1. FRENCH ROAD NETWORK

- Roads: 85% traffic [travelers and merchandise]
- 85% traffic
- Highways: >11,466 km, 1.0% length, 22.0% traffic
- National roads: >8,979 km, 0.9% length, 17.0% traffic
- Departmental roads: >378,000 km, 38.1% length, 36.0% traffic
- Local roads: >630,000 km, 60.0% length, 26.0% traffic
- Total: >1,000,000 km

2. LENGTHS AND TRAFFICS

<table>
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<tr>
<th></th>
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3. ROAD SECTOR

- 14.2 billions € [France] + 7.9 billions € [International]
- 1,421 companies
- 96,178 employees

4. THE MARKET

- Share of roadworks in public works: 38.82 million € (2010)
- 13.05% Electrical works
- 36.70% Roadworks
- 0.23% Agricultural engineering works
- 1.00% Works in maritime or fluvial sites
- 1.34% Underground works
- 2.01% Railways
- 3.09% Special foundations, drilling, boring
- 9.41% Structures and industrial equipment
- 15.78% General excavations
- 17.48% Water conveyance, purification, other canalizations and installations
4. THE MARKET (2)

- Breakdown of markets by type of clientele

31.6% private sector
4.7% state
53.8% local groups
9.9% public companies of which 4.8% SEM

5. ASSOCIATION « USIRF - Routes de France »

- Members divided into 3 colleges

- CMA (Associated associations)
- CER (Companies)
- > 20 SPRIR (Local associations)

- 2 sections
  - SFERB
  - STR

- 5 commissions
  - Economy
  - Social
  - Environment
  - Communication
  - Works - Markets

- 3 committees
  - Health - Safety
  - Material
  - Professional training
  - International

6. THE INDUSTRY OF ASPHALT

- Production: 39.2 millions tons
- Static plants: 436 (54% owned by one company)
- Mobile plants: 72
- Surface dressing: > 200 millions m²
- Micro surfacing: > 26 millions m²

No competition with CONCRETE

7. MAIN ISSUES

- Changing in roads administrations
- Financing of infrastructures
- Health and safety of employees
- Safer roads
- Environment, sustainable development
- Technology

8. CHANGING IN ROADS ADMINISTRATIONS

9. FINANCING OF INFRASTRUCTURES

- Establishment of AFIITF (Agency for financing infrastructures)
  - Roads
  - Railways
  - Ship canals

- Privatisation of highways

- PPP (Private Public Partnership)
10. EMPLOYEES

- Health and safety
  - Delivery of bitumen
  - Bitumen fumes
  - Impact of products [asphalt laying, fluxed bitumen …]
  - Protection on work sites
  - Industrial injuries [road accidents : 57 % fatalities]

- Engaging of skilled workers
  - 15,000 in 5 years

11. SAFER ROADS

- Infrastructure concerned in 42 % of accidents

  Assuring safety through arrangements and maintenance

  - Optimizing surfacing
    - Porous asphalt
    - High friction surfacing
    - Photometric pavements
    - Anti-skid roads markings

  - Safer roads
    - Street sharing [dedicated lanes]
    - Roundabouts
    - Making roads narrower
    - Road readability

12. ENVIRONMENT [Sustainability]

- Limitation of impacts
  - Roads
  - Plants
  - Works
  - Products

- Wastes management and recycling [7.0 millions tons]

- Life Cycle Analysis
  - Asphalt
  - 1 km of road
  - A eco-comparator SEVE

13. TECHNICAL ISSUES

- Tradition of partnership with Road Administration
  - IDRRIM [French institute for road engineering]
  - Innovation [Road innovation charter]
  - Technical opinions

- Communal researches
  - Mix design for cold mixes
  - Asphalt plants’ emissions
  - Rheology of modified binders
  - Fire behaviour of asphalt
  - LCI and LCA
  - Road noise measurements
  - Non-nuclear methods for in-situ measurements of density

14. TRENDS FOR FUTURE

- Lack of money [PPP, …]
- Difficulty for a national technical « doctrine »
- Evolution of the market [clients, types of works, …]
- Intermodality is encouraged [railways …]
- Lack of young workers [recruiting, training, …]
- Increasing of social demands [safe roads, noise, …]
- Saving of materials [thin layers, raw materials, …]
- Sustainability [less impacts, recycling, …]

15. VOLUNTARY AGREEMENT 25th March 2009

A heavy commitment of road industry companies and earth moving companies in relationship to sustainable development
The voluntary commitment of the actors of design, realization and maintenance of road network and urban public space

**9 commitments:***

1. Preserve unrenewable resources
2. Preserve biodiversity and natural environments
3. Reduce greenhouse gas/carbon dioxide emissions and energy consumption
4. Reduce water consumption on earth moving sites
5. Increase environmental performance of contractors and road network and urban public space
6. Increase safety of users, residents workers of construction sites
7. Create conditions of a true environmental competitiveness with all actors:
   - By participating in development of research and innovation
   - By creating the conditions of a new mode of technical partnership
8. Promote the goals of this act of commitment
9. Follow and assess this act of commitment

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**Recycling in situ**

- **Reduce greenhouse gas / carbon dioxide emissions**
  - To 2020, road industry contractors get involved to reduce greenhouse gas emissions of 33 %;
  - To 2012, they wish to reduce carbon dioxide emissions of 10 % thanks to progress on transport, mixing plants and bituminous products: warm mix asphalt or cold mix asphalt.

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**Assessment of the voluntary agreement 3rd year**

- **Recyclage des agrégats d'enrobés**
  - 2003: 42.8%
  - 2007: 40.0%
  - 2008: 33.0%
  - 2009: 29.9%
  - 2010: 24.0%
  - 2011: 12.7%
  - Objectif 2012: 10.0% (20,000 t of recycled aggregates)

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**Increase road industry contractors’ environmental performance:**

- A special software for every contractor to compare environmental techniques and basic techniques
  - 4 indicators (consumed energy, carbon dioxide emissions, preservation of the natural unrenewable resources and RAP consumption);
  - Based on the Life Cycle Analysis of the technique defined in the contracts;
Institut des Routes, des Voies et des Infrastructures pour la Mobilité

Reference Institute partnering all the stakeholders of road, streets and mobility infrastructures in their design, building, maintenance and operating.

Their needs are:
• a shared vision of sustainable mobility
• a common and coherent knowledge reference
• set of mutualised tools and services

Expected production

- Technical guidelines, certifications, technical information
- Guidebooks or technical parts
- Handbooks for design of new projects, preparing new tenders
- Guidelines for training, research, protecting of the biodiversity
- Organizing and coordinating technical colloquiums

16. PROMOTION OF WARM MIX ASPHALT

17. A DATABASE FOR OCCUPATIONAL HAZARD ASSESSMENT « CIMAROUT »

USIRF’s communication tools:
- Journal « Routes de France »
- Website: www.usirf.com
- Annual brochure:
  « L’Etat de la route »

Thank you for your attention