

A step change in transport funding

Infrastructure Policy Priorities for
New Zealand



nzcid members

leaders in infrastructure development

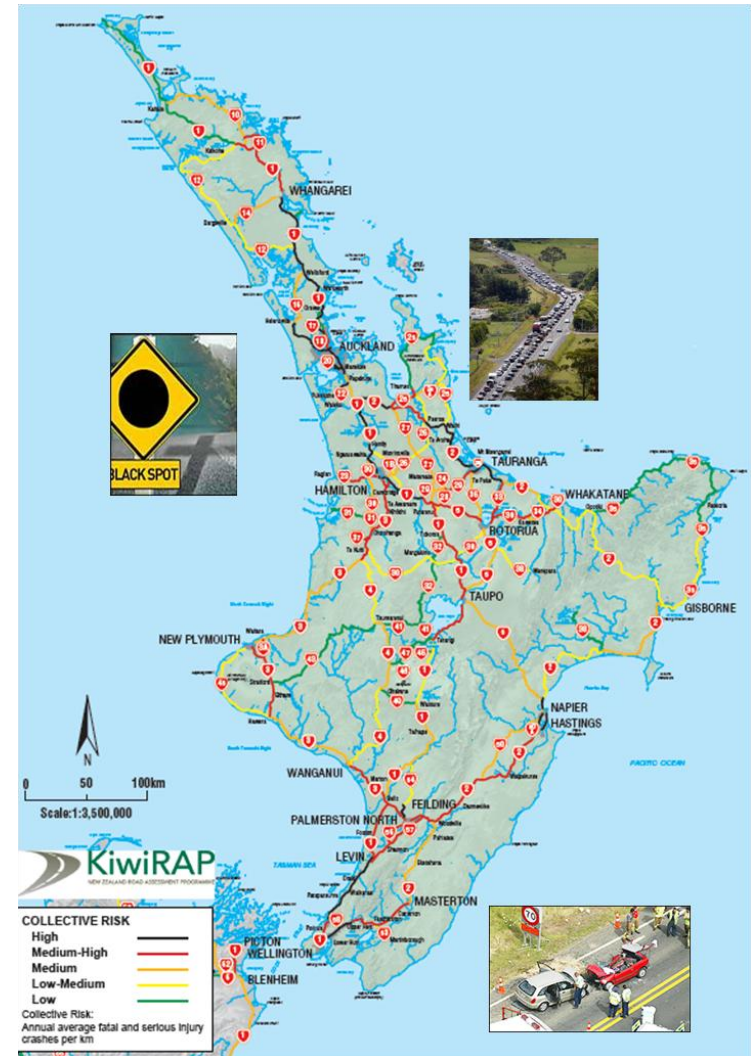


Overview...

- The problem
- Transport investment – international comparisons
- Funding gap
- Solutions:
 - Debt financing: Infrastructure Bonds, PPPs
 - Tax Increment Financing – TIF
 - Asset sales
 - Network access charge proposal

NZ Transport

- Congestion key issue
 - Auckland's congestion worse than much larger Australian cities
- Underdeveloped public transport networks
- Freight load expected to double over the next two decades
- High inbound & outbound shipping costs
- Poor safety margins across state highway network
 - Yet tourism No 1 export earner



