



XIII
INTERNATIONAL
WINTER ROAD
CONGRESS

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Québec 

SUSTAINABLE WINTER SERVICE FOR ROAD USERS

*Latvian Experience in Assignment, Implementation and
Valuation of Winter Maintenance Works*

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Place your logo here!

Location



Country Data

- Area: 64.6 thousand km²;
- Population: 2.25 million;
- Population density: 34.85 per km²;
- State roads : 20.2 thousand km;
- Other roads: 49.3 thousand km;
- Road network density 1.11 km/km²;
- Registered vehicles: 1 205 thousand;
- Cars: 932 thousand;
- GDP in 2008: 23 billion EUR.

Climate

- Winter period: from mid-November until the end of March;
- Slow start with moderate cold, cloudy weather, rain and snow;
- Climatic conditions vary from maritime to continental;
- Average temperature in January:
 - 2 ° C in coastal areas,
 - 7 ° C in inland regions;
- Occasional temperature drops below - 30 ° C;
- Snow cover up to 30–50 cm, while in coastal regions no more than 15–20 cm.
- Every winter usually has thaws for more than 25 days.

Maintenance Levels and Traffic Density

AADT (vehicles per day)	Main roads	Regional roads	Local roads
> 5000	A	A	-
1000 - 5000	A1	A1	A1
500 - 1000	A1	B	B
100 - 500	-	C	C
< 100	-	-	D

Duration

Winter maintenance level	Duration
A	6.00 – 22.00
A1	6.00 – 20.00
B	6.00 – 18.00
C	6.00 – 18.00
D	–

Road Conditions in Normal Winter Weather

Requirements	Maintenance level				
	A	A1	B	C	D
	Acceptable conditions				
Snow thickness	No snow	No snow	Up to 4 cm	Up to 10 cm	No restrictions
Ruts	Even surface	Some uneven ice pots allowed	Ruts up to 2 cm	Up to 4 cm	No restrictions
Time for snow cleaning	3 hours	4 hours	6 hours	18 hours	4 times per winter
Time for ice control action	3 hours	4 hours	6 hours	No requirements	No requirements

Road Conditions in Changing Winter Weather

Requirements	Maintenance level				
	A	A1	B	C	D
	Acceptable conditions				
Snow thickness	Up to 6 cm	Up to 6 cm	Up to 8 cm	Up to 10 cm	No restrictions
Slush	Up to 3 cm	Up to 3 cm	Ruts up to 5 cm	Up to 6 cm	No restrictions
Ruts	Ruts up to 1 cm	Ruts up to 2 cm	Ruts up to 2 cm	Up to 4 cm	No restrictions

- State Joint Stock Company ‘Latvian State Roads’ executes the functions of the Road Administration.
- Road Administration is responsible for adequate maintenance of state roads.
- Municipalities are responsible for the maintenance of their roads and streets.
- Owners of private roads have responsibility to maintain their roads, but they have rights to restrict the public to use their roads.
- Road administration has developed specifications for winter maintenance works with requirements for equipment, materials, work performance and results.

