

PROTRAM
Federal Mass Transit Program
&
UTT
Urban Transport Transformation Project
México

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FONADIN

World Bank Transport Forum 2009
Technology & Energy Innovation
for Clean Transport

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NACIONAL INFRASTRUCTURE FUND IN BANOBRAS
Coordination Instrument of the Federal Government to finance
Infrastructure Projects as Public Private Investment

✓ **Roads**

✓ **Ports**

✓ **Airports**

✓ **Railroads**

✓ **Urban Transport**

✓ **Environment**

✓ **Tourism**

✓ **Water**



The development of the cities is not sustainable with the chronic urban transport deterioration

- Urban growth in cities with low density expansion
- Motorization with excessive use of private automobile
- Public Transport : inefficient , low quality & insecure
- Increasing Congestion with no public transport priority
- Pollution & Environment deterioration
- Inefficient use of energy
- Mayor negative impact on poor people
- Limited investment in mass transit





- **There are 133 Latinamerican cities with population over 500,000**
 - **31 of them in Mexico (in 1990 there were 16)**
- **There are 51 Latinamerican cities with population over 1 million**
 - **9 of them in Mexico (in 1990 there were 4)**
- **In Mexico 52 million (50% of the population) lives in these cities (a 37% increase from 1990)**

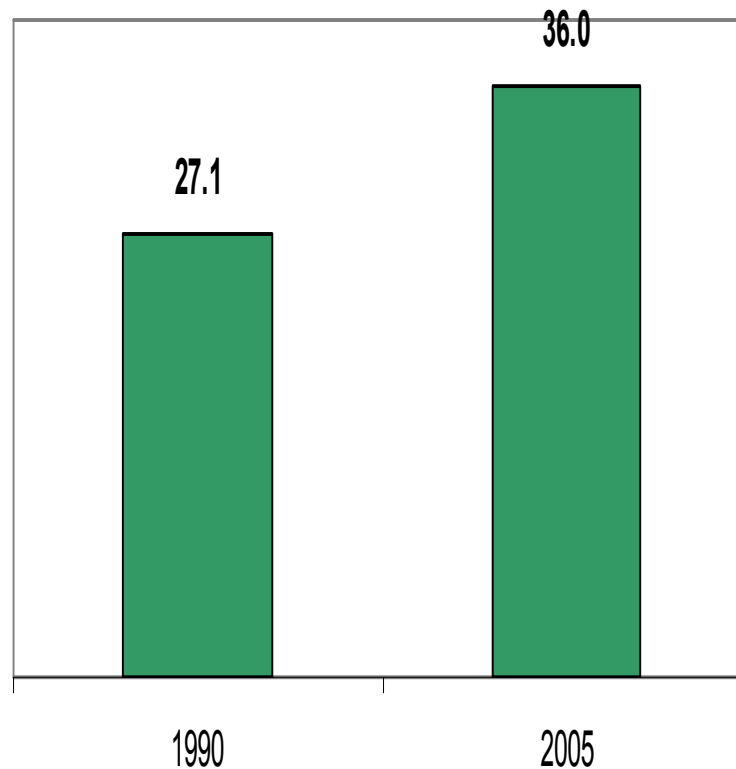
- **Inadequate land use regulation derives in:**
 - **The urban footprint grows faster than the population.**
 - **Cities with low density**
 - **30 to 50% of the land used for streets and urban roads**

Therefore, an exponential growth in mobility needs



Zonas Metropolitanas y Ciudades de mas de 1 Mill	Población 2005 Millones
Valle de México	19.2
Guadalajara	4.1
Monterrey	3.7
Puebla	2.1
(2) Toluca	1.6
Tijuana	1.5
León	1.4
Cd. Juárez	1.3
Torreón	1.1