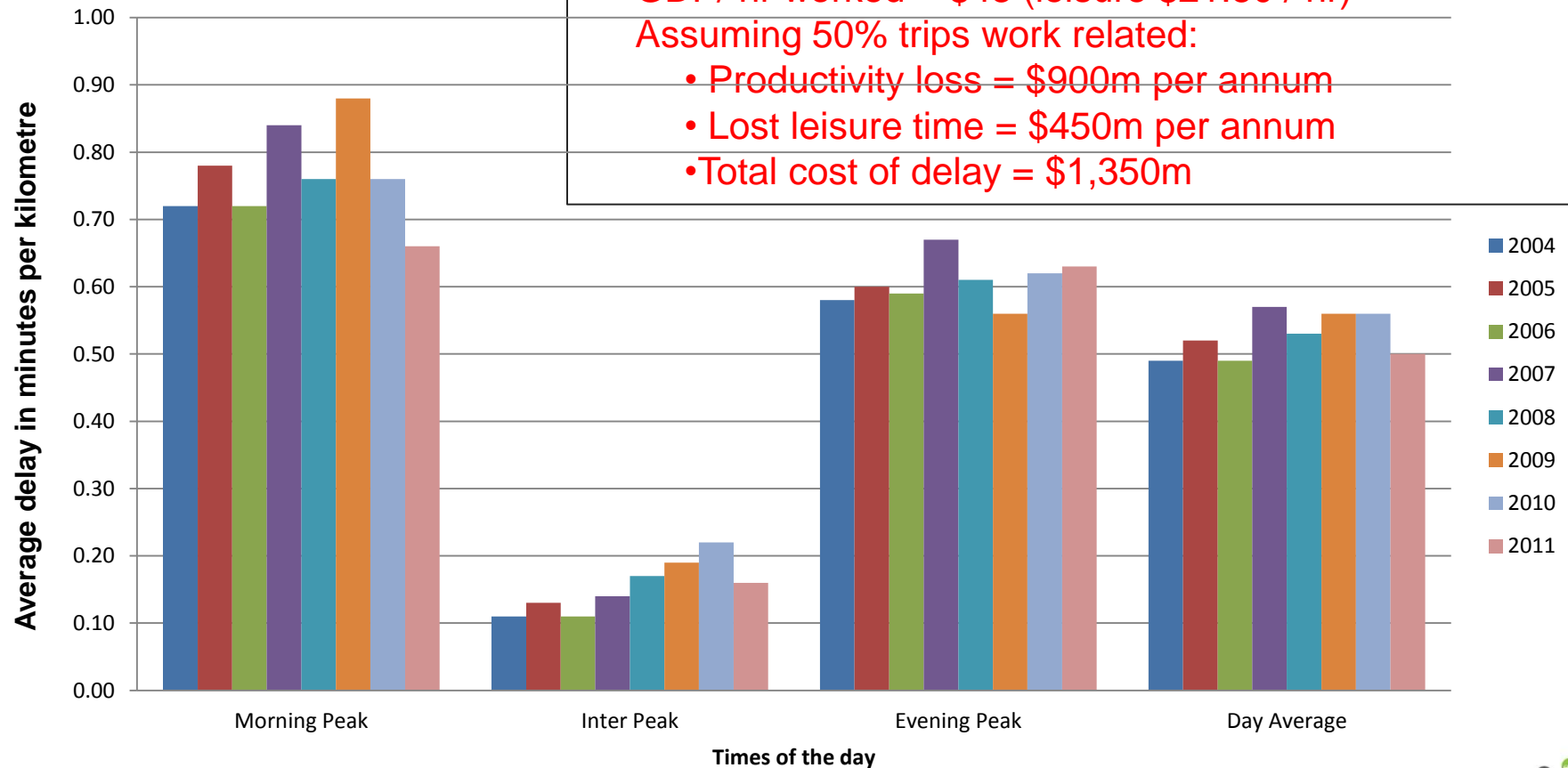
Productivity drag: average minutes delay per kilometre in Auckland

42 million hours per annum of lost productive time on Auckland's motorways and state highways...

GDP/ hr worked = \$43 (leisure \$21.50 / hr)

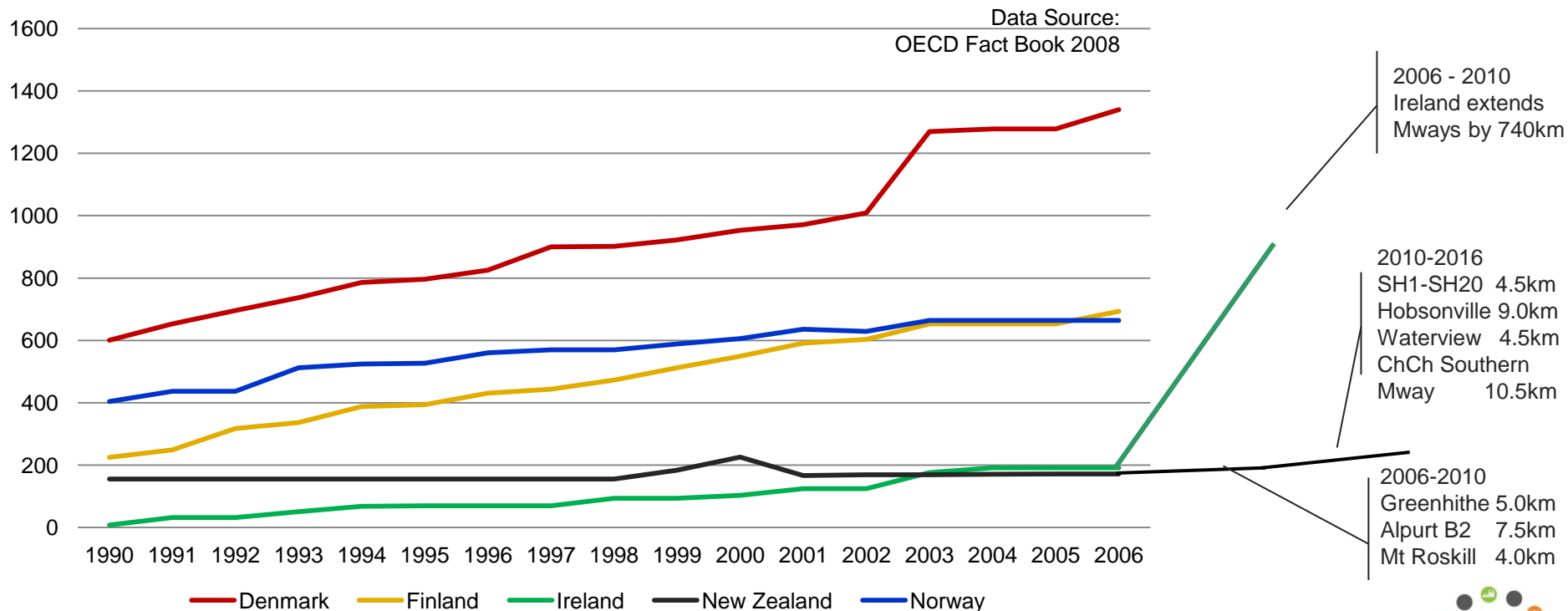
Assuming 50% trips work related:

- Productivity loss = \$900m per annum
- Lost leisure time = \$450m per annum
- Total cost of delay = \$1,350m



NZ is investing at a much slower pace than comparative nations...

