

sustainabletransport

Fall 1999

Number 10

South Africa Rides Again ⁸

Bike Use in
South China Plunges ⁶

Quito -The Next Curitiba ¹⁶

The Automobile Industry's 'Special' Relationship with Development Institutions and the Hopes for Hydrogen

As political pressure from the right and left has mounted against the World Bank and other development institutions, the availability of 'soft money' for special projects is increasingly tied to 'public-private partnerships.' Now, Daimler-Chrysler has a 'special representative' who sits on the steering committee of the World Bank's three largest transport-related initiatives; the Global Road Safety Initiative, the Latin America Air Quality Initiative, and the CO2 initiative. It has also played an important role in directing the use of Global Environmental Facility funds in the transport sector. World Bank staff is hopeful that the motor vehicle industry will help fund road safety and air quality efforts, and that a direct dialog could make the industry cleaner and safer.

But there is a risk that the global safety and air quality agenda will be controlled by the motor vehicle industry in exchange for modest monetary support, mostly to fund the industry's own self-promotion and greenwashing. On the steering committee of these three World Bank 'Public-Private' initiatives, non-governmental organizations, particularly environmental organizations and consumers associations, are conspicuous by their absence. At the World Bank's Transport Expo in April, Daimler-Chrysler's liaison to the World Bank indicated they are primarily interested in public service announcements encouraging drivers to drive safely, wear seatbelts, telling pedestrians to cross at crosswalks and look both ways, etc. Safety research indicates that such public service announcements do little to improve traffic safety, but it does help auto manufacturers deflect a rising tide of criticism against traffic deaths. When asked whether Daimler-Chrysler would consider engineering their vehicles in ways that reduced the seriousness of accidents with pedestrians and cyclists, (which safety researchers have shown can save tens of thousands of lives each year), he demurred, saying only that

they already follow all international design safety standards. Unfortunately, there are no international design standards for the protection of vulnerable road users.

Standard traffic safety projects, meanwhile, also sometimes increase the obstacles to non-motorized travel. Often, safety experts identify locations where numerous pedestrian or cyclist and motor vehicle accidents occur, and then 'measures are taken' which often include creating barriers which make it impossible for cyclists and pedestrians to cross major streets without taking inconvenient overpasses.

Unless environmentalists and representatives of cyclists and public transit users, the bicycle industry, and unions are represented on the steering committees of these initiatives, the agenda may be co-opted by motor vehicle industry interests. The classic example of this was the effort by Daimler-Chrysler to focus the Global Environmental Facility's transport program entirely on hydrogen fuel cell vehicles in developing countries.

The possibilities of hydrogen fuel cell vehicles as a partial long-term solution to transport sector emissions problems in developing countries should not be dismissed, but the cost effectiveness of using soft money to promote it, relative to alternative uses of soft money, should be carefully assessed.

California's decree that by 2004 a tenth of all cars sold in the state must not produce emissions has stimulated the major automobile and oil companies to spend \$1.5 billion on fuel cell research. Apparently, if pure hydrogen fuel is used, the only emissions are water vapor and heat: a zero emission vehicle. Though the technology has been around for 150 years, only recently have the big

companies begun to invest in it. Royal Dutch/Shell recently set up a subsidiary, Shell Hydrogen. Daimler-Chrysler has been working on fuel-cell vehicles for years, and is ahead of other companies. Not surprisingly, they are the major proponents of soft money to promote hydrogen fuel cells. They promise to have a commercially viable prototype by 2004. Ford Motor Company and GM are also looking for a commercial release around 2004. There are already fuel cell buses operating in LA, Chicago, and Vancouver and several are coming on line in Europe as well. Exxon and others are also reluctantly getting into the act.

Currently, the problems with fuel cell vehicles are multiple. Right now,

There is a risk that the global safety and air quality agenda will be controlled by the motor vehicle industry in exchange for modest monetary support.

cost is a major factor. The fuel cells required to operate a passenger car currently cost \$30,000, ten times that of a conventional engine. Prices are dropping fast, but its not clear how far they will drop and how fast. Another problem is the car's weight. The fuel cells and the fuel storage tanks are currently extremely heavy, a small car weighing nearly two tons. Being struck by a two-ton compact car will not improve safety conditions on the roads. Then, of course, there is the concern of what will happen in a serious crash. While proponents say talk of another Hindenburg is nonsense, the safety issues are not currently known.

The most serious problem is the lack of infrastructure for producing, storing, and distributing hydrogen. The first question is where to get the hydrogen. The most likely source is fossil fuels, and there will be emissions in the process of

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production. Right now, there is only one place in the world you can get pure hydrogen fuel—Munich Airport. It has to be stored at 430 degrees below zero. A lot of oil companies and car companies are exploring ways of using standard gasoline or natural gas as the fuel, and converting it to hydrogen on board the vehicle. But nobody currently has a working prototype, and estimates are not before 2010.

The Rocky Mountain Institute has long been arguing that developing countries should adopt 'leapfrog' technologies, since they claim the old technologies are not as entrenched there. An interesting idea, but is there any evidence? Will hydrogen fuel cell vehicles be the panacea for China, for example? China, which is already a net importer of oil, and could easily tighten global energy supplies if it dramatically increases its oil consumption.

The evidence in the transport sector of 'leapfrog' technologies in developing countries is unconvincing. The market

for hydrogen fuel cell vehicles is in California and Europe where tightening air quality standards are forcing consumers and the motor vehicle industry towards cleaner, more expensive alternatives. In China the battle for unleaded gasoline and catalytic converters is only now being won, and the passage and enforcement of Euro I regulations remains elusive. In a country where incomes are a fraction of what they are in the U.S., and only one person in a thousand owns a motor vehicle, what is going to compel buyers to buy hydrogen vehicles when the cost of gasoline is so cheap? Should Chinese cities buy hydrogen fuel cell buses? It is a good idea to start with buses, largely because their fixed routes make refueling less complicated. But from a greenhouse gas perspective, it would currently be much more cost effective to simply buy newer fleets of less energy consuming buses and trucks. Natural gas and liquid petroleum gas are more hopeful as alternative

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Cover : biking to the Sisters of
Mercy Center, see p.8
photo by Paul S. White



News Briefs

Bloody Noses in Corredor Sur Highway Battle

The struggle continues over the Corredor Sur highway project in Panama City. Pro-highway supporters tied to the current Panamanian government have initiated a smear campaign against the highway's opponents, claiming they are 'politically motivated.'

The highway continues to be built partially on a causeway just forty meters off the coast of Panama City, creating a cesspool of trapped sewage and contaminated run-off right in front of several coastal communities. The project was only financially viable because of cross-subsidies from a speculative real estate venture called Punta Pacifica, to be built on land fill in the bay of Panama. No environmental impact assessment was even done on this venture. After major demonstrations in Panama City and a formal protest by over 20 major environmental organizations initiated by ITDP, the International Financial Corporation (the World Bank's private sector lending arm) suspended further disbursements of the loan pending a re-evaluation of the environmental impact assessment on the Punta Pacifica venture. Chase Manhattan in New York was considering a loan to the project, but seems to have backed off until the constitutional rights over the landfills



Corredor Sur Highway, Panama City

are clarified and conflicts with the community are settled. A major Panamanian Law Firm has recently agreed to file a civil lawsuit against the highway corporation in the name of the communities who live on coastal lands adversely affected by the highway. This could delay the sale of the Punta Pacifica lots for at least one year.

For more info, see Transport Actions, www.itdp.org, or contact Felix Wing Solis, Fundacion para el Desarrollo de la Libertad Ciudadana. Panama, or libertad@pty.com.

U.S. Courts Ensure Transport Conforms to Air Regulations

In March, the Environmental Defense Fund won a lawsuit overturning a loophole in U.S. EPA regulations which had exempted from clean air review billions of highways dollars in areas violating their own air pollution control plans. The ruling blocked over \$500 million in sprawl-inducing suburban highways in metro Atlanta. The new ruling by the U.S. Court of Appeals in Washington D.C. means that many previously approved road projects ('grandfathered projects') will not be funded until Atlanta and several other affected cities revise their plans to ensure that motor vehicle emissions will fit within the pollution limits set by an area's air pollution control plan.

