

## **IMPROVING THE SAFETY OF MEXICO'S ROAD NETWORK**

### **THE PROBLEM**

The Secretaría de Comunicaciones y Transportes (SCT) in Mexico are responsible for the Federal jurisdiction road network and are committed to improving the safety of the road network.

### **THE SOLUTION**

As part of one of the largest iRAP assessments in the world, over 65,000km of road have now been assessed by SCT in Mexico include before and after star ratings across the whole country.

The assessment included the carrying out of video-based road surveys integrated with asset and pavement management surveys, star rating the safety of the network to assess the likelihood and severity of crashes, producing a Safer Roads Investment Plan to allocate resources on countermeasures and “performance tracking” to assess changes in the star rating performance of the roads over time.

The SCT, together with local delivery partners SEMIC and IMT (Mexico Institute of Transport) has targeted 31,000km of national non-toll roads and categorised the iRAP countermeasures as maintenance related (existing or new activities such as delineation, median flexible posts, central hatching, sight distance and roadside barriers); minor works that require planning (e.g. shoulder rumble strips, signalized intersections and street lighting) and more complicated major projects requiring detailed planning and/or land acquisition (e.g. duplication, protected turning lanes, sideslope improvements).

### **THE OUTCOME**

The initial targeting of \$250 million of maintenance and minor project investment at the national level has decreased the one-star or two star rated road length by an estimated 18% (from 58% to 40%). These simple low-cost changes will save an estimated 68,063 lives over the next 20 years.

Nationwide training of SCT engineers across 32 states has been completed to support the use of the iRAP Mexico results and the implementation of the life-saving treatments. Larger scale recommendations are also being planned to reach the ultimate target of a minimum 3-star national road network.


After the inspection and analysis, a series of investment plan options were produced for the roads that make up the 31,000km non-toll road study network. The countermeasures were divided into 4 groups:

- a) Actions that SCT usually undertakes within its maintenance programme
- b) Actions identified during iRAP evaluation and not included within the SCT's 2012 maintenance programmes

- c) Specific countermeasures that require design and planning elements as part of project development.
- d) The most complex countermeasures that required the establishment of special projects, land acquisition and the consensus of affected stakeholders.

Detailed analysis using the countermeasure categories above was undertaken by the project team to identify the expected contribution to SCT plans to reduce the 1 and 2 star roads on Mexico's network.

The following table summarizes the impact of the investments on non-toll roads:




SCT

Investment plan and application effects

Investment Road Impact Simulation on non-toll roads (31,008.98 km)

Stars	Original (2012)	If the A countermeasures are implemented	Δ	If the C countermeasures are implemented	Δ	If the A + C countermeasures are implemented	Δ
5	3%	4%	1%	5%	2%	5%	2%
4	9%	13%	4%	15%	6%	15%	6%
3	30%	39%	9%	40%	10%	40%	10%
2	35%	29%	-6%	28%	-7%	28%	-7%
1	23%	15%	-8%	12%	-11%	12%	-11%
Investment millions USD		\$44		\$251		\$295	



SCT		Grouping of measures to improve road safety					
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## Group A



Improve delineation



Flexi-post in the central median



Central hatching

## Group B



Roadside barriers  
(passenger side)



Sight distance (obstruction  
removal)



Roadside barriers (both sides)



## Group C



Shoulder rumble strips



Signalise intersection  
(3-leg)



Street lighting  
(intersection)



## Group D



Duplication with median  
barrier



Protected right turn  
lane (unsignalised 3  
leg)



Road side  
improvements



Sideslope  
improvement - driver  
side



The road safety upgrades and application of the iRAP star ratings and investment plans has been initiated and led by the technical services directorate within SCT. Toll road operators have also immediately implemented the high-return interventions and generated a more than 50% reduction in road trauma on one of the concession roads in the country.

The allocation of funding for the interventions is now linked to the iRAP analysis and is being extended to further roads under SCT control. Ongoing monitoring of the before and after star ratings will be undertaken to measure the success of the SCT investment and ensure good performance tracking across all states.

**FURTHER INFORMATION:**

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