Length of Motorway Network Comparative OECD Nations 1990 - 2006



While Australia reaps the rewards from capital investment...

The economic contribution of Sydney's toll roads to NSW and Australia

Ernst Young calculated the total economic contribution of Sydney's toll road network to the NSW economy was a net economic present value of \$22.7 billion...

Ernst Young,
July 2008



Toll roads around the world...

- Bangladesh, China, India, Indonesia, Israel, Japan, Malaysia, Pakistan, Philippines, Singapore, Taiwan, Thailand, United Arab Emirates, South Africa, Morocco, Croatia, France, Italy, Ireland, The Netherlands, Norway, Poland, Portugal, Russia, Slovenia, Spain, Sweden, Switzerland, United Kingdom, North and South America, Brazil, Canada, Colombia, Ecuador, Mexico, Panama, United States, Australia, New Zealand (sort of)

Draft Auckland Transport Priorities



Funding Gap	\$ million
Puhoi Wellsford	2,300
Northern Busway Extension	600
Waitemata Harbour Crossing	5,300
City Rail Link	2,200
Avondale Southdown Rail	1,000
South Western East Tamaki Corridor	1,250
AMETI	1,500
3 rd Freight Line Papakura to Port	700
Airport road access & rail loop	1,890
Improved port access	1,000
City Centre Transport Improvements	520
Arterial Upgrades for freight and public transport	2,000
State highway pinch points	1,200
Busway to Botany Flat Bush	90
Rail to Albany	6,000
Total	27,550

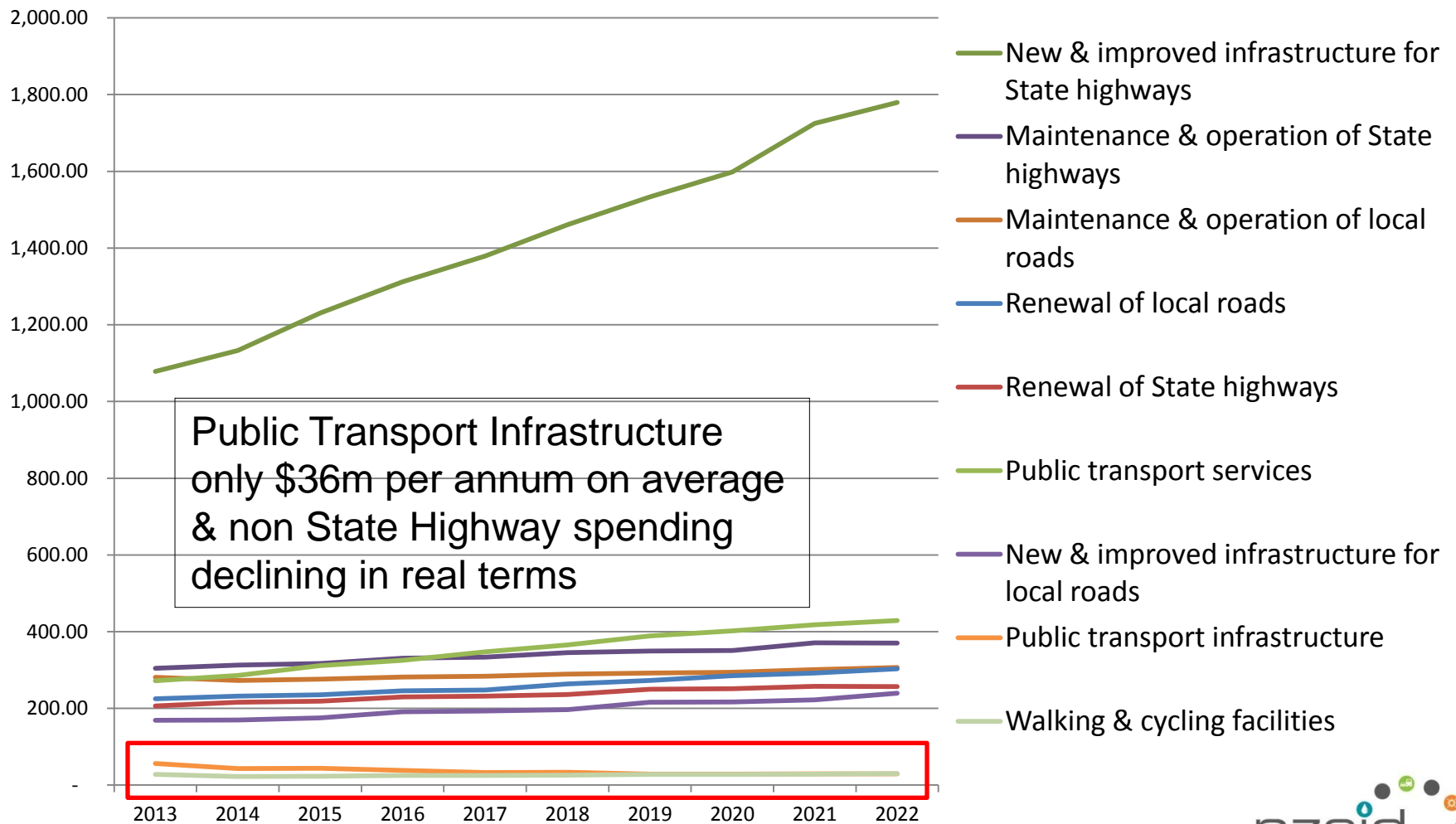
NZCID supports four signature transport projects for Auckland by 2030:

Project	Funding gap \$m
Western Ring Route by 2015	0
Inner City Rail Loop by 2020 (subject to viable transport land development plan)	\$2,200
AMETI and SH20 to 1 east west connection by 2025	\$2,600
Additional Waitemata Harbour Crossing by 2030 (subject to viable transport land development plan)	\$5,200
Total funding deficit	\$10,000

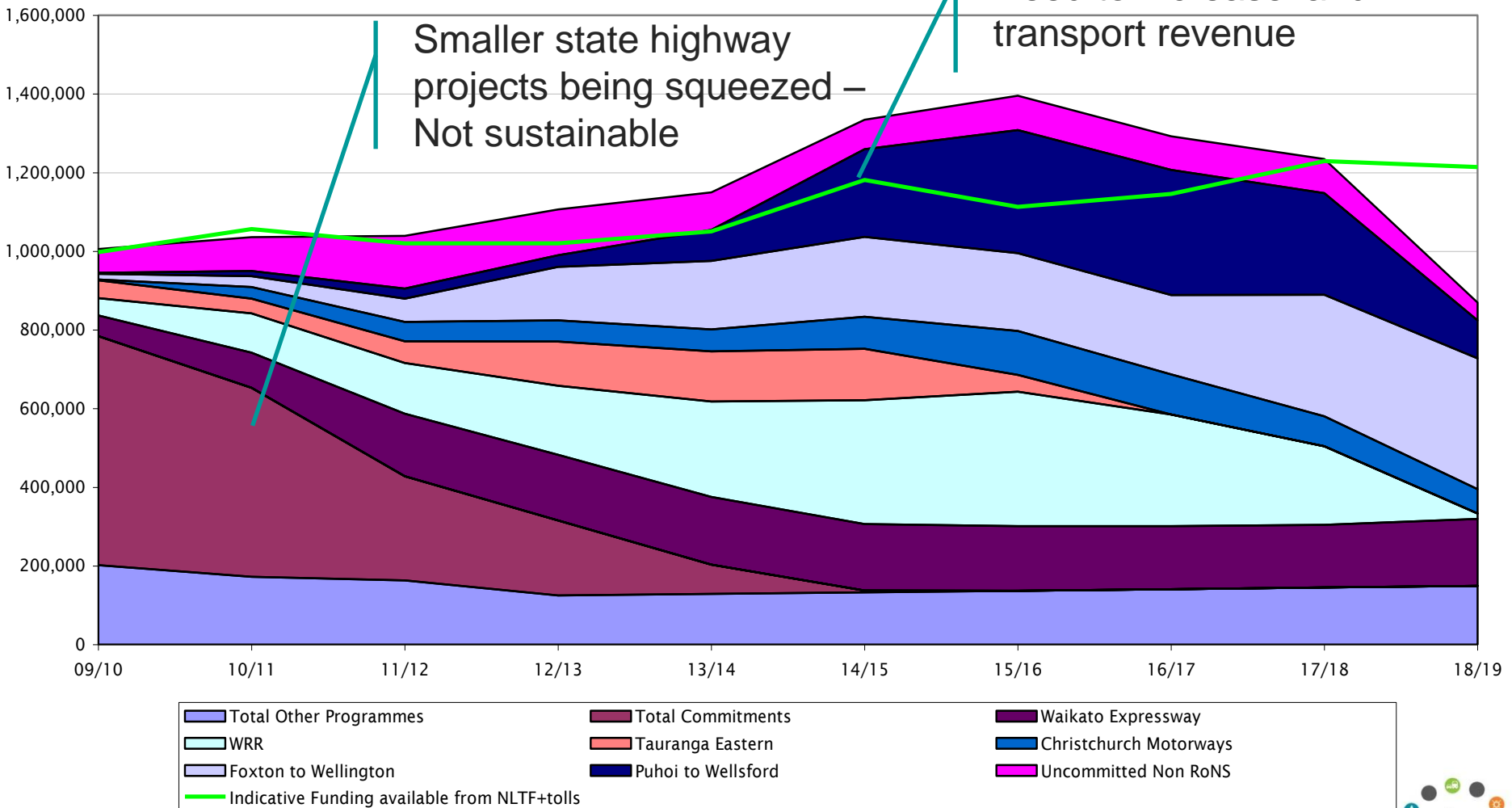
Borrowed over 30 years @ 6% = annual repayments of \$700m per annum

Circa: 50% increase in council rates, or 40 cents regional fuel tax

GPS Transport Funding 2012 -2022



RONs consume most new capital spend - critical need to increase transport funding



Source: NZTA

Financing options...