Performance of Levels A and A1



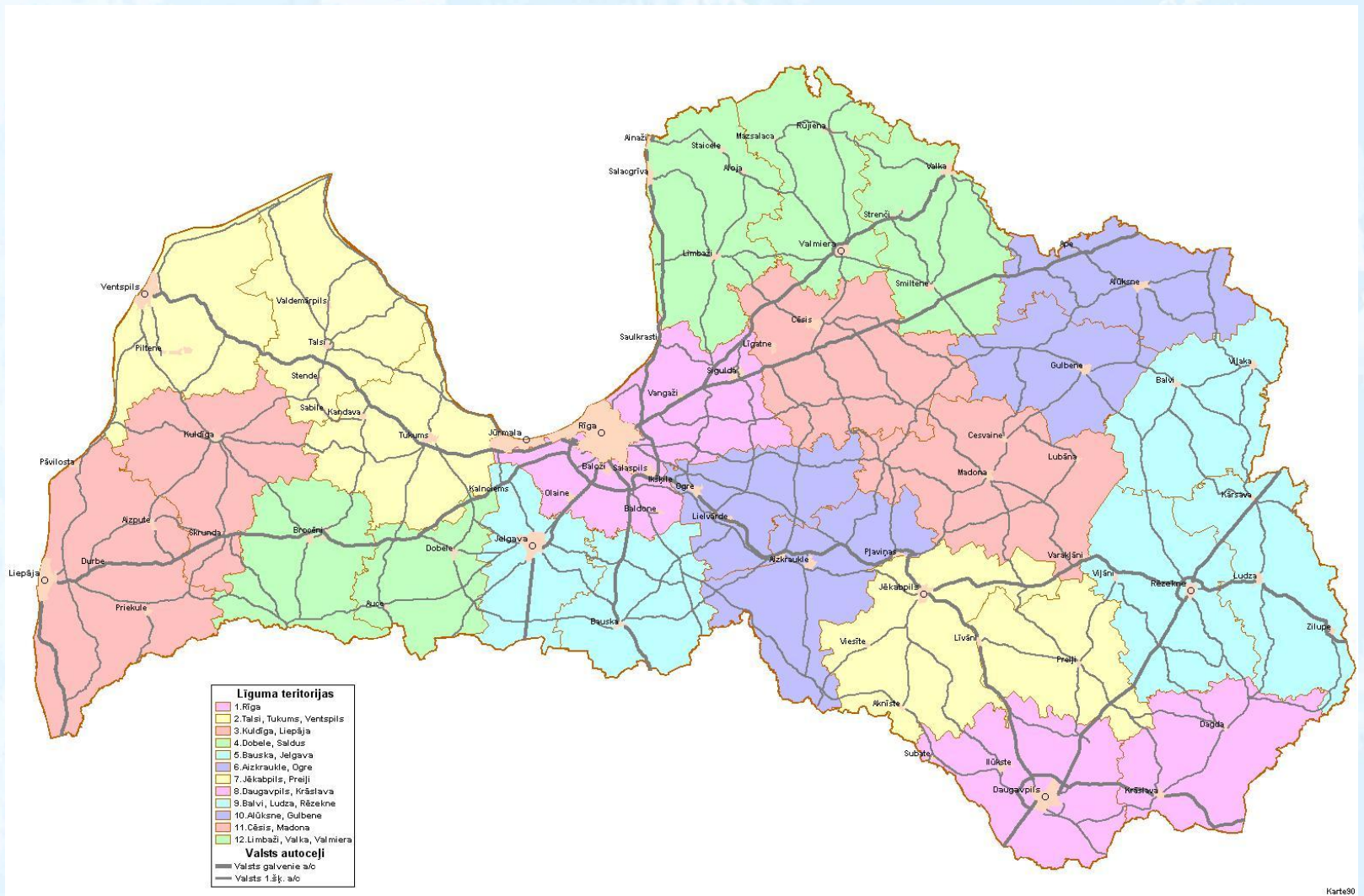
Performance of Level B



Performance of Level C



Maintenance Contract Areas



What were reasons for only one tenderer?