The lawsuit helped build political

support for the passage of a Georgia state law called the Regional Transportation Act which gives Governor Roy Barnes sprawl-fighting powers possessed by no other Governor in the U.S. A super-agency headed by appointees of the Governor has the power to stop new shopping mall developments, stop new highway developments, and force metropolitan areas to improve transit access by threatening the cut-off of state funding.

In a separate U.S. Court of Appeals decision, now on appeal, U.S. EPA's new ozone and particulate standards have been sent back for further agency refinement. EPA's authority to set criteria for the standard is under challenge. In the wake of the ruling, states are still required to establish new non-attainment designations under the new standard by September 1999 and EPA is being pressed to reinstate non-attainment designations in thousands of counties under the old standard to assure transportation plans do not lead to new clean air violations.

M1 Highway in Hungary Goes Bankrupt, State Assumes Control

ELMKA, the private company that built and collected the tolls on the M1 freeway between Budapest and Vienna, was unable to meet its debt payments to its creditors, and was taken over in June of 1999 by a new state-owned motorway company.

Most of the initial investors lost their equity investments. The consortium of banks that lent money to the concession company, which includes the EBRD, also lost \$31 million.

According to a spokesperson for the Economics Ministry, in the end the road will cost the Government of Hungary some \$30 million less than if they had simply built the road as a public toll road with EBRD loans. It may be, however, that the final restructuring agreements include mechanisms for partial bail out of some of the initial investors.

Hungary: M0 Highway Construction Stopped By Courts

On July 21st, the Court of Budapest temporarily suspended the construction of the Northern section of the M0 ring road around the Hungarian capital. According to the

court order, the project's required Environmental Impact Assessment (EIA) was deficient.

The ruling is a triumph for the coalition of NGOs and local activists that have been fighting the highway since construction started in the spring of 1998. Among the issues were the planned highway's route through a nature reserve and within 300 meters of a residential area, the failure of authorities to notify the public and solicit public participation, and the noise and air pollution levels which would exceed Hungarian standards.

Indian Court Rules For Clean Air

On April 29, 1999 the Supreme Court of India ruled that all new cars must meet Euro I auto emissions standards by June 1, 1999 and meet more stringent Euro II standards by April 2000 — five years ahead of the previous deadline. Though the ruling only applies to cars sold in the New Delhi region, it represents a major victory for clean air advocates. Unfortunately, an increasing share of the air pollution problem in Delhi is

coming from diesel vehicles. Diesel cars are much worse than gasoline cars for particulate emissions, which is a serious problem in Delhi. The typical diesel car in Delhi emits 5 to 6 times the World Health Organization's recommended particulate tailpipe emission standards.

While diesel fuel is no longer subsidized, it is untaxed. Gasoline, by contrast, is heavily taxed in order to cross-subsidize kerosene. The original policy was intended to support the agricultural sector and public transit vehicles, but the majority of the benefits are captured by urban motorists who are increasingly switching to diesel. Ford, General Motors, Mercedes, Fiat, Mitsubishi and Hindustani Motors are all developing diesel cars for India.

When the Centre for Science and Environment in Delhi published articles attacking the companies which were switching to diesel for endangering people's health, they were sued by TELCO, the Indian manufacturer of the "Tata Sumo", an Indian diesel sports utility vehicle. Ultimately the case was dropped. For more information, check CSE's web site at www.cseindia.org.

Progress on Bike Promotion in Metro Manila

Plans for developing a bike network in Metro Manila are finally off the ground. The Mayor of Marikina in Manila, Mr. Bayani Fernando, has in mind a network of bike paths mainly along the Marikina River which would provide access to twelve of the fourteen districts in the city. The idea came closer to reality when the World Bank suggested the project, providing \$25,000 for the feasibility study and potentially \$1.3 million for its construction from the Global Environmental Facility. The National Center for Transportation Studies at the University of the Philippines - Diliman has put together a team to do the feasibility study. The views of the team and the Mayor do not agree on all issues. SUSTRAN General Assembly member Ramon Fernan, an avid cyclist in the group developing the feasibility study, says that while cyclists would welcome the bike path along the Marikina River (which will become more important if the planned commercial developments and multi-modal transport terminals are built at the south end of the river)

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Bicycle Use Plunges

The Struggle for Sustainability in China's Cities

ITDP's Executive Director Walter Hook, and SUSTRAN's Advocacy Coordinator John Ernst spent part of April in Beijing, Guangzhou, and Shanghai, exploring ways to promote greater sustainability in China's transport system. Below are the notes taken from their report.

China's Bicycle Culture Threatened

Until 1990, China was one country environmentalists working on transport issues didn't have to worry about. Despite its enormous population, China consumed one seventh as much oil as the U.S., and each person in China consumed a twentieth of the oil consumed by the average American. In 1990, China was exporting oil, and there were fewer than one car per 1000 people. With bicycling and walking accounting for the vast majority of urban transport trips, and intercity transport heavily dominated by rail, China's transport sector generated little pollution. While road, rail and public transit systems were badly overcrowded, in a sense the system was highly efficient. China managed one of the highest sustained rates of economic growth in the world while consuming only 2% of their GNP for transport, compared to over 18% in the U.S. Chinese cities were badly polluted, but mainly because of coal-fired industry and residential heating, not because of the transport sector.

But after 1990, things started to change. The government increasingly encourages auto ownership while allowing some controls on car use. An increasing number of powerful automobile companies set up joint-ventures with Chinese state-owned companies. The most powerful is the Volkswagen joint venture with Shanghai Automotive Industry Corp, but General Motors, Honda, Daimler-Chrysler, Citroën, Peugeot and Daihatsu all set up joint ventures. China decided that the motor vehicle industry was to be one of its 'four pillars of industry'. Unlike in free-market economies, because the auto industry is largely state-owned, the automobile lobby resides within the government, as part of the powerful Ministry of Machine Building and Industry, and the highway construction lobby is in other ministries. Car ownership began increasing at a rate of 15% a year, well above the economic growth rate, and domestic car manufacturing shot up from 42,000 cars a year in 1990 to 586,000, this year, along with 1.1 million trucks and buses.

China has survived the Asian economic crisis enormously well, in part through massive infrastructure spending. However, this spend-

All photos: Walter Hook

ing is also increasing the level of subsidies to motor vehicle use in China. The European Union has said that spending 1.5% of GNP on transport investments is a sustainable level. While China has fast GDP growth, the recent level of spending, around 3.6% of GNP a year, (of which 72% is spent on roads) seems excessive. Last year alone, China spent more than \$20 billion on infrastructure projects. Over 15,000 kilometers of new highways are planned between now and 2010. While the construction jobs have been important to lower income Chinese and to maintaining economic growth, with road user fees currently covering only 47% of infrastructure costs, and with gasoline prices only \$0.25 per liter, (below even the low U.S.

price of \$0.37 per liter), the vast majority of Chinese who have no access to a company car or private motor vehicle end up subsidizing the tiny minority who do. World Bank economists feel that US\$1 per liter would be a closer reflection of actual delivered oil costs.

Cyclists also face an increasing number of restrictions. While initial plans to ban bicycles in downtown Guangzhou were defeated, Guangzhou is marginalizing bicycles by consigning them to non-motorized vehicle (NMV) routes. New elevated roads have severed NMV and pedestrian routes. Shanghai plans to phase out bikes within the inner ring road by 2010, and its bike network is being taken over by mopeds and motorized three-wheelers. In Beijing, segregated bicycle lanes were torn out to make more room for automobiles, and those that remain are being taken over by motorists for parking. An increasing number of major thoroughfares and new highways ban bicycles. Formerly convenient bicycle parking is being relocated and the space is being utilized for motorcycle and car parking. This is evident in most new commercial and retail developments.