- Council or government debt
- Infrastructure Bonds
- Public Private Partnerships
- All forms of debt
- Allow time payment
- Intergenerational equity
- But...
- Where does the money come from to repay the debt?



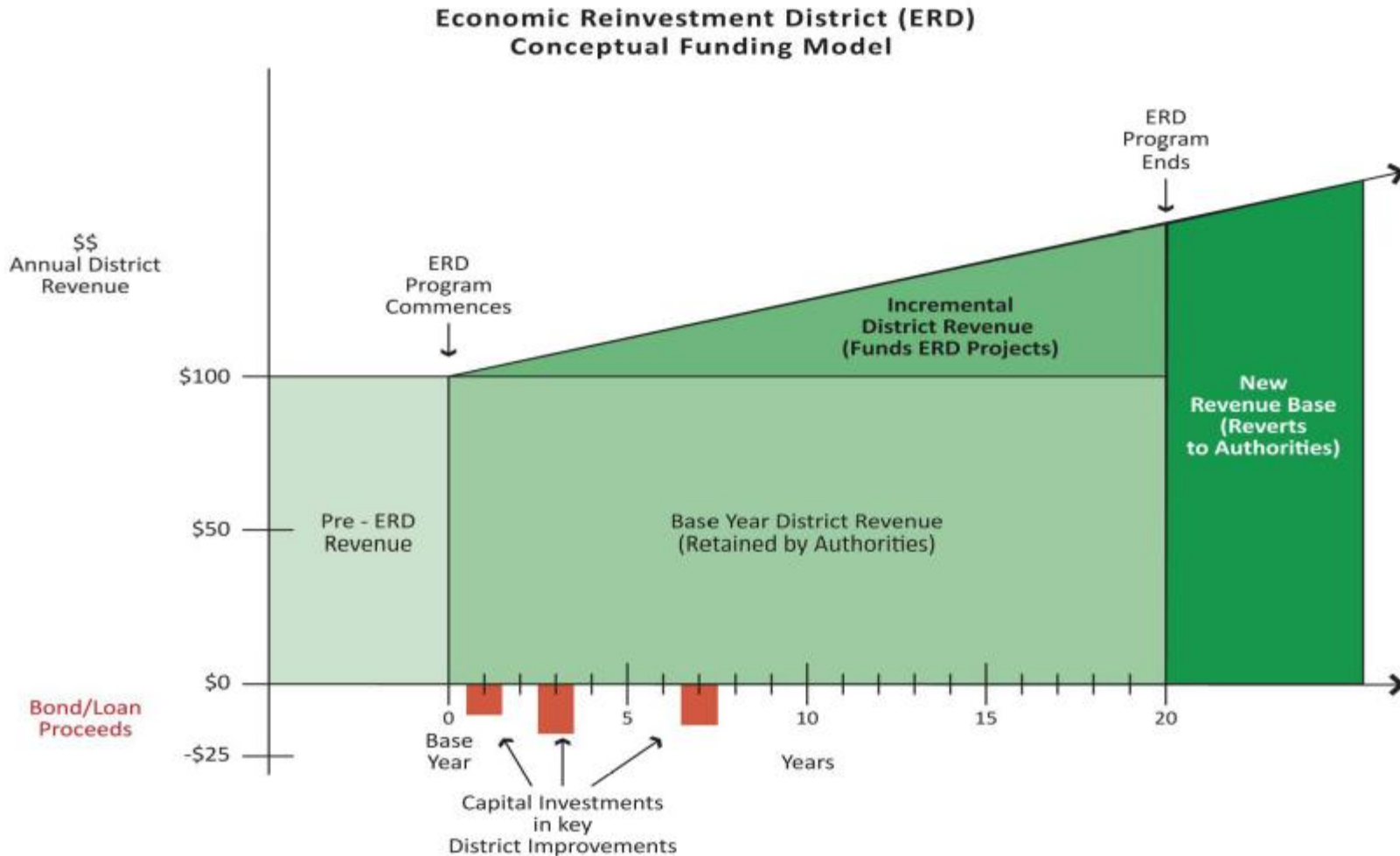
Revenue options:

- Increase rates – up to 50%
- Regional Fuel Tax – up to 50 cents per litre
- National fuel tax incl RUC – 16 cents per litre
- Parking Charges
- Tax Increment Finance (TIF)
- Asset Sales
- Network tolls



Partial funding
contribution

TIF: Tax Increment Financing



Source: Sinclair Knight Mertz

Asset sales

- ACIL manages total investment assets currently worth \$1.195 billion (\$881 million net)
- Returns for Port of Auckland:

Ports of Auckland Parent	2010	2011
Return on Assets	6.5%	3.1%
Return on Equity	11.8%	5.7%

- Potentially \$400m assuming 49% partial sell down?
- Retain land and sell port operations?