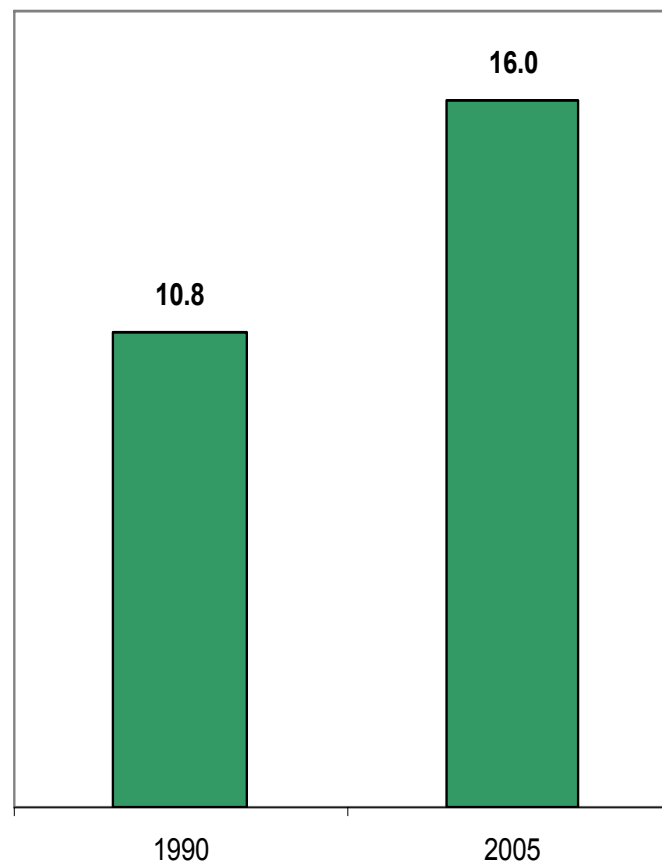
Ciudades de mas de 1 millon de habitantes 2005
(millones de habitantes)



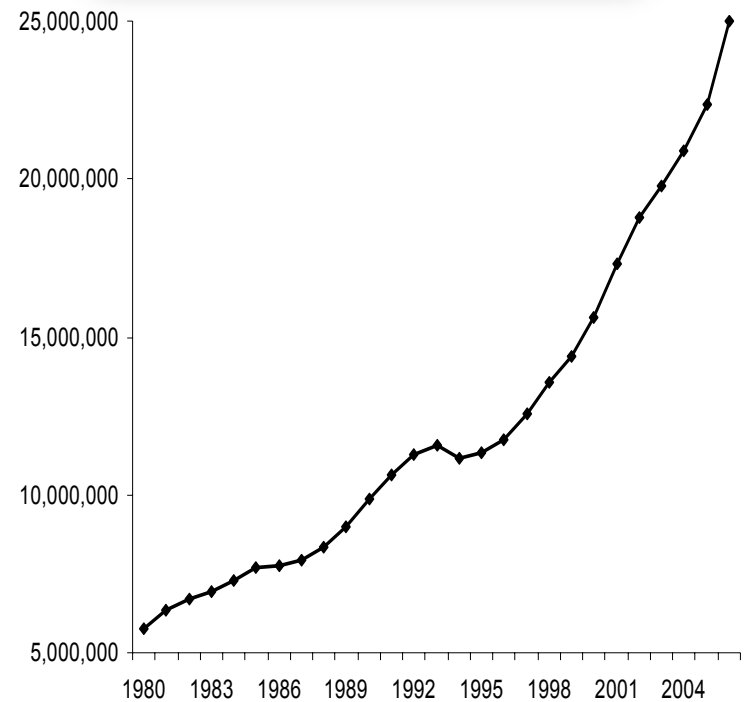


ZM y Ciudades entre 500 mil a 1 Mill	Población 2005(2) Miles
San Luis Potosi	958
Queretaro	918
Merida	897
Aguascalientes	805
Tampico	803
Cordoba-Orizaba	796
Culiacan	794
Cuernavaca	788
Acapulco	787
Chihuahua	785
Morelia	736
Saltillo	725
Veracruz	702
Hermosillo	702
Mexicali*	653
Coatzacoalcos-Minatitlan	652
Villa Hermosa	645
Reynosa-Rio Bravo	634
Cancun	586
Tuxtla Gutierrez	577
Xalapa	546
Oaxaca	504

Ciudades de 500 mil a 1 millon hab. en 2005
(millones de habitantes)