As more and more people are operating motorized vehicles, safety conditions for non-polluting bicyclists and pedestrians have deteriorated dramatically. Though the police in most cities release safety statistics monthly to the

Ministry of Public Security in Beijing, the statistics are useless from a safety-planning perspective. While bike use is still growing in parts of China, and is stable in Beijing and most of Shanghai, in rapidly modernizing Guangzhou, bike use dropped from 34% of total trips to 24% of total trips in a decade.

To the West, the specter of a China as motorized as the U.S. is indeed harrowing. From a net exporter of oil before 1993, today China imports 35 million barrels a year, despite levels of motorization that remain exceedingly low.

As more and more people are operating motorized vehicles, safety conditions for non-polluting bicyclists and pedestrians have deteriorated dramatically.

Because of China's immense population, small changes in assumptions about China's motorization could throw future global oil demand projections and greenhouse gas emission estimates off by 100%.

What Is Being Done

With the U.S. still by far the most serious contributor to greenhouse gas emissions, and still failing to address its own greenhouse gas emissions problem, it is unlikely that many decision-makers in China are going to feel responsible for their contribution to global warming. They are concerned, however, about urban air pollution and its serious health effects.

Though nationally pollution from domestic heating and other point sources remains the most serious pollution problem, transport is the fastest growing source of urban air pollution, now responsible for 80% of CO, a majority of the particulates, and some 40% of NOx in major cities. China's cities are more polluted than Japanese and U.S. cities despite much lower levels of motor vehicle ownership and use because the vehicles are much more polluting. Beijing currently has levels of suspended particulate matter more than four times the recommended WHO guidelines, and NOx nearly triple the recommended guidelines. Current trends indicate that while particulate is stable, NOx emis-



sions are likely to double in the next decade, while CO could increase by five times, causing serious public health problems.

Basic air pollution control measures still have a long way to go. Ambient air quality standards are regularly violated, but there is no mechanism to enforce them. Currently there are no tailpipe emission standards on light duty vehicles, heavy duty vehicles, mopeds, or motorcycles. Only 30% of new cars are in compliance with the comparatively weak Euro I standard, and virtually none of the existing vehicle fleet is in compliance. Most of the cars in China are manufactured using European and U.S. manufacturing equipment dating from the early 1980s. This equipment, when used in Europe, produced vehicles in compliance with Euro I standards, but in China they do not because of the use of lower quality parts.

Recommended national standards for light duty vehicles, heavy duty diesel vehicles, and motorcycles based on international standards are pending. Meanwhile the government has moved to phase out leaded gasoline, starting early next year, and Beijing has already started. This January, Beijing also adopted a host of tailpipe emission standards on its own, and is requiring fuel injection and other emission controls, and manufacturers have been scrambling to comply.

Public officials are also well aware of the problems of traffic congestion, but it takes very different forms in different cities. In Beijing, there are more than 1.2 million vehicles, and the number of private and company cars is increasing by 140,000 each year. Shanghai, by contrast, is so dense there is almost no parking, and there are only 5000 private cars altogether. Taxis are thus the mode of choice so far for the emerging upper-middle class, and nearly 2 million taxi trips are taken each day, the highest

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South Africa Rides

by Paul S. White

Our international team, after two weeks in Johannesburg, was making progress. Sam Moseke and other Afrika Cultural Centre staff had converted five donated shipping containers into a viable workshop and storage space. Erin Anderson from Stanford was putting a curriculum together for the bicycle repair and riding classes. Ross Evans, also from Stanford, was fabricating his Xtracycle cargo bikes. Merlin Matthews and Tom Grant of UK's Re~Cycle were reconditioning some of the 600 used bikes we had sent over.

Everything was taking longer than we thought, however, and morale was low. We decided to stay in Berea, a neighborhood with crime problems, to save money for the project. At night we heard flurries of gunshots. Traffic on the roads was wild. The daily bike trips between the Afrika Cultural Center and our Berea apartment brought home the serious obstacles we faced in popularizing cycling in Johannesburg. Tempers were short. Most worrisome of all, we had no master mechanic, without which we knew the project would die.

But bicycling declined precipitously as Blacks were relocated to isolated townships where local, independent economic activity was forbidden. The infamous razing of Sophiatown and the chronic harassment of hundreds of Johannesburg women coffee-cart traders in the 1950s are two examples of how Apartheid effectively killed small scale, non-motorized enterprise.

Today, Black enterprise is encouraged, and in a growing number of areas

A Brief History of Cycling in South Africa

Today only about 1% of South Africans bike to work. Prior to the Group Areas Act of 1950, however, utility bicycling was much more common in Black communities. Panther Cycles (now defunct) offered a full line of workbikes, and sales were brisk. Nurses regularly made house-calls on bicycles, and streets were 'rivers of bikes' in the morning and again in the afternoon.

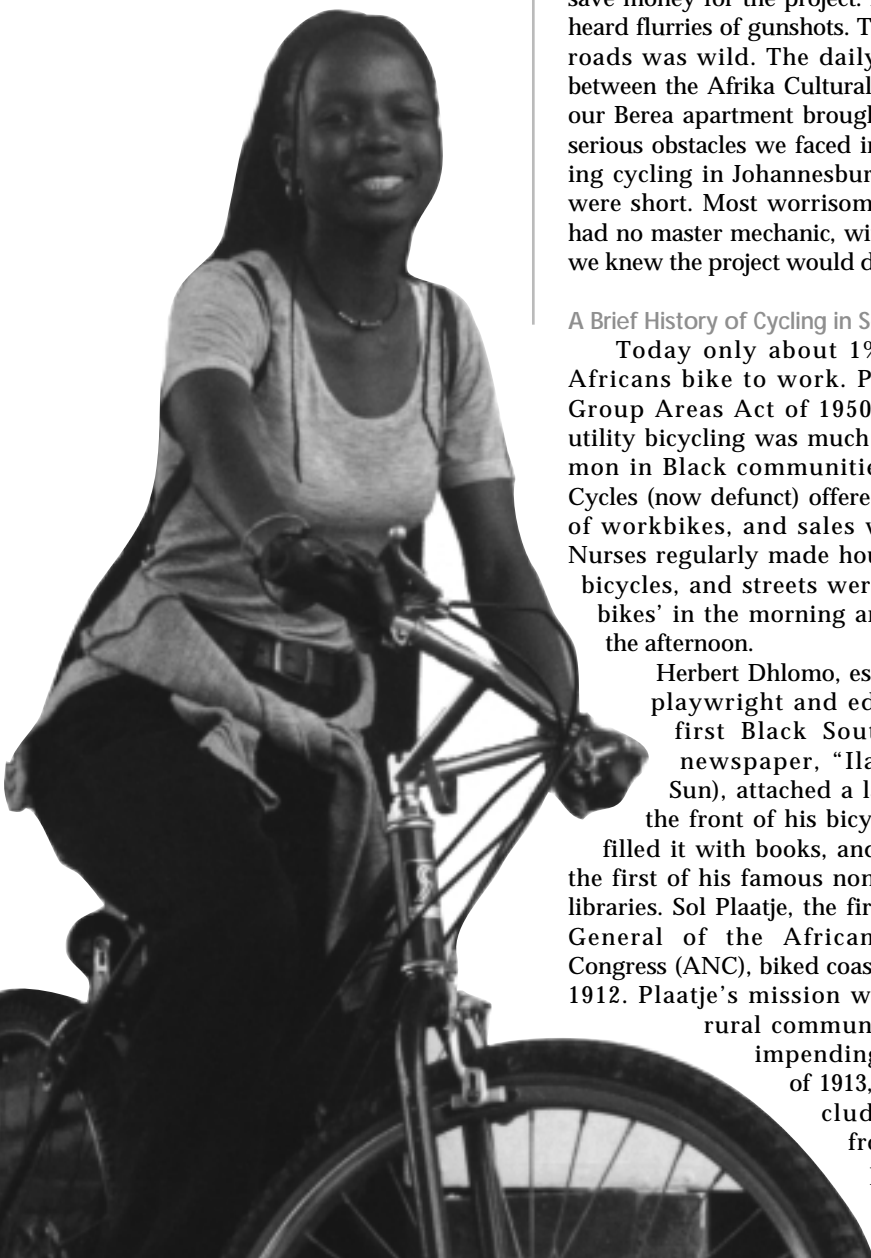
Herbert Dhlomo, essayist, poet, playwright and editor of the first Black South African newspaper, "Ilanga" (The Sun), attached a large box to the front of his bicycle in 1930, filled it with books, and rolled out the first of his famous non-motorized libraries. Sol Plaatje, the first Secretary General of the African National Congress (ANC), biked coast-to-coast in 1912. Plaatje's mission was to warn rural communities of the impending Land Act of 1913, which precluded Blacks from owning property.