Kota Jaya, under a Hong Kong flag) in the Port of Auckland,

NZCID proposal: Network access charge - Auckland

- Revenue:
 - 915,000 cars / day join the motorway system
 - “Average” \$2.00 per car = \$1.8m / day
 - = \$ 668 m per annum
 - NPV \$668m per annum over 30 years @ 6% = \$9 billion
- Equivalent to... 50% increase in rates or 40 cents per litre regional fuel tax
- \$9 billion supplemented by other revenue streams could fund major transport projects
- Funding source for PPPs etc



Technology

- Number plate recognition
- \$6.00 daily cap
- Cost of collection 20%
- Potential for real time pricing



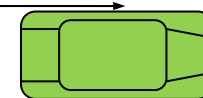
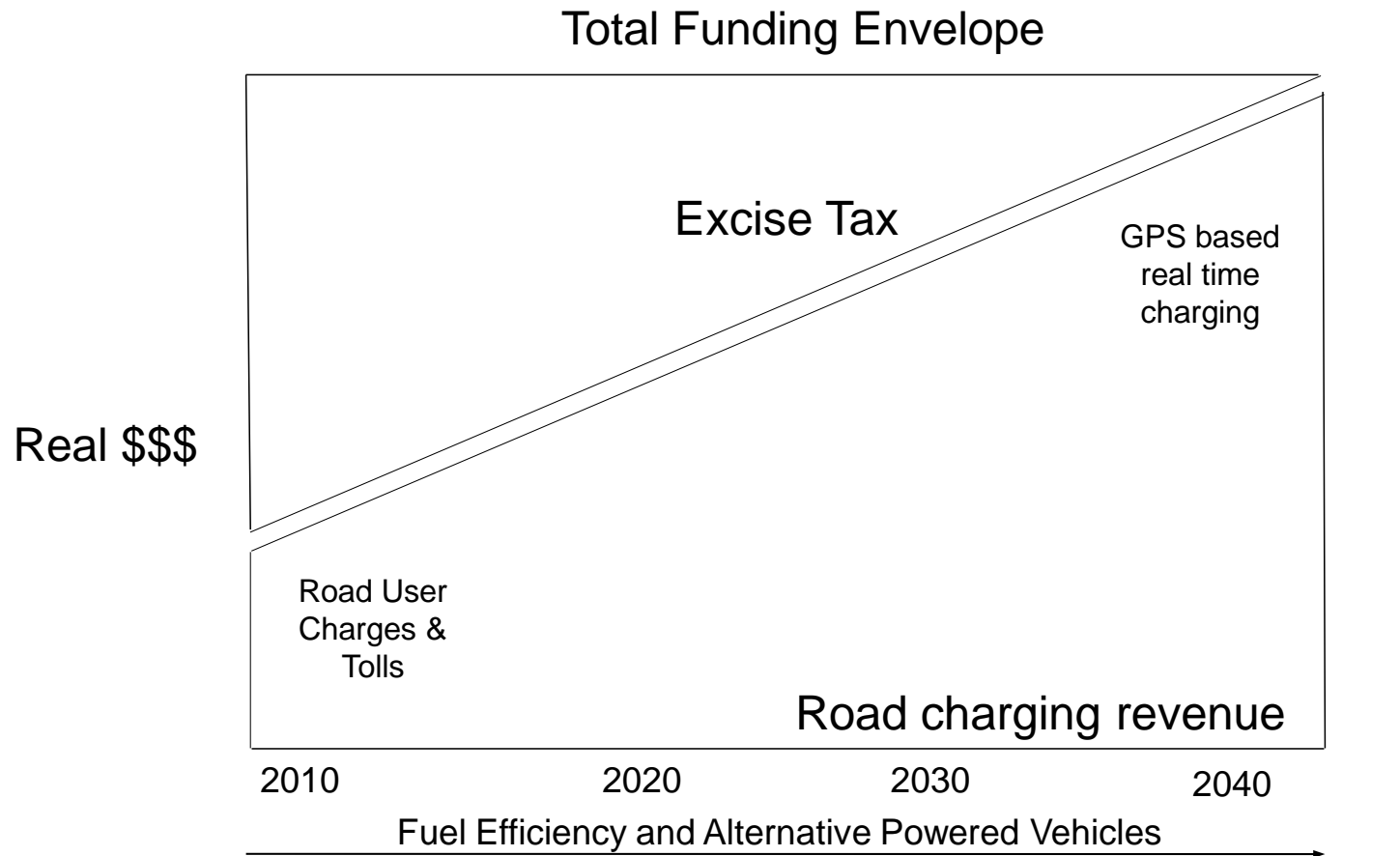
Network Pricing Model