- **Automobiles grow 8% annually with an excessive use**
- **Inefficient Public Transportation with low quality**
- **Minimum attention to pedestrian and cyclists**
- **Chronic Congestion of urban roads**
- **High rates of accidents**
- **High grade of carbon emissions**
- **Inefficient use of energy**



Parque Vehicular en México 1980-2006

- **Metro of México City: 11 lines / 202 km / 3.9 million pass per day**
 - **9 million inhabitants DF (45,000 per km)**
- **Light train of Guadalajara: 2 lines / 24 km / 0.2 million pass. per day**
 - **4.2 million inhabitants (175,000 per km)**
- **Light train of Monterrey: 2 lines / 32 Km / 0.25 million pass. per day**
 - **4 million inhabitants (124,000 per km)**

- **Metro density in developed cities: 18,000 per km**



Mexico City



Monterrey

- Only three projects between 1998-2007
 - BRT Optibus, Leon: 24 km
 - BRT Metrobús Mexico City: 28 km (line 1)
 - Suburban Train: Valley of Mexico: 25 Km
- Three projects in the last year
 - Metro Extension Monterrey: 8.6 km
 - BRT Macrobus Guadalajara: 16 Km
 - BRT Metrobus México City: 19 km (line 2)

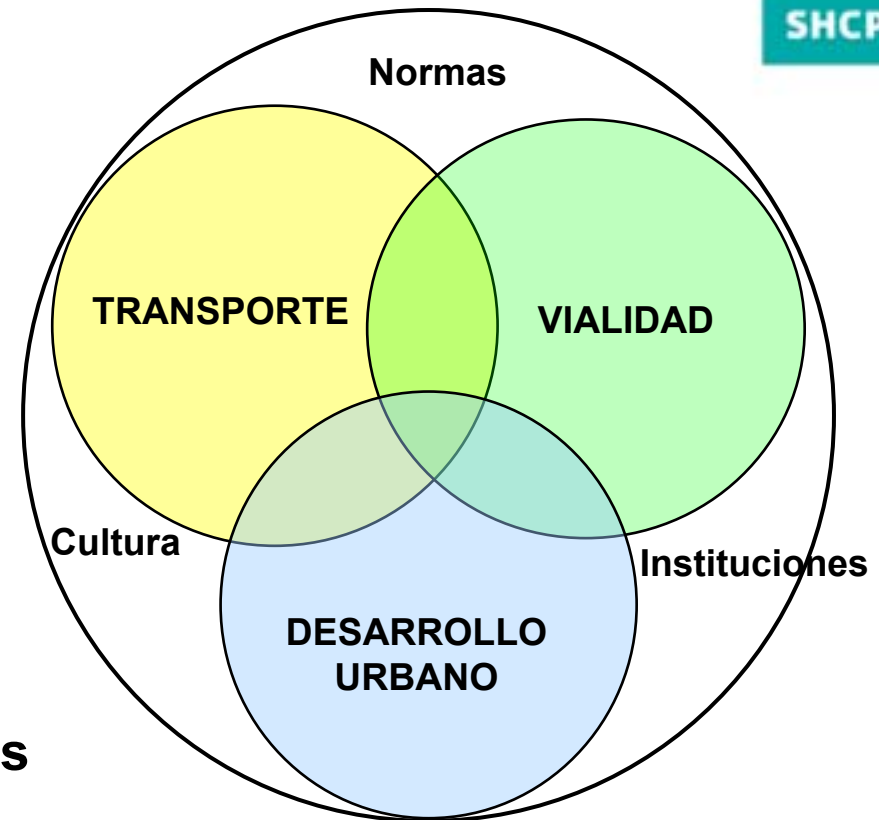


Metrobus Mexico City



Tren Suburbano Valley of Mexico

1. **Urban Land Use & Mobility Plans**
2. **Trunk-feeder Public Transport**
3. **Mass Transit Corridors**
Bus Rapid Transit “BRT”
Metro , Trains & trams
4. **Rational use of infrastructure**
5. **Energy efficient vehicles**
6. **Better Fuels**
7. **Integrated Prepaid Tariff systems**
8. **Efficient transport companies**
9. **Investment in Public Transportation**