Back in the day: Dhlomo's first non-motorized bookmobile, circa 1930

the gulf between homes and markets is shrinking. Many small-scale enterprises are emerging in the townships, making local shopping trips feasible by bike. But rates of cycling are still too low to support viable bike shops in the townships. With 68% of the Black majority living below the "bread line" (less than \$170 a month for a family of four), biking is expensive for many.

But the most frequently cited deterrents to cycling today, especially in Johannesburg, are the dangerous mix of rapid motorization, a road network that does nothing to protect cyclists, and



Again

scofflaw drivers. The official statistics indicate that there are about 10,000 road fatalities in South Africa every year, at least 3,000 of whom are “vulnerable” (non-motorized) road users, but the actual numbers may be much higher.

A Transport Option for the New South Africa?

Unless we could improve the “cycling habitat” of Johannesburg and surrounding areas, we knew widespread cycling stood little chance. So Afribike and Ibrahim Seedat of the South African Department of Transportation hosted a workshop: “Bicycling as a Transport Option in South Africa”, in the hopes of jump-starting a bicycle safety campaign. NGOs, government officials, and other cycling and public transport advocates from all over the country came—including three founding members of the Soweto Cycling Association: B.B. Makalima, Archie Sipoyo and Khos Mathebula. Archie stood out right away because he was on crutches: he had been struck by a motorist while cycling from Soweto to Johannesburg.

Louis de Waal of Cape Town’s Pedal Power Foundation explained how he won some of the first bike lanes in South Africa, Kim Johnson shared his experience in providing small traders with his workbike tricycles, and Mo Skikne of Mo’s Cycles shared his unsuccessful attempts to get bike facilities built in Johannesburg. Lloyd Wright of the International Institute for Energy Conservation recounted the recent “Sustainable Transport Tour of the Netherlands” which gave South African parliamentary members, NGOs, and others a first-hand look at some alternative transport options. At lunch we all took a tour of the Afribike facility, and dropped in on Erin’s classroom where she was administering the first Afribike courses to some local artisans.

By the afternoon, the workshop participants decided to form “BikeTraC”, the Bicycle Transport Coalition of South Africa, to “Promote People-Powered Transportation”, particularly in the province of Gauteng,



where Johannesburg and most townships are located. Two weeks later, BikeTraC staged the first of several “Cyclist Solidarity Rides for Safe Streets.” The ride began in Soweto, passed through downtown Johannesburg, and ended at the steps of City Hall where the riders demanded bike facilities and motorist education. Two weeks later, BikeTraC representatives met with government and transit officials to discuss cyclist access on commuter trains and “bikestation” parking facilities adjacent to township transit nodes.

Best of all, Archie and Bibi said they knew a great mechanic who might be looking for work.

Bikes Grow on Trees in Soweto?

In front of Soni (Sam) Maswanganyi’s Soweto home was a tree that was growing a bike fork. As the tree had grown, it had enveloped most of the fork. Here was a bike enthusiast from way back. The walls of Sam’s room were lined with trophies from bike races and plastered with advertisements cut from the pages of *Bicycling*. He’d turned his back yard into a bike shop, but getting bikes on credit from distributors was impossible. He didn’t have the capital to upgrade his facilities, and the market for bikes in Soweto was hard to judge. As such, he was available.

The next day, Sam biked the 18km from Soweto to the Afribike Centre. Now he makes the trip every day. He started organizing the shop, wrenching on bikes, and learning to fabricate Xtracycle load-carrying workbikes. He solved every mechanics problem we could throw his way, and proved a natural in the classroom too. Within a few days, Sam and Erin began giving courses in bicycle operation, maintenance and repair.

Afribike 101

At the outset, Afribike offered a forty-hour program consisting of three courses: Basic Maintenance and Repair; Advanced Maintenance and Repair; and Earn-A-Bike, through which students receive a bicycle that they repair. The program was to last ten weeks, or four hours per week divided into two two-hour courses. Prior to the April start date, few students signed up for the course. We attributed the initial low enrollment to our lack of marketing and the fee we were charging for the classes—critical to the project’s medium and long-term financial sustainability.

By early June, about 50 people had participated in the training program and received bikes. (About 35 additional bikes and some tools were sent to a rural school near Bloemfontein to capitalize their “Bicycle Scholar” program.)



Solidarity Ride on the steps of City Hall

Though few, the trainings conducted with several artisans affiliated with The Afrika Cultural Centre (where Afribike is housed) and members of the Gauteng Self-Employed Women’s Association were particularly useful in helping us modify the course to better suit the needs of the participants. The hours were made more flexible to accommodate problems with transport and work schedules, and the cost was brought down a bit. Still, enrollment was not as high as we had hoped. We realized that for the project to grow we needed to boost our capacity to reach the relatively isolated outlying areas where there was

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Elizabeth Mavundla Puts Her Mettle to the Pedal

By Erin Anderson

It is hard to believe that there once was a time when Elizabeth Mavundla did not know how to ride a bicycle. In December of '98 at the Afribike shop, she lifted the kickstand with her hand and courageously made her first attempt. Mother of six, she relied on minibus-taxis to get out of her home township of Alexandra and into business districts to do family errands, and also to attend Afribike repair classes. In spite of the transport costs, as well as her own obligations and time constraints, she never missed a single class. Soon she started bringing her children, and even her neighbor's children, knowing they too would benefit from the Afribike classes. With a smile that she could not manage to hide, Elizabeth rode around the Afribike parking lot whenever she had the chance—even during class breaks, with her children running by her side to cheer her on. At the end of the month she passed her final examination with flying colors. Upon earning her Afribike completion certificate she also received a bicycle, and she has been riding ever since. Elizabeth and her family now save about \$75 per month on transport costs.

Sadly, soon after completing the course, Elizabeth's husband was assassinated, a result of his participation in a crime-prevention organization. Heartbroken, Elizabeth was suddenly faced with a serious economic crisis of being without a source of income for herself and her six children. In desperation she began to sell things, even a videotape of the funeral. Some of the only family assets other than their small house were the bicycles she and her children had earned at Afribike. However, realizing the economic power of a bicycle and the money it saved in transport costs, she refused to sell them. In fact, Elizabeth and fellow Afribiker Margaret Ngema dream of opening the first bike shop in Alexandra Township, where they do hope to sell bikes.

Elizabeth is the star of a recently produced video documentary about the Afribike project. Contact ITDP for details.

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the greatest interest but the least access to our Centre.

Afribike and the Winterveld Tshwaraganang Collective

When Mrs. Maura Bracken arrived from Ireland to work at Mercy Community College she was amazed at the long commutes undertaken by women students at the school. "Some of the ladies walk an hour and a half each way per day...some of them carrying children on their back," said Maura. Seeking to ease their transport burden, Mrs. Bracken called Afribike.

