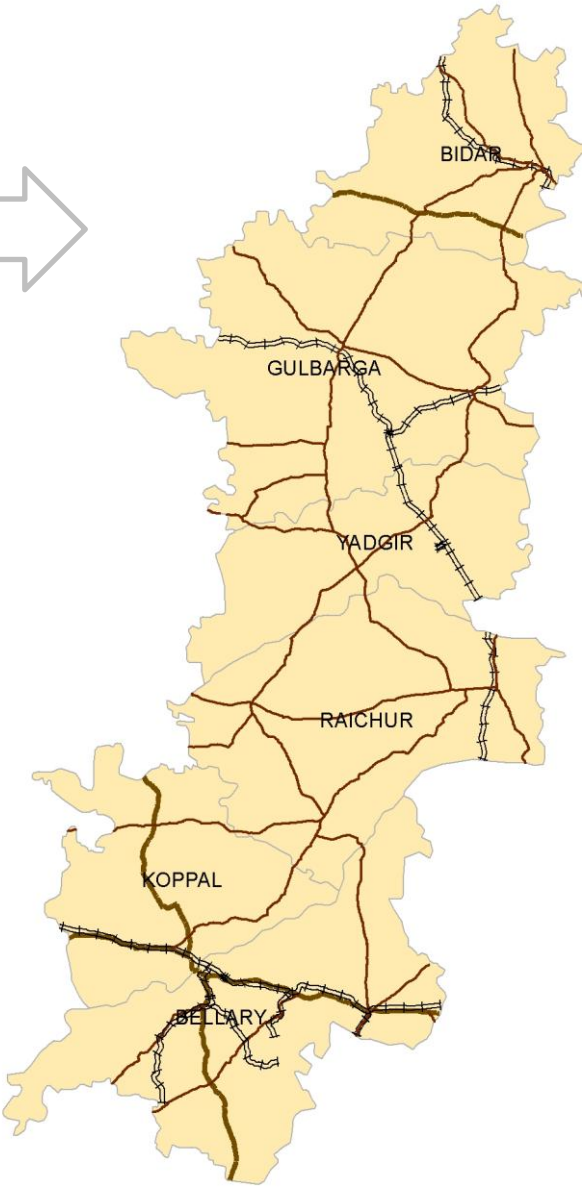
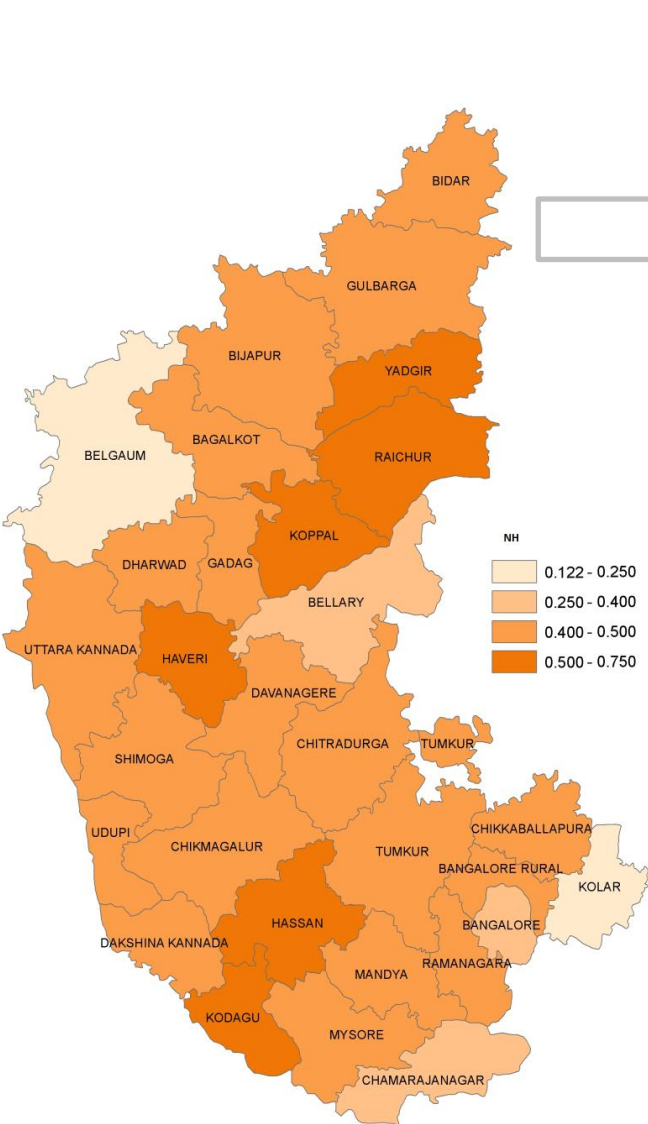
# Proposed Investments (crores)