**The Federal Government under the framework of
Fondo Nacional de Infraestructura (FONADIN) en BANOBRAS**

Developed through SHCP with World Bank assistance

Federal Mass Transit Program (PROTRAM)

Objectives

- 1. FONADIN financial support to cities in Mass Transit Investment Projects with high social justification**
- 2. Integrate Projects to Sustainable Mobility Plans**
- 3. Complement Local Government investment & maximize private investment**
- 4. Strengthened local institutions in urban transport planning , regulation & management**

Cities

Cities & Metropolitan Areas with more than 500 mil inhabitants

Technological Options

- ✓ **Bus Rapid Transit (BRT's)**
- ✓ **Light Trains & Trolleys**
- ✓ **Metros & Suburban Trains**
- ✓ **Multimodal Transfer Terminals**





FONADIN Financial Supports To Public Entities & private concessionaries



**Non
recoverable for
Studies**

**Sunk funds for
Investment**

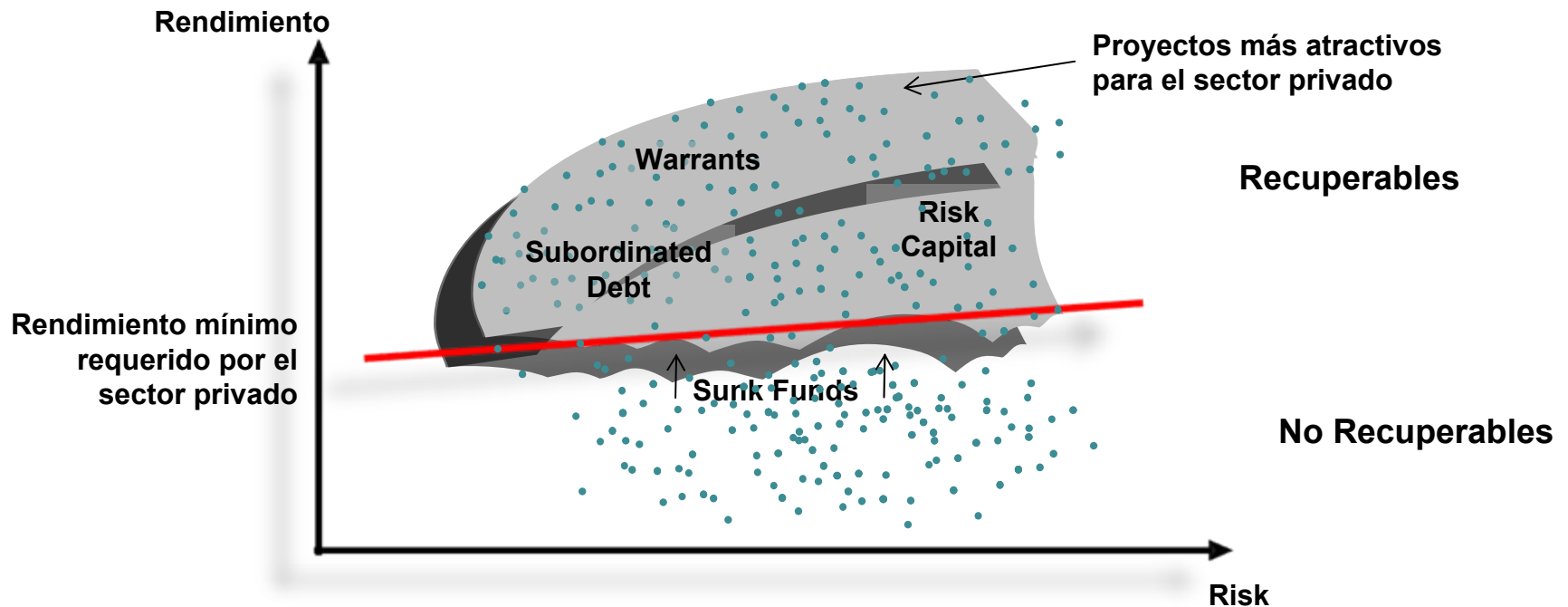
Recoverable

Up to 50 % Total Cost

Up to 50 % Total Project
Investment
At least 34% Private
Investment

Subordinated Debt
Warrants
Capital

Portfolio of de Infrastructure Projects with social justified



Federal Government through SHCP prepares with World Bank

**Urban Transport Transformation Project (PTTU)
Complements y strengthened PROTRAM**



SHCP

Objective

Promote urban transport transformation to a low carbon path through several improvements to reduce greenhouse gas emissions GHG to meet México goals for 2030