Mercy Community College is a vocational school operated by the Catholic Sisters of Mercy. It is located in Winterveld, a sprawling informal settlement 30km north of South Africa's capital of Pretoria. On July 12, 1998 Afribike master mechanic Sam Maswanganyi arrived at Mercy Community College in a truck laden with mountain bikes, tools, and workstands and began teaching a 7-day Afribike course to 24 brave young women, most of whom are employed as apprentices in the College's Tshwaraganang Collective Paper Making Project. They were brave because in addition to confronting their peers' resistance to the idea of women on bikes, 22 of them never had the opportunity to learn how to ride.

After the course was over, all 24 of the women were riding and performing their own basic repairs in a small shop outfitted by Afribike. Betty Mathlo, one of the course participants, cut her daily one-way commute from 1 hour and 30 minutes to 30 minutes, giving her more time and energy to improve her paper-making trade. Indeed, the extra two hours that Betty can now devote to her trade translates into about \$1 per day

South Africa

over and above what she used to make—affording her the extra income for her bicycle to pay for itself within a few months. Other participants, like Martha Mailula, a paper maven who recently won the South Africa Department of Education's "Best Learner" award, cut their daily commute by up to two hours, giving them more time to be with their children, work, study, do errands, and relax.

Afribike and the Mercy Community College are planning three more trainings within the next 5 months, serving an additional 75 aspiring mountain bik-



Biking to the Sisters of Mercy Center

ers. Betty, Martha, and some of their fellow paper makers, most single mothers trying to make ends meet, are now looking to improve their paper sales so that they can expand their bike shop.

Next Steps: Townships, Afribikes, and the All-Africa Games

Afribike will continue to expand into the townships, where trips are generally shorter, less hilly, and safer than trips between the townships and

It is unusual to find women's associations at the forefront of sustainable transport advocacy, particularly in Moslem and African countries where women often face legal obstacles and harassment as cyclists and public transit passengers. In Iran, women's cycling has been outlawed in many cities, and one district governor recently said "Women cyclists cannot protect their chastity even if they are fully covered, so they should avoid this altogether or they will be dealt with."

But in Tunisia, the group Women for Sustainable Development (WFSD) is at the forefront of sustainable transport advocacy. WFSD's "Bicycle for a Healthier Environment" is focused on getting more women and young people on bikes. They have trained over 2,000 women in the merits of cycling, and convinced 320 women, many of them influential young professionals, to become regular bike commuters. Their programs on the benefits of cycling in schools is also helping to convince the next generation of Tunisians of the advantages of bicycle culture.

Women in Tunisia were already more empowered than in many other African and Islamic countries. Equal rights for women were enshrined in the Code of Personal Status promulgated by President Bourguiba in 1956, and in subsequent measures. There is a Ministry of Women's and Family Affairs focused on integrating women into the process of national development, which encouraged the development of women's NGOs like WFSD. Women make up 23% of the Tunisian workforce, 20% of the students in technical colleges, 33% of physicians, and more than half of dental surgeons and phar-

Women Lead Tunisian Bike Advocacy

macists. Because of their independent incomes, women can afford to buy and own bicycles much more readily than in other African and Moslem countries. There are no religious restrictions concerning women cycling. Most Tunisian women also do not wear traditional clothing, which is often an encumbrance to cycling.

Bike ownership in Tunisia has been



New Tunisian women bicycle commuters

increasing faster than motor vehicle ownership, and nationally there are actually more bicycles than cars. While many of these bicycles are childrens' bicycles or men's bicycles used for recreational purposes, the potential for increased bike use for commuting is enormous. And the economic benefits of such a shift would be substantial. Tunisia spent only \$28.60 million on bicycles in 1994, compared to \$1.06 billion on cars, not

to mention the oil they consume.

WFSD started their campaign by convincing influential women from Tunisian society to get involved in the program and get others involved. "The Bicycle for a Healthier Environment Program" started as an education campaign about the environmental and personal benefits of using the bicycle as transport. Targeting pre-primary and primary school children, secondary school pupils, and university students, the campaign employed games, theater, paintings, rallies, awards and prizes, booklets, conferences, seminars and workshops—all coordinated with a media campaign. In early 1999, thirteen of the 320 regular women cyclists decided to extend the campaign's focus to traffic reduction measures.

Because many elderly people in the Arab-Muslim context are set in their ways, the project decided to target young women. Sixty percent of the 2000 women that were involved in the program were 25 years or younger, and most were from professional backgrounds, so that bicycling comes to be seen as a high-status, rather than low status activity. ♦

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Johannesburg's inner city. Currently, the distances between homes, rail stations, taxi ranks and bus stops are either bridged on foot or by expensive taxi trips, save a few unique areas where security guards and well-placed fences are already serving as informal bike stations.

Afribike will inform current programs to make South Africa's roads safer, (such as South African Dept. of Transportation's "Arrive Alive" campaign) ensuring that such programs balance fairly the needs of the vast majority of vulnerable road users with those of the small minority of motorists.

Afribike's agenda also includes improving the majority's access to appropriate bicycles. Used bikes from overseas are inexpensive, but are not available in sufficient quantities and are

highly variable in their parts and service requirements. Fully imported bikes (South Africa has virtually no bike manufacturing or assembly industry) are expensive. The needs of discerning women cyclists, to whom comfort and cultural realities dictate the need for a 'special' bicycle, are also going unmet. ITDP is conducting market research, and with local cyclists and the international bicycle industry, developing basic one-speed mountain bikes that would be made available to Afribike trainees. These "Afribikes" would likely be made in Taiwan, imported piecemeal and assembled locally to create much-needed jobs and to avoid the 15% tariff. Credit/subsidy schemes could make these 'peoples bikes' even more affordable.

Afribike is currently employing sev-

eral individuals to provide training and reconditioned workbikes to 200 women service workers at the All-Africa Games Village in Alexandra Township. The workbikes are being painted in the spirit of the Games (Sept. 10 -19, 1999), outfitted with racks and crates, and will be used for various tasks in and around the Games Village. The 200 women will keep their bikes after the Games are over, a welcome change from the typical "Boom - Bust" employment cycles of these kinds of major events. Indeed, the training and workbike procurement—funded jointly by ITDP, the workers themselves and corporate sponsors of the Games—provides a vital economic asset and challenges the widely held view that "Black women do not ride bikes!" All of Africa will be watching. ♦

Bulgaria, caught between the Russian, the Turkish, and the Western European powers for centuries, is once again the site of international intrigue. At stake is whether growing Turkish and Greek traffic to Western Europe, which passes through all of Central Europe, will travel by rail, truck or pipeline. Also at stake are the rapidly growing Central European and Balkan markets for oil and cars.

When the Bulgarian economy crashed in 1997, short of cash and facing high unemployment, Bulgaria became highly susceptible to international interests. The country's ability to decide its long term transport priorities on its own was sacrificed to the highest international bidder.

Sofia sits at the crossroads of several major international corridors which the European Union (EU) have identified as priorities. With neighboring Yugoslavia (Serbia) still politically unstable, the only land route connecting Turkey and Greece to Western Europe runs past Sofia. Bulgaria is also competing with Romania and Turkey as a potential corridor for Caspian Sea Oil, cotton, and other products from the Central Asian Republics. Whether developing these international corridors would also be a priority for Bulgaria if it weren't for international financial pressure is less clear.

During its recent economic crisis, Bulgaria turned to the International Monetary Fund (IMF). In exchange for their structural adjustment loan, the IMF now has the power to approve the Bulgarian national government budget until 2001. While following to some extent national priorities, the IMF approved \$578 million for new national highway investments, millions more for municipal roads, and only \$90 million for rail sector investments, while forcing sharp cutbacks in social services including subsidies to rail and transit passengers. Since 1993, the European Investment Bank (EIB), the house bank of the European Union, has approved over \$225 million in road improvement loans to Bulgaria, locking in millions of dollars in domestic matching funds to road sector improvements in the international corridors. While the EIB and other international financial institutions (IFIs) have also lent to the railroads, the totals heavily favor the road sector.