# 2025: Projected GDDP - Crores



# Districts prioritized for transport improvement



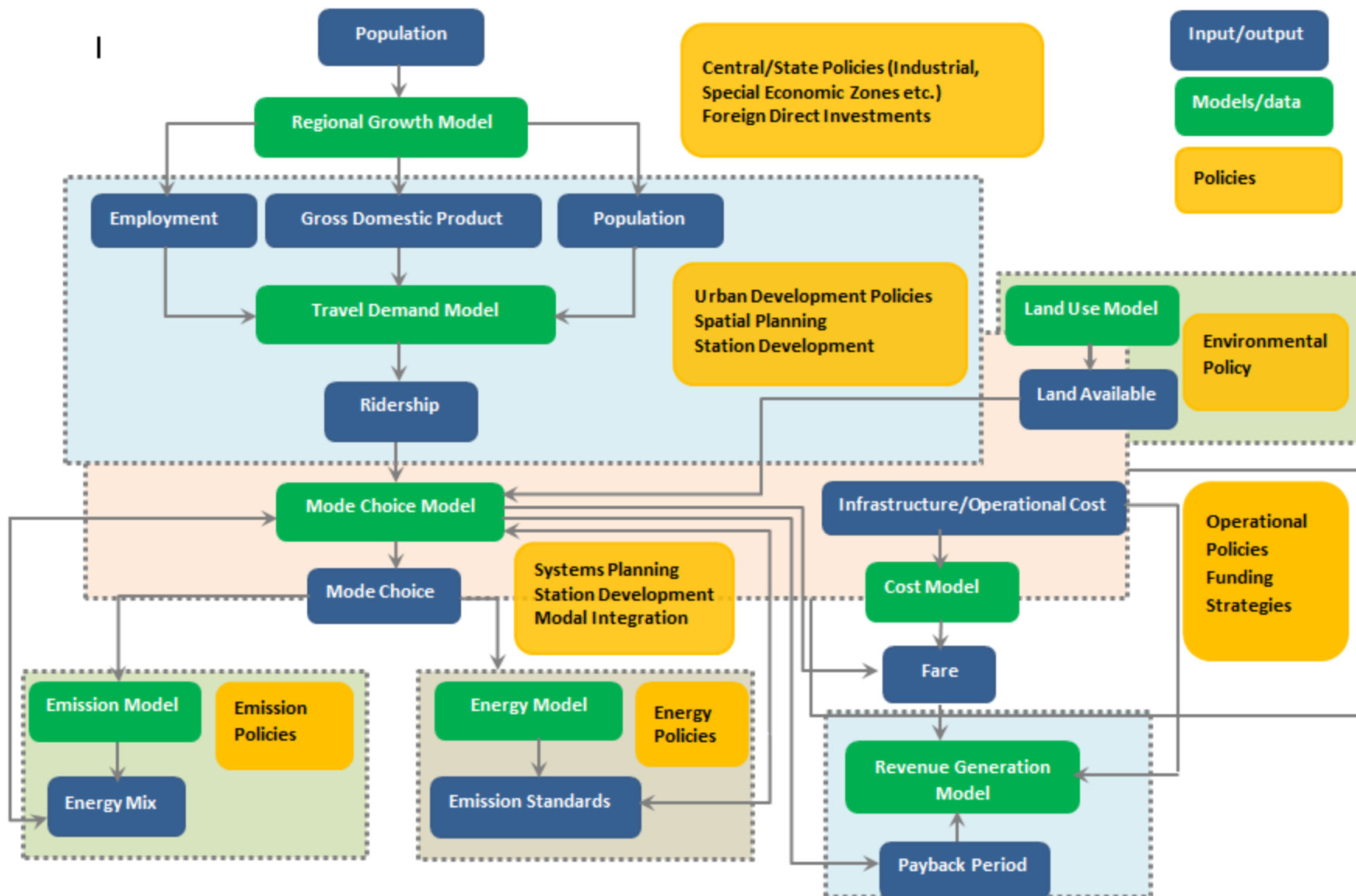
District	NHRAIL
Kodagu	0.637179
Hassan	0.594786
Raichur	0.572824
Yadgir	0.563759
Koppal	0.550383
Haveri	0.522146
Dakshina	
Kannada	0.498834
Chitradurga	0.482929
Mysore	0.475775
Davengere	0.475619
Gulbarga	0.475291
Bijapur	0.47071
Bangalore	
Rural	0.469185
Chikmagalur	0.466269
Bidar	0.465889
Shimoga	0.463994