Instrument

BANOBRAS loans to cities funded with:

Clean Technology Fund (CTF)

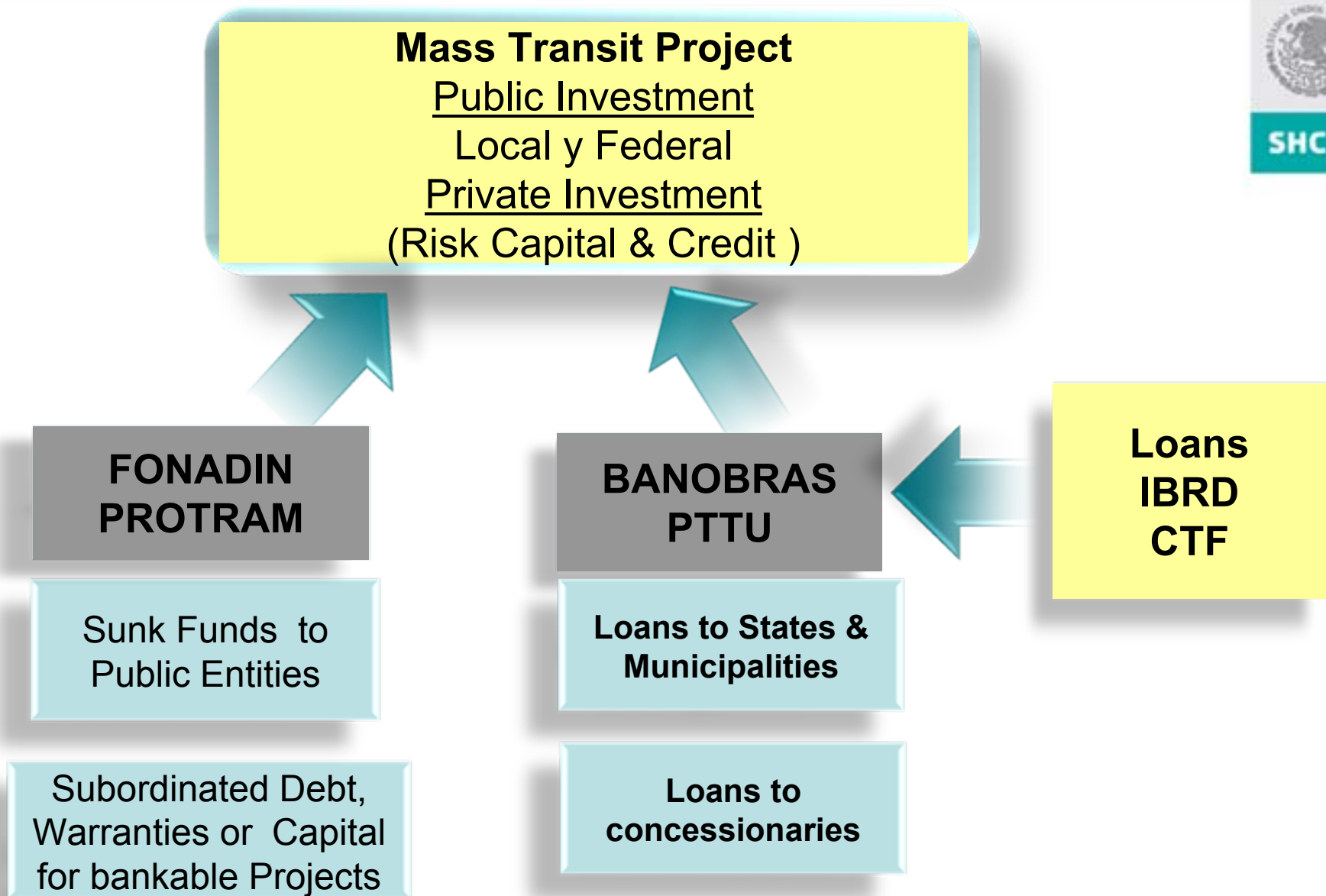
World Bank Credit (IBRD)