Fights Over the Priority Corridors

The priority of recent EU funding has been Corridor IV, particularly links

between Greece and Sofia, for eventual connection North to Western Europe. One EIB-funded highway upgrading on Corridor IV, between Sofia and Thessaloniki in Greece, passes through a major nature preserve and is the object of considerable controversy with environmentalists. But with the rest of the Balkans still in political turmoil, the need for an alternative land route between Greece and Turkey and Western Europe remains acute. Currently there is only one bridge over the Danube in Bulgaria, on the Eastern end of the country between Ruse and Giurgiu. This bridge is currently under repair, causing long delays. Bulgaria and the European Union would like to build a road and rail bridge over the Danube at Vidin, in the West, but the Romanians have been fighting it. They have no infrastructure on the other side of the border to meet this road. Bulgarians believe the project is being blocked by high level Romanian officials with commercial links to the cross-Danube ferry services.

Sofia is another bottleneck. Three major corridors now pass directly through Sofia. Through trucks currently have to drive directly through Sofia. The Southern Ring Road around Sofia is therefore a priority for international funding agencies. The U.S. Trade and Development Agency, whose aim is to promote U.S. exports, funded a \$400,000 feasibility study for the Southern Ring Road, and projected that the project would yield \$12.5 million in U.S. exports if U.S. firms won the \$50 million contract to build the road. In the interim, the EIB, and the EU PHARE program agreed to fund a significant section of the Southern Ring Road, ensuring that European contractors would win the contracts.

Urban Public Transit in Sofia Undermined

While the Ring Road will be important to diverting truck traffic out of downtown Sofia, it will also compete directly with more centralized public

transit systems and stimulate sprawling, auto-dependent developments.

Currently, EIB lending, PHARE grants, and ISPA funds are targeted almost exclusively to international corridors, while urban public transit projects are not eligible. But in cases like the Sofia Ring Road, this 'International' corridor is going to be over 90% occupied by local automobile traffic, a massive subsidy to local motorists, which will compete directly with Sofia's public transit system. And Sofia's public transit system is a mess.

Since the transition, and even more so after the economic crisis, the public transit system has rapidly deteriorated. Workers say it is now in the worst shape since World War II. Rumour holds that current Transport Minister, Wilhelm Kraus, previously head of Sofia Urban Transit Company, has commercial ties to Mercedes Bulgaria. Conflict of interest is rampant in Bulgaria, and transparency is limited. Many speculate that personal business interests lie behind the recent closing of some tram and trolley lines and their replacement with imported Mercedes bus services, though the municipality says it is simply a matter of trams being much more expensive to rehabilitate than buses. Another problem is that spare parts, tracks, and other steel are being stolen from the tram yards at night and to be sold as scrap. Since the mid-1980s, tram services have been systematically cut back. Many new housing estates are being developed on the outskirts of Sofia, and construction of tram lines to those areas was initiated, but the lines were never completed. Criticism in the press is unlikely, as Bulgaria's media is fairly tightly controlled by several big businesses and the government.

Bulgaria used to manufacture its own trams, but the factory was shut down in 1992, and trams must now be imported. The Municipality claims the quality of the trams produced was poor. With the rapid devaluation of the currency and the shortage of foreign

Bulgaria and the Geopolitics of Caspian Sea Oil

exchange after 1997, however, importing new trams and spare parts has become prohibitively expensive.

The Municipality of Sofia just leased its ten best downtown real estate lots to Shell Oil Company. In exchange, Shell agreed to build 3000 to 4000 units of parking in downtown Sofia; a win-win deal for Shell, and motorists, to be sure. Last year, the major downtown shopping street, previously closed to motorized traffic except the trams, was opened to private cars.

While the Municipality claims it has no money to improve tram services and only a limited amount to improve bus services, it is a major contributor to the \$50 million South Ring Road project, and is also building an extremely expensive metro system despite no clear plans for completion of the system. The first three stations are already open, but further routes are not even clearly planned. It costs 6 or 7 times more per passenger kilometer than tram lines.

Railroad faces major cutbacks

BDZ, the Bulgarian national railroad, meanwhile is planning to close down 1000 kilometers of rail lines, or 23% of the entire system, with 140km slated for closing or spinning off this year. Another 30% of the track needs major rehabilitation work, and nearly half of the engines are broken at any given time, and the number is rising fast. Travel speeds even on main lines are slowing down due to deferred maintenance.

Formerly, 83% of Bulgarian trade was with the Soviet Union. As intra-Comecon trade shrank dramatically, and the Russian economy continued its decline, Bulgaria saw trade with the former Soviet Union fall from 180 million tons of goods in 1992 to only 28 million tons in 1998. Future traffic demand for rail and roads is difficult to predict.

Bulgarian railways are heavily oriented to moving imported raw materials such as oil and iron, brought into the port of Varna or Burgas, and exports of wine, vegetables, cigarettes, and agricultural machinery, all to and from the ports of Varna and Burgas. The goods went from Varna to Odessa by ship, and then shifted to rail again (Bulgarian-Soviet Union direct rail transport was complicated by the Soviet Union's non-

European standard rail gauge). This avoided the gauge problem. Rail now accounts for only about 45% of freight traffic, (compared to 70% in neighboring Romania) while 50% goes by truck. Rail's share continues to fall sharply, with ton-kilometers falling about 10% a year. Rail's share of intercity passenger transport is even lower, but stable.

World Bank and EBRD loans played a major role trying to protect the core business of BDZ and encouraging it to commercialize its operations. The loans

much as 6% of global energy supplies by the year 2010, a level similar to the North Sea, though far short of the Middle East's projected 52% global share. Kazakhstan also has extensive oil and gas reserves. Getting oil out of the Caspian Sea area to markets in America and Europe however, is proving difficult. The easiest method is to ship the oil from Baku, Azerbaijan to the Georgian Coast of the Black Sea by pipeline, and from there by ship into the Mediterranean. Unfortunately, this requires ships to pass



themselves helped the railway prevent cutbacks in its capital program that would otherwise have been imposed by the IMF. Both loans also required BDZ to reach a cost recovery ratio of 50% during the loan period. While this has meant increasing rail tariffs, and the closing of less profitable lines, it has also forced the Bulgarian Government to allow BDZ to increase fares sufficiently to counteract inflation, thus avoiding further cutbacks in its capital program.

Bulgaria and Caspian Oil Interests

Bulgaria is also involved in the competition for Caspian Oil transit traffic, and some railway officials hope that European interests in oil transshipment may help their industry. The World Bank and EBRD rail loans are mostly focused on upgrading the lines connecting Sofia to Varna and Burgas, the sites of Bulgaria's major ports and oil refineries.

While it is unclear exactly how much oil is in the Caspian Sea basin, most experts predict that it could be as

through the narrow Bosphorus (by Istanbul), which is heavily congested. Several recent near -accidents threatened ecological and social catastrophes, inducing Turkey to tighten restrictions on the number of ships they will allow through the narrow channel. Russian shipping has been particularly hard hit.

Oil companies and their governments are looking for other ways of getting the oil and gas reserves out of the Caspian region. The U.S. and Turkey support a plan to build a pipeline from Baku to the Turkish port of Ceyhan on the Mediterranean. The private oil companies don't want to finance it, perhaps because it passes through politically unstable Kurdish territory. An alternative route, supported by the Greeks and the Bulgarians, is to build a pipeline from Burgas in Bulgaria to Alexandropolis in Greece. This option is competing with another alternative pipeline proposal route from Constanta in Romania all the way to Trieste in

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An increasing number of Brazilian cities have plans to promote bicycling and walking, thanks to the dedication and persistence of a large group of bicyclists and pedestrian activists who took their cause to the Federal Government in Brazil. Last year, the national government was developing a new set of traffic laws, the NovoCodigo de Transito. A group of bicycling activists like the Night Bikers Club of Brazil, traveled to Brazilia to make sure that the

concerns of pedestrians and bicyclists were reflected in the new law. As a result, all government agencies, whether federal, state, or city, responsible for transport planning and regulation of any kind, must promote and develop the mobility and safety of bicyclists. Other articles require schools to educate vehicle operators to yield to both pedestrians and cyclists.