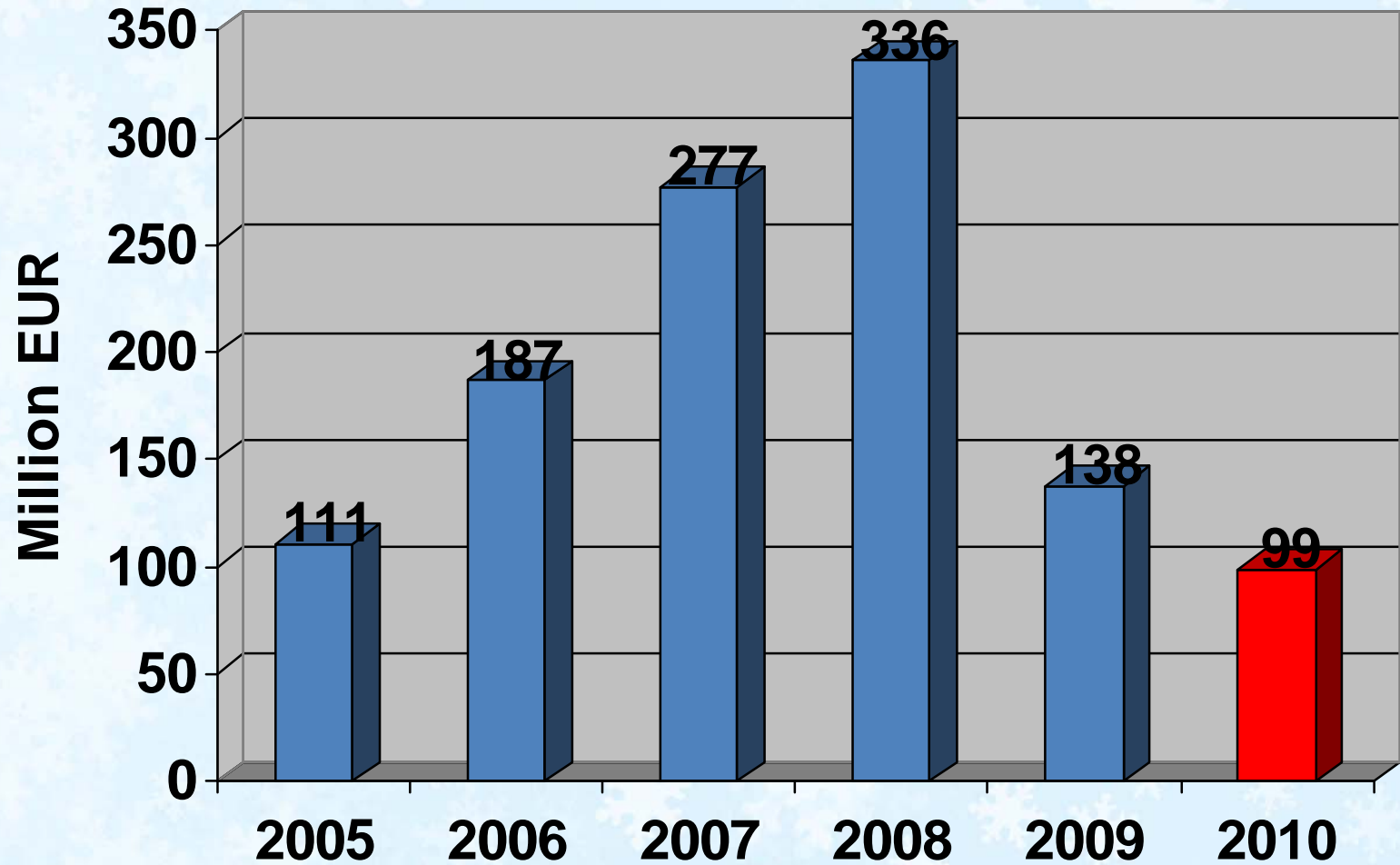


- The contract areas had roads with very different quality.
- The average cost for winter maintenance of main roads is approximately 5 000 EUR per km annually.
- The average cost for the maintenance of secondary roads is approximately 400 EUR per km annually .
- The tender was held in time when the construction market was satiated with offers.