Global Environmental Facility (GEF)

Carbon Bonds



- 1. Transform the urban transport local planning process to a low carbon path with climate change considerations**
- 2. Improvements in traffic management and infrastructure bottlenecks to reduce congestion & pollution**
- 3. Bus renovation with more efficient & low GHG emission buses linked to scrapping programs and route optimization**
- 4. Mass Transit Projects BRT and urban trains**



- **Local Authority - Presents Project applying for PROTRAM Support & y UTT loans**
- **Guidelines for PROTRAM & UTT**
- **Consulting Working Group - Evaluation**
- **FONADIN & BANOBRAS -Autorization**
- **PROTRAM Support Agreement -FONADIN**
- **UTT Loan Agreement - BANOBRAS**



PROJECT for PROTRAM & UTT

- 1. Diagnostic**
- 2. Integral Mobility Plan**
- 3. Mass Transit Project**
 - a) Technical Feasibility**
 - b) Urban and Environmental Impact**
 - c) Social Cost - Benefit Analysis**
 - d) Financial analysis & structure**
 - e) Legal framework**
 - f) Institutional Organization**



Additional to UTT
Social & Environmental safeguards

Consultive Working Group

1. Integral Evaluation of each Project

Sria Comunicaciones & Transport	Technical Feasibility
Sria Desarrollo Social	Urbano & social Impact
Sria Medio Ambiente y RN	Environmental Impact
Sria Hacienda y CP	Public Investment & Credit
FONADIN /BANOBRAS	Financial Viability
Independent Transport Consultant	

2. Recommends Project to FONADIN for PROTRAM Support

3. Recommends Project to BANOBRAS fot UTT loan



Promotion & Identification of Projects

- **More than 30 Projects for \$ 8.4 US Billions including:**
- **3 Suburban Trains Valle de México : \$ 2.4 USD Billions**
- **7 Rail Mass Transit in 7 cities : \$ 3.0 USD Billions**
- **25 BRTS Corridors in 16 cities : \$3.0 USD Billions**

Evaluation & Project Selection

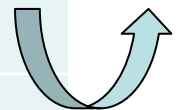
Implementation

Post Evaluation & Monitoring



SHCP

Ciudad o ZM	Proyecto identificado
Valle de México	Tren Suburbano Sistema 3
	Tren Suburbano Sistema 2
	Tren Suburbano Ampliación Sistema 1
Guadalajara	Tren Suburbano ligero de Guadalajara
Veracruz	Tranvía Veracruz - Boca del Río
Monterrey	Tren metropolitano de Monterrey
Puebla-Tlaxcala	Tren Suburbano Puebla - Tlaxcala
Aguascalientes	Tren Suburbano de Aguascalientes
Tijuana	Tren Ligero de Tijuana y Corredor BRT
Acapulco	Tren ligero costera y 2 Corredores BRT





SHCP

Ciudad o ZM	Proyecto identificado
Valle de México	Mexibús Cd. Azteca-Coacalco-Lechería
Toluca	Cd Azteca - Tecamac
Guadalajara	Zinancatepec - Lerma
Guadalajara	Macrobús -Corredores 2 y 3
Monterrey	Corredor Lincoln - Ruiz Cortines
Chihuahua	Corredor Norte-Sur
Mexicali	Línea Express #1
Oaxaca	Corredores de Autobuses Rápidos
Puebla	Corredores de Autobuses Rápidos Troncales
León	Optibús, 2a y 3a etapa
Culiacán	Corredor Zapata-Obregón
Cd Juárez	Corredores 1 y 2
Villahermosa	Corredor 27 febrero
Cancún	Corredor José López Portillo
Tampico-Madero	2 Corredores

**PROGRAMA APOYO FEDERAL AL
TRANSPORTE MASIVO -PROTRAM
Y
PROYECTO TRANSFORMACION DEL
TRANSPORTE URBANO EN MEXICO- PTTU**

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