To publicize the codes nationally, a group of 35 cyclists bicycled to Brazilia, covering more than 1300 kilometers over 16 days. Among the group was engineer Gunter Bantel, Director of the Sao Paulo's Cyclist Project in the Department of the Environment. While excited at their passage, Gunter doesn't yet know how the laws will affect currently planned facilities for non-motorized transport and whether these new rights will really be protected. Nonetheless, positive developments in Rio de Janeiro and Sao Paulo are encouraging.

Rio de Janeiro

The biggest obstacles to bicycling in Rio are worries about theft, road safety, and the lack of secure parking facilities. In order to address this, the 1992 master plan for Rio designated 190 kilometers of bikeways to be constructed by 1996, and included plans for secure parking facilities and dedicated police protection in critical places. While most of the bikeways were to be in the upper-middle class South Zone and in the city center, local bikeway networks and facilities were also planned for several Western suburbs with a focus on creating links

with the local rail stations and town centers. A survey done at the suburban railway stations in two western Rio-area townships found that about 30% of the interviewees had bicycles, and 20% said they would use the bike to come to the station if there were secure parking

facilities at the stations. Of the over 300 interviewed, 93% supported the construction of bike facilities in the station. The World Bank provided a loan for the improvement of the suburban commuter rail line in the corridor, and the bicycle access improvements were included as part of the loan.

Under Mayor Conde, an architect by training, there has been growing attention to improving bicycling. The most recent city-wide ten year transport plan, Rio Cidade II, stresses bicycle promotion city-wide, whereas the previous



Bikeway construction in the western townships of Rio

document made no mention of it at all. As well, smaller cities are requesting new bicycle projects. New metro stations are slated to have covered bicycle facilities, and the city has also become involved in building new bike facilities around the suburban rail stations in outlying townships. These outlying town-

ships tend to be the poorest and already rely heavily on the bicycle for local transportation. The construction of these bikeways was underway (see photo) and usage was reported to be heavy. Many of the southern zone bikeways along the beaches and connecting to

downtown are close to completion, and some had been completed for several years. Other parts of the original 1992 bike plan, especially those in the western zone, have been delayed for budget and other reasons. Construction of bike storage lockers at the suburban rail stations has also been delayed by general

delays in rail station modernization due to financial problems. Responsibility for them was passed from the rail company to the city government, and there is some doubt as to whether the bike lockers would be built at all.

Sao Paulo

Sao Paulo's Department of the Environment is responsible for the "Project Ciclista" which has planned over 300 km of bikeways, and has a budget of roughly \$30 million. Today, over 10% of the total mileage has been completed. The construction is split into three types of bikeways; those contained in parks and campuses, those in distinct corridors and networks, and other connectors. Those parts of the network already built are heavily used, but primarily by recreational cyclists. Upon opening in 1995, the bike network in the Ibirapuera Park was used by over 4000 cyclists per hour on a weekend day. In the State of Sao Paulo as

well, several small cities are looking into building bicycle facilities. At the Unicamp campus, in Campinas, a study was recently completed looking at the feasibility and benefits of a bikeway network. There is also a group interested in bikeways in San Carlos, also a university town. ♦

Brazil Starts to Take Bicycling Seriously

by Aaron Golub

Trans-Israel Highway Update Flagship in the Doldrums

Yaakov Garb

The Trans-Israel Highway, (See *Sustainable Transport, No. 6*, Summer 1996, and *Sustainable Transport No. 8*, Winter, 1998) the flagship of Israel's commitment to privatize infrastructure development, has been delayed. Financial problems and the creative efforts of the highways opponents continue to put the fate of the largest Israeli transport project in history into doubt.

The 300 kilometer road is planned to run the length of the country, from the border with Lebanon to south of Beer Sheva. While sold in large part as a means for connecting Israel's northern and southern periphery to its center, the central section would be developed first, through the rapidly suburbanizing agricultural lands just east of the Tel Aviv.

In January of 1998, the Derech Eretz consortium won the right to build, operate, and toll the central section of the road for 30 years, after which it would revert to the Israeli government. The consortium consisted of Africa-Israel Investments (one of Israel's largest real estate firms), Canadian Highways Investment Corp. (the builders of Highway 47, through the suburbs of Toronto, which became an empty white elephant overnight the moment tolling was turned on after 4 months of operation), the French Societe Generale d'Enterprises, and Hughes Aircraft Systems International (responsible for the sophisticated electronic tolling systems). The \$1.2 billion was to be raised by the Israeli Bank Hapoalim (80%) and the Canadian Newcourt (20%).

However, the Sept. 1998 date for start of construction came and went without a final contract being signed, due to difficulties in closing the deal with the winner. A few months later the project was side-swiped by a sharp devaluation of the shekel in the wake of world financial crisis. The winning consortium and the Trans-Israel Highway Company (responsible for overseeing the entire process), in what they took to be a natural response to these changed financial circumstances, asked the Ministry of Finance to approve a hike in the toll rates. The Ministry thought otherwise, as the level of toll was one of the primary considerations in selecting the winning consortium, whose rates were only a few cents lower than the runner-up. The request was rebuffed, and shortly there-

after Societe Generale and Hughes abandoned the consortium. The Trans-Israel Company extended the deadline for signing a contract with the winning consortium, while its spokesman made warning noises about turning to the runner-up if the winning company couldn't get its financing together.

In March, the Highway Company attempted to push a new request through the Knesset Economics Committee: that toll rates be tied to interest rates for the duration of the concession. Various NGOs appeared before this committee to object. This was one more in a series of moves that shifted risk from the private sector to the public. In addition, any rise in toll rates would be doubly costly, as it was likely to lessen traffic volumes, thereby triggering government guarantees already in place to compensate the winning consortium for levels of traffic below those projected. The Highway Company brought huge pressures to bear on the Committee, commissioning expert opinions claiming the proposed arrangement was common practice, and arguing (once again) that any delay or impediment would scare away foreign investors, sink the project, and thus ruin Israel's credibility as a country able to pull off large privatized projects.

The linkage to interest rates the Company requested was approved, but the financing seems to remain shaky. The two dates set for laying the project's cornerstone this spring were cancelled, and in June, Newcourt, which was to provide the overseas portion of the financing, was leaking reports that it was on the verge of pulling out. The Trans-Israel Company declared these were merely final hiccups in the delicate closing stages of the deal, and—in a startling logical turnaround—argued that since Israel's congestion was constantly worsening, delays in opening the road had the benefit of raised the project's value to the Israeli economy.

Greens and other NGOs have been reinvigorated by the fragility of what once seemed an unstoppable fait accompli. They have organized a series of imaginative efforts to bring about a reconsideration of the project. At a recent shareholders meeting, for example, a group of student environmental activists and others each purchased a single share of Poalim Bank,

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bicycling down the river is not generally the most direct route for cyclists for most of their daily shopping and commuting trips. He would like to see the bike network located where potential cyclists would use it, rather than restricting it to where there happens to be a river. Ramon also fears that the recently collected data on bike trips may not be used when siting new bike routes. While the Mayor of Marikina is also open to grade-separated bike paths along roads "on the sidewalk between the property line and the trees," it appears that there is little willingness to allocate road space currently used by private cars and other vehicles.

The impetus for improved cycling is not happening in a political vacuum. More than a thousands cyclists, some of them colorfully costumed as horses, fireflies, or grasshoppers, joined a 50-kilometer ride around Metro Manila as part of the Earth Day festivities. The ride was meant to highlight the effects of air pollution, call for restrictions on private cars, and ask for bike-friendly policies and facilities.

Coalition Forms to Fight Planned Prague Ring Road

Prague officials are currently discussing a draft Master Plan which proposes a 4 lane "ring road" literally around the border of Prague's world famous historic center. Despite having an excellent tram, subway, and bus system, the number of car trips in the city doubled in the last decade, while public transport's share of trips has dropped from 60% to 40%. The inner ring road, which is being pushed ahead of a planned outer ring road, would draw large volumes of traffic into the UNESCO-protected historical city, threatening its attractiveness as a tourist and cultural center.