Variables Assumes Administration costs at: 20%

Light Vehicle	Heavy Vehicle	Average Annual Daily Traffic	Traffic Growth Rate						Discount Rate	Net Present Value at Various Toll Rates Over 30 Year Term				
										\$m				
			Years 1-5	Years 6-10	Years 11-15	Years 16-20	Years 21-25	Years 26-30		6%	\$ 1.00	\$ 2.00	\$ 3.00	\$ 4.00
23,750	1,250	25,000	10.00%	7.5%	5.6%	4.2%	3.2%	2.4%	6%	\$ 239	\$ 477	\$ 716	\$ 955	\$ 1,193
47,500	2,500	50,000	9.58%	7.2%	5.4%	4.0%	3.0%	2.3%	6%	\$ 460	\$ 920	\$ 1,380	\$ 1,840	\$ 2,301
71,250	3,750	75,000	9.18%	6.9%	5.2%	3.9%	2.9%	2.2%	6%	\$ 666	\$ 1,333	\$ 1,999	\$ 2,665	\$ 3,332
95,000	5,000	100,000	8.79%	6.6%	4.9%	3.7%	2.8%	2.1%	6%	\$ 859	\$ 1,718	\$ 2,578	\$ 3,437	\$ 4,296
118,750	6,250	125,000	8.42%	6.3%	4.7%	3.6%	2.7%	2.0%	6%	\$ 1,040	\$ 2,081	\$ 3,121	\$ 4,161	\$ 5,201
142,500	7,500	150,000	8.07%	6.1%	4.5%	3.4%	2.6%	1.9%	6%	\$ 1,211	\$ 2,422	\$ 3,633	\$ 4,844	\$ 6,055
166,250	8,750	175,000	7.73%	5.8%	4.3%	3.3%	2.4%	1.8%	6%	\$ 1,372	\$ 2,745	\$ 4,117	\$ 5,490	\$ 6,862
190,000	10,000	200,000	7.41%	5.6%	4.2%	3.1%	2.3%	1.8%	6%	\$ 1,526	\$ 3,051	\$ 4,577	\$ 6,103	\$ 7,629
213,750	11,250	225,000	7.09%	5.3%	4.0%	3.0%	2.2%	1.7%	6%	\$ 1,672	\$ 3,344	\$ 5,015	\$ 6,687	\$ 8,359
237,500	12,500	250,000	6.80%	5.1%	3.8%	2.9%	2.2%	1.6%	6%	\$ 1,811	\$ 3,623	\$ 5,434	\$ 7,246	\$ 9,057
261,250	13,750	275,000	6.51%	4.9%	3.7%	2.7%	2.1%	1.5%	6%	\$ 1,945	\$ 3,891	\$ 5,836	\$ 7,781	\$ 9,727
285,000	15,000	300,000	6.24%	4.7%	3.5%	2.6%	2.0%	1.5%	6%	\$ 2,074	\$ 4,148	\$ 6,223	\$ 8,297	\$ 10,371
308,750	16,250	325,000	5.98%	4.5%	3.4%	2.5%	1.9%	1.4%	6%	\$ 2,199	\$ 4,397	\$ 6,596	\$ 8,794	\$ 10,993
332,500	17,500	350,000	5.72%	4.3%	3.2%	2.4%	1.8%	1.4%	6%	\$ 2,319	\$ 4,638	\$ 6,957	\$ 9,275	\$ 11,594
356,250	18,750	375,000	5.48%	4.1%	3.1%	2.3%	1.7%	1.3%	6%	\$ 2,436	\$ 4,871	\$ 7,307	\$ 9,742	\$ 12,178
380,000	20,000	400,000	5.25%	3.9%	3.0%	2.2%	1.7%	1.2%	6%	\$ 2,549	\$ 5,098	\$ 7,648	\$ 10,197	\$ 12,746
403,750	21,250	425,000	5.03%	3.8%	2.8%	2.1%	1.6%	1.2%	6%	\$ 2,660	\$ 5,320	\$ 7,980	\$ 10,640	\$ 13,300
427,500	22,500	450,000	4.82%	3.6%	2.7%	2.0%	1.5%	1.1%	6%	\$ 2,768	\$ 5,536	\$ 8,304	\$ 11,073	\$ 13,841
451,250	23,750	475,000	4.62%	3.5%	2.6%	1.9%	1.5%	1.1%	6%	\$ 2,874	\$ 5,748	\$ 8,622	\$ 11,496	\$ 14,371
475,000	25,000	500,000	4.43%	3.3%	2.5%	1.9%	1.4%	1.1%	6%	\$ 2,978	\$ 5,956	\$ 8,934	\$ 11,912	\$ 14,891
498,750	26,250	525,000	4.24%	3.2%	2.4%	1.8%	1.3%	1.0%	6%	\$ 3,080	\$ 6,161	\$ 9,241	\$ 12,321	\$ 15,402
522,500	27,500	550,000	4.06%	3.0%	2.3%	1.7%	1.3%	1.0%	6%	\$ 3,181	\$ 6,362	\$ 9,543	\$ 12,724	\$ 15,905
546,250	28,750	575,000	3.89%	2.9%	2.2%	1.6%	1.2%	0.9%	6%	\$ 3,280	\$ 6,561	\$ 9,841	\$ 13,121	\$ 16,401
570,000	30,000	600,000	3.73%	2.8%	2.1%	1.6%	1.2%	0.9%	6%	\$ 3,378	\$ 6,757	\$ 10,135	\$ 13,513	\$ 16,892
593,750	31,250	625,000	3.57%	2.7%	2.0%	1.5%	1.1%	0.8%	6%	\$ 3,475	\$ 6,951	\$ 10,426	\$ 13,901	\$ 17,377
617,500	32,500	650,000	3.42%	2.6%	1.9%	1.4%	1.1%	0.8%	6%	\$ 3,571	\$ 7,143	\$ 10,714	\$ 14,285	\$ 17,857