This framework can be extended to-

- Intra-city public transit options
- Assessment of multimodal system network alternatives- both regional as well as city wide.



# Models



## Transport Infrastructure Options



S.No.	Simulation Name	Transport Mode	Created On	Action
1	EXP_BEL_RAI_GUL_50	Express way	2012-10-15 11:34:04 UTC	<a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a>
2	HSR_BEL_RAI_GUL_50	HSR	2012-10-15 11:32:53 UTC	<a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a>
3	EXP_BEL_GUL_30	Express way	2012-10-15 11:31:34 UTC	<a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a>
4	HSR_BEL_GUL_30	HSR	2012-10-15 11:30:11 UTC	<a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a>

[Create new Simulation](#)

## Transport Infrastructure Options



### Simulation Data:

Simulation name : HSR\_BEL\_RAI\_GUL

Select mode:

☒ HSR ☐ Express Way

Catchment Area Radius (in km)

16.0

Capacity (in %)

50.0

### Land Usage Controls:

☒ Show/Hide Land Use layer

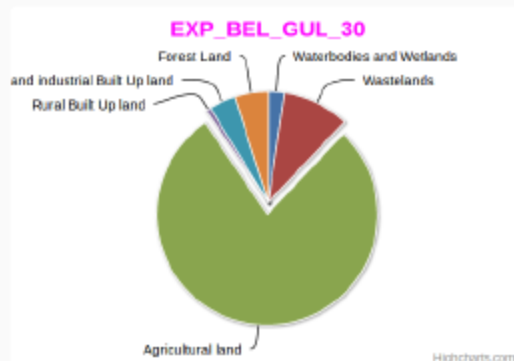
☒ Edit Path

## Transport Infrastructure Options

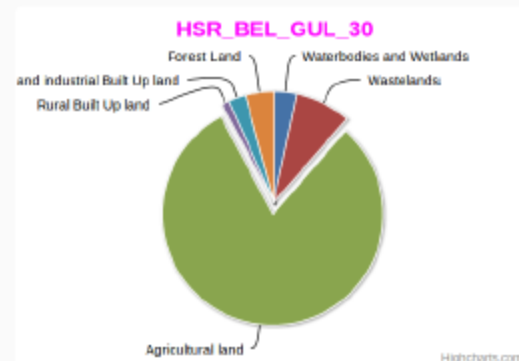


### Compare Land Usage:

Scenario I: EXP\_BEL\_GUL\_30



Scenario II: HSR\_BEL\_GUL\_30



Land Type	Usage in hectares S - I	Usage in hectares S - II
Waterbodies and Wetlands	39.35	28.65
Wastelands	163.15	70.47
Agricultural land	1314.9	700.54
Rural Built Up land	11.57	9.59
Urban and industrial Built Up land	65.3	21.86
Forest Land	82.28	35.94

# DT-Transport: Screen 4

## Transport Infrastructure Options

Compare Decision Parameters:

Scenario I: 
Scenario II:

Parameter	EXP_BEL_GUL_30	HSR_BEL_GUL_30
Improve mobility		
Population Served ( # of people )	1203220	2161800
Time Savings (over no build) ( total passenger hrs )	58631.1	542629
Emissions		
GHG Emissions-tail pipe ( g CO2/km )	870	66.957
Emissions-during vehicle manufacturing and operation ( g CO2/km )	162.609	47.826
Total Emissions ( g CO2/km )	1032.61	114.783
Emissions ( g CO2 per passenger km )	21.844	1.201
Energy needs		
Energy Needs For Vehicle Manufacturing and Infrastructure ( KJ/VKT )	343.75	1750
Energy Needs For Operating ( KJ/VKT )	3000	562500
Total Energy Need ( KJ/VKT )	25906.2	564250
Total Energy Need per Passenger ( KJ/passenger km )	452.298	5906.22
Land Requirement and Cost		
Route Land Requirement ( hectares )	5158.92	854.74
Passengers ( per hr per hectare )	1.898	13.846
Land Cost ( crores/hectare )	0.6	0.6
Total Land Cost ( crores )	3095.35	512.844
Cost		
Economic Cost ( Rs/passenger km )	144.925	0.34
Capital Cost ( crores )	4467.13	86670

# DT-Transport: Screen 5...

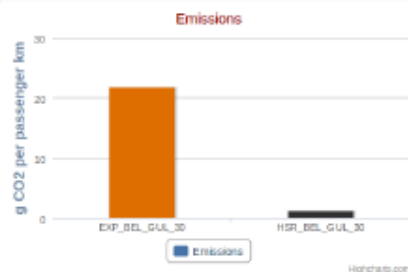
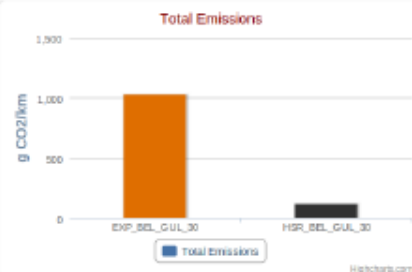
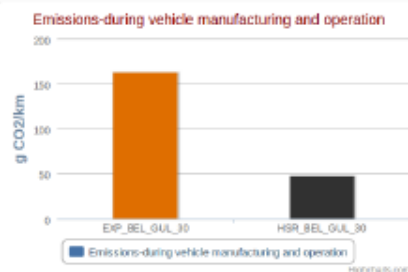
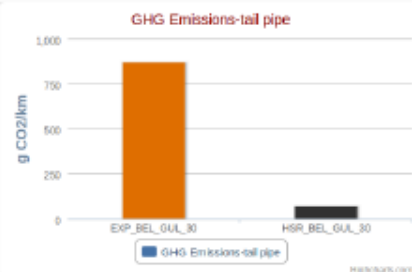
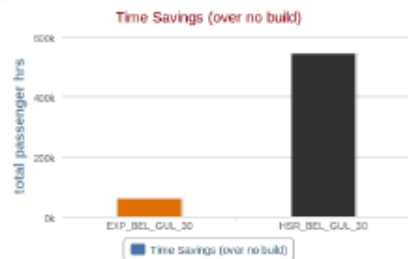
## Transport Infrastructure Options



Compare Decision Parameters:

Scenario I: EXP\_BEL\_GUL\_30

Scenario II: HSR\_BEL\_GUL\_30



Energy Needs For Vehicle Manufacturing and Infrastructure

Energy Needs For Operating

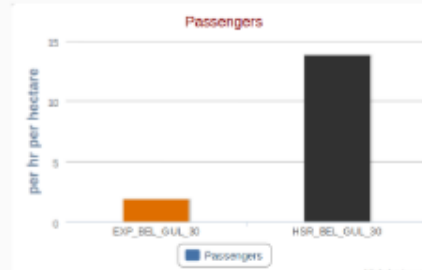
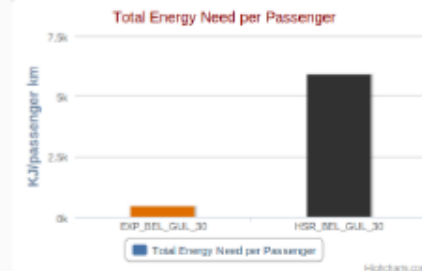
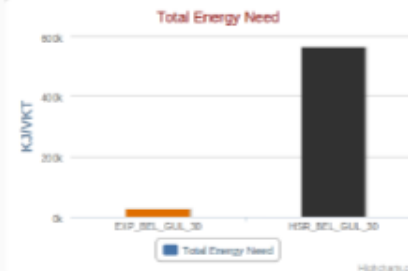
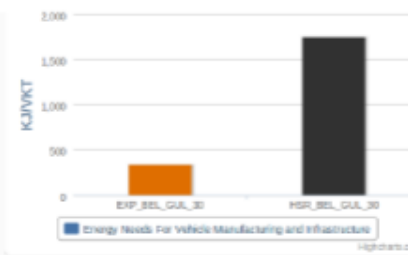
## Transport Infrastructure Options



Compare Decision Parameters:

Scenario I: EXP\_BEL\_GUL\_30

Scenario II: HSR\_BEL\_GUL\_30



Land Cost

Total Land Cost

## Transport Infrastructure Options

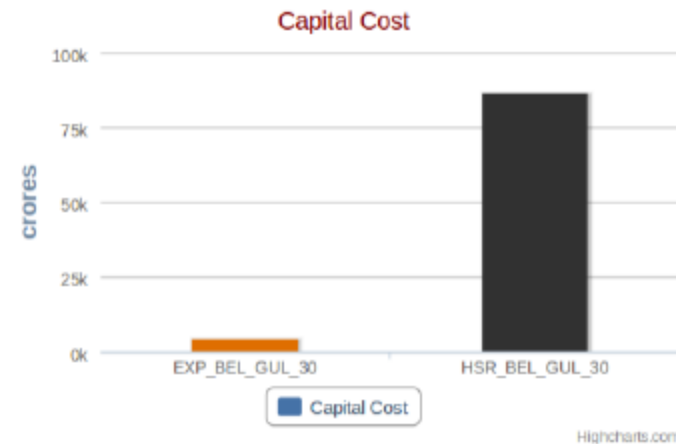
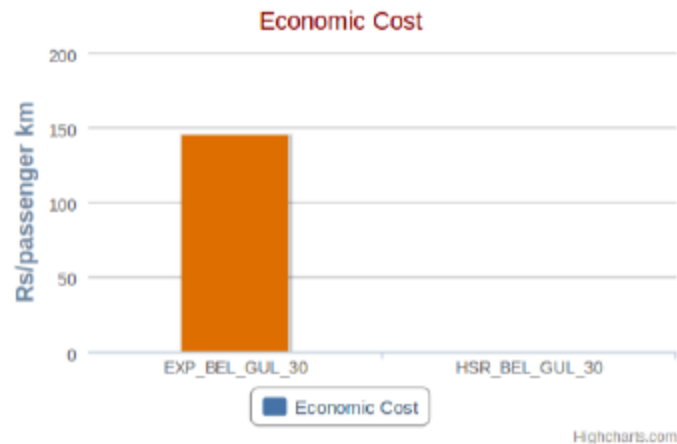
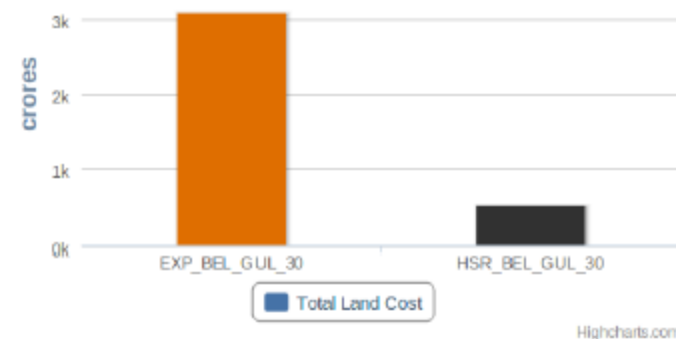


Compare Decision Parameters:

Scenario I:



Scenario II:



Thank You