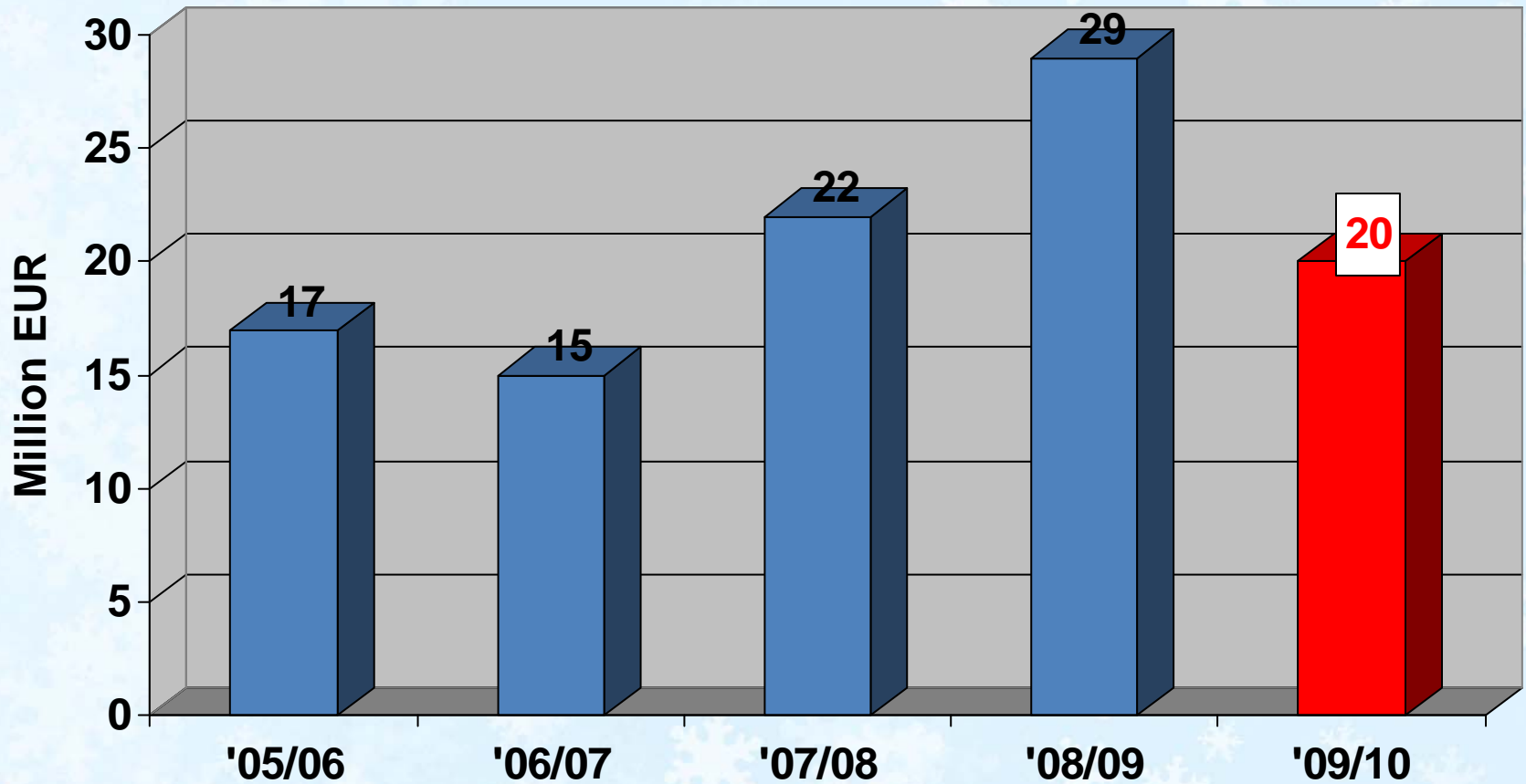
Organisation of Winter Maintenance

- In winter season the contractor is fully responsible about road conformity to maintenance level.
- The contractor constantly follows road conditions and makes decisions on necessary activities.
- Road administration controls the conformity to requirements of maintenance level and the amount of works performed on roads, as well as, accepts performed work for payment.
- If significant deviations from quality requirements are discovered, then the contractor must pay penalty.