641,250	33,750	675,000	3.28%	2.5%	1.8%	1.4%	1.0%	0.8%	6%	\$ 3,667	\$ 7,333	\$ 11,000	\$ 14,666	\$ 18,333
665,000	35,000	700,000	3.14%	2.4%	1.8%	1.3%	1.0%	0.7%	6%	\$ 3,761	\$ 7,522	\$ 11,283	\$ 15,044	\$ 18,805
688,750	36,250	725,000	3.01%	2.3%	1.7%	1.3%	1.0%	0.7%	6%	\$ 3,855	\$ 7,710	\$ 11,565	\$ 15,420	\$ 19,275
712,500	37,500	750,000	2.88%	2.2%	1.6%	1.2%	0.9%	0.7%	6%	\$ 3,948	\$ 7,897	\$ 11,845	\$ 15,793	\$ 19,742
736,250	38,750	775,000	2.76%	2.1%	1.6%	1.2%	0.9%	0.7%	6%	\$ 4,041	\$ 8,082	\$ 12,124	\$ 16,165	\$ 20,206
760,000	40,000	800,000	2.64%	2.0%	1.5%	1.1%	0.8%	0.6%	6%	\$ 4,134	\$ 8,267	\$ 12,401	\$ 16,535	\$ 20,669
783,750	41,250	825,000	2.53%	1.9%	1.4%	1.1%	0.8%	0.6%	6%	\$ 4,226	\$ 8,452	\$ 12,678	\$ 16,904	\$ 21,130
807,500	42,500	850,000	2.43%	1.8%	1.4%	1.0%	0.8%	0.6%	6%	\$ 4,318	\$ 8,636	\$ 12,954	\$ 17,272	\$ 21,589
831,250	43,750	875,000	2.33%	1.7%	1.3%	1.0%	0.7%	0.6%	6%	\$ 4,410	\$ 8,819	\$ 13,229	\$ 17,638	\$ 22,048
855,000	45,000	900,000	2.23%	1.7%	1.3%	0.9%	0.7%	0.5%	6%	\$ 4,501	\$ 9,002	\$ 13,504	\$ 18,005	\$ 22,506
878,750	46,250	925,000	2.13%	1.6%	1.2%	0.9%	0.7%	0.5%	6%	\$ 4,593	\$ 9,185	\$ 13,778	\$ 18,371	\$ 22,963
902,500	47,500	950,000	2.04%	1.5%	1.1%	0.9%	0.6%	0.5%	6%	\$ 4,684	\$ 9,368	\$ 14,052	\$ 18,736	\$ 23,420
926,250	48,750	975,000	1.96%	1.5%	1.1%	0.8%	0.6%	0.5%	6%	\$ 4,775	\$ 9,551	\$ 14,326	\$ 19,102	\$ 23,877
950,000	50,000	1,000,000	1.88%	1.4%	1.1%	0.8%	0.6%	0.4%	6%	\$ 4,867	\$ 9,734	\$ 14,600	\$ 19,467	\$ 24,334
1,900,000	100,000	2,000,000	1.80%	1.3%	1.0%	0.8%	0.6%	0.4%	6%	\$ 9,674	\$ 19,349	\$ 29,023	\$ 38,698	\$ 48,372



Road pricing will eventually replace fuel excise



National Infrastructure three year action plan

1. 10 year Capital Intentions Plan
2. Demand management & pricing
3. Improve access to information esp whole of life asset management
4. Performance indicators and annual stock-take
5. Spatial and regional infrastructure planning
6. Scenario modelling
7. Resilience incl lessons from Christchurch earthquakes
8. Explore alternative funding

- Improved partnerships and research programme
- Evolution towards more detailed project specific plan on 2014

Conclusions on transport funding...

- Auckland transport system requires significant investment to support regional growth
- Current funding methods are insufficient on their own – both nationally and regionally
- Debt can be used to enable early progress but where does the revenue come from to service the debt?
- TIF, asset sales and parking charges have potential to part fund new investment
- Network pricing is means to achieve a step change in transport funding and delivering transport network efficiency



People support network pricing...



More time with my son



More trains



More buses



More deliveries



Greater efficiency



More fares



More cycle tracks



More jobs done



More sales



Faster trips



Lower rates



We car pool



More transport choices