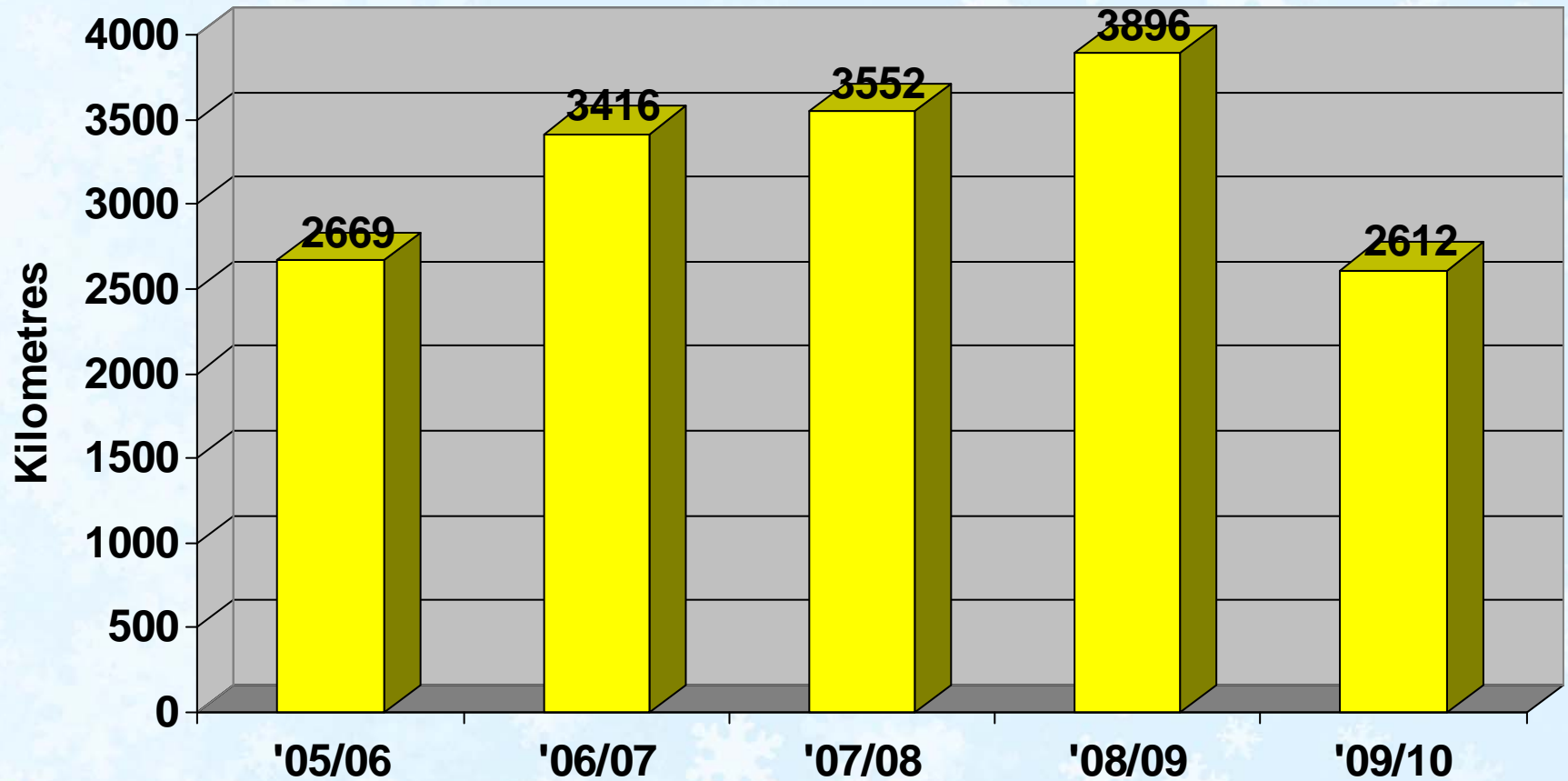
Road Financing 2005 - 2010



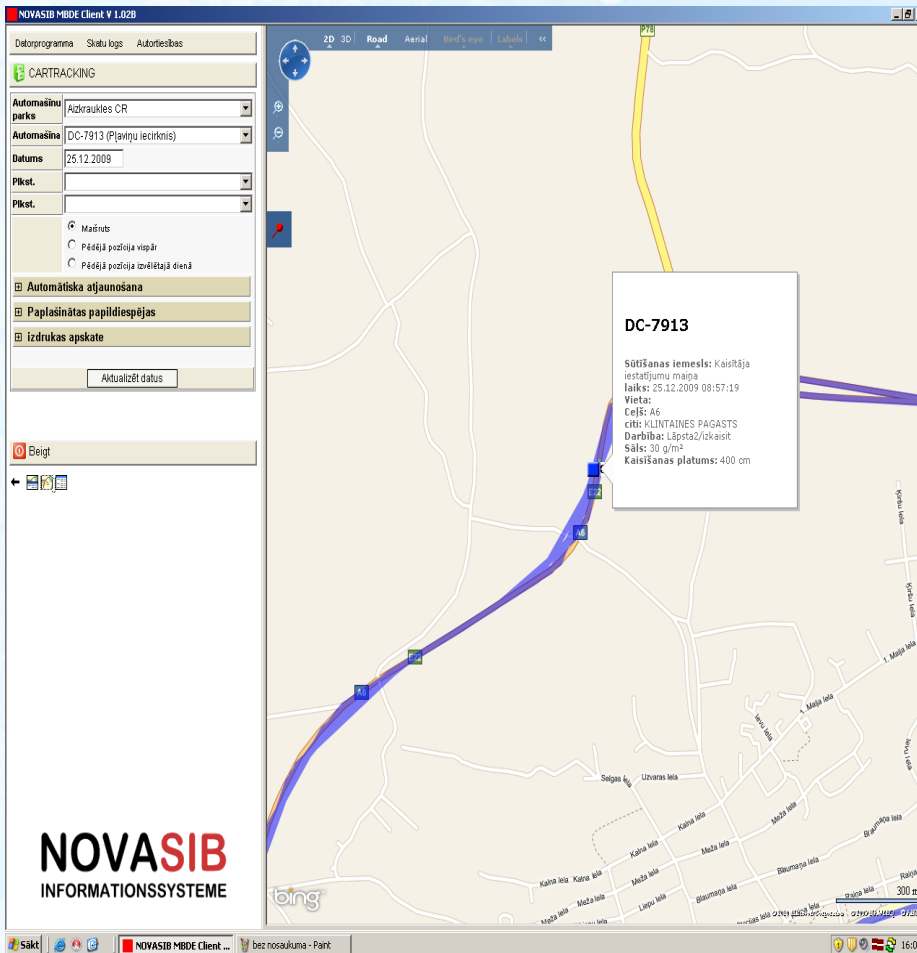
Costs of Winter Maintenance Works



Changes of Road Length in Classes A and A1



Registration of Activities and Payment



- Combines data transfer of spreading and cleaning data to mapping system to show and record spreading and cleaning routes.
- Payment for every executed activity.
- Payment for ensuring compliance to maintenance class.



Thank you for your attention!