Twenty seven organizations have banded together to lobby against the project. Their allies include many planning professionals, who have shown the plans to be severely flawed, and the Ministry of Environment.

The plan continues to move forward, however, due to a complex mix
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Quito Takes The High Road

By César Arias
and Lloyd Wright

High in the Andes, at over 2,800 meters above sea level, the rarefied air in Quito, Ecuador is literally breathtaking. Unfortunately, with a potent mix of particulates, lead, and other contaminants from motor vehicle exhaust, it is also life-taking. At Quito's altitude, people breathe more to get the same oxygen, and thus they also breathe in more pollution. Diesel also doesn't burn well, so buses are highly polluting. Quito's narrow roadways and limited capacity for infrastructure expansion also meant that small increases in auto use were creating significant traffic congestion.

But since the early 1990s, the Municipality of Quito began to tackle its worsening air pollution problem. Today, Quito has a clean, highly-efficient system of electric trolley-buses operating on 11.2 kilometers of exclusive right of way. The designated bus-way provides the most express option for the commuter. Bus stations with pre-boarding electronic ticket collection and an automatic loading ramp that attaches to the bus doorways (design features originally popularized by the Curitiba system) also greatly reduce travel time.

With over 170,000 commuters already crowding onto the system daily, the Municipality has fast-tracked plans to expand the system to 24 kilometers. The initial investment, a modest \$57 million, came from credit guarantees and financing from the Government of Spain as well as local sources. Impressively, the system's operating costs are fully covered without any government subsidies, and with passenger tickets only around \$0.20, the system is affordable to most. The system also employs over 800 individuals in a nation where total unemployment and under-employment exceeds 30 percent.

A system of feeder buses operating from designated stations, and a system of inner-city cycleways are also planned. Construction has already begun on 22.4 kilometres of planned bike paths that will connect several major downtown

parks, as well as provide a commuter circuit in the south of the city. Mayor Sevilla also plans to prohibit the use of buses more than 15 years old.

Winds of Change

Most people in Quito depend on public transport, and until recently this meant taking private buses. Crowded and uncomfortable, in 1992, the average bus was 17 years old; and some buses were 35 years old. Only a seasoned insider can figure out the complex routing system. The buses were 30% louder than international norms, and tailpipe emissions were well in excess of international guidelines for particulates, carbon monoxide, sulphur oxides, and nitrogen oxides, not to mention lead. Mounting public anger is expressed in the media and on graffiti around the city. With most of the poor, most of whom are children, working in close proximity to roadways, society's poorest and most vulnerable members bear the brunt of these emissions. The important tourist industry is also threatened. The Historical Centre of the city, with its 400 year-old colonial architecture, was declared a World Cultural Heritage Site by UNESCO in 1978. But the daily bombardment of noise and air emissions, as well as damage from traffic vibrations, is a direct threat to the city's historical landmarks. Until recently, solutions to Quito's traffic and pollution problems remained elusive.

Meanwhile, Ecuador is in political and economic turmoil. In 1997, the previous political administration was forced from office due to popular discontent

and allegations of corruption. In 1998, rains from El Niño destroyed much of the nation's infrastructure. At the same time, global prices for the nation's primary exports, petroleum and bananas, hit record lows, reducing Ecuador's hard currency. Then, in 1999, on the heels of the global emerging market crisis, Ecuador's banking sector virtually collapsed.

Quito was able to implement its new system despite these problems.



The dedicated bus lanes make the trolley bus the fastest option.

Administrative gridlock was overcome when the government created a single Municipal body to assume responsibility for transport development and integration: the Unidad de Planificación y Gestión de Transporte (UPGT, Transport Planning Department). With support from the Mayor, Jamil Mahuad (now President of Ecuador), UPGT Director Cesar Arias developed a staff well-versed in a broad array of progressive transport options rather than standard engineering solutions. Under their leadership, the municipality began to regain control over a chaotic,

Lloyd Wright

unregulated transport system, and replaced it with a coherent vision of a more sustainable Quito.

Many in Quito supported a much more expensive metro option. Given Ecuador's financial problems it would have taken years to complete. UPGT's extensive modeling of the main north-south corridor, willingness-to-pay surveys, and other information convinced most that an integrated bus system was the most effective option. While the initial capital costs of articulated electric trolley buses exceeded the capital costs of standard articulated buses by 15 percent, the city's environmental imperatives drove the decision towards the electric trolley bus. With over 90 percent of the nation's electricity generated from relatively small-scale hydro-electric plants, the electric-powered trolley buses provide Quito with a virtually emission-free service. The relatively low and stable cost of electricity in Ecuador also insulates the system from the recent fluctuations experienced in world petroleum markets.

UPGT then had to convince private bus operators and some labor unions to go along with the plans. Taking the most profitable main transit route out of the hands of the private bus companies and turning it into a municipally-operated system was difficult. While many elements of the trolley system will be con-

tracted out to private operators, and the feeder services remain in private hands, nonetheless some small bus operators lost their routes or are now working under less lucrative public service contracts. Restricting feeder services to operators with buses less than 20 years old also led to the loss of quite a few jobs. These measures were met with a week-long strike which paralyzed the city. The public supported the measures, however, and a state of emergency was called which allowed the military to take strong measures to re-establish the transport system.

When hiring contractors to design and build the system, customer service and convenience were stressed, and attention to passenger convenience and comfort has been key to the system's popularity. Attractive stations provide cover from both Ecuador's strong sun and unpredictable thunderstorms. Friendly trolley-bus staff are also maintained at each station to answer questions, handle problems, and provide security. Signage clearly delineates the routing of the bus which is also highlighted by a color-coded system. Food and beverages are prohibited as the system's professional appearance is maintained through exceptional daily housekeeping.

Finally, the profile of cycling was raised considerably during the 1999

International Environment Day in Quito. Dignitaries from government and other sectors participated in a solidarity ride to raise the profile of cycling and cycling safety. Despite the appearance of rain, over 70 persons participated in the ride. At this event, the city announced plans for the bike paths.

Quito's Message

Despite extreme economic hardship and political turmoil, Quito has created a world-class sustainable transport system, proving that financing is not an obstacle if the political will and the vision exist to create a system that puts people first. While the Quito Integrated Trolley Bus System is a work in progress, it is already an example to other municipalities. Visits and enquiries are coming in from various South American cities as well as Western Europe. Hopefully, Quito's lead will prove to be a replicable model. ♦

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Israel

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which entitled them to enter the annual shareholder meeting, and there waxing eloquently (and unhurriedly) about the threat the project posed to Israel's environment and transport system. "It was wonderful," said one participant: "ten people speaking ten minutes each in front of all these well-paid business men—we must have cost them more than our organization's annual budget in that hour. When we also told them that the national student's organization had agreed to remove Poalim Bank branches from campuses around the country, we really got their attention." At the same time, another NGO demanded and received by court order the project tender documents, which had been kept from the public for over a year, and then submitted an appeal to the High Court demanding the project be frozen as the toll-rate linkage agreements approved with the winning company contradict fair bidding practices. In July, Friends of the Earth

International joined the fray, and lent its efforts to lobbying overseas investors to pull out from the project. And in August, a green group of Jewish youth will join residents of an Arab village in planting trees on the village's land that would be paved for the Highway. Needless to say, this array of activist activity does not contribute to investor confidence in the project.

At the same time, the planning, bureaucratic, and transportation establishment continues to regard the project as an accomplished fact. The project is deeply entrenched in national, regional, and local planning documents, the Trans-Israel Highway Company has been operating for years (with over a third of its employees listed in an oversight report detailing excessive salaries in the public sector), the winning consortium has spent over 10 million dollars in preparing their bid, countless subcontracts are in force for everything from archaeological to acoustic surveys, while planners have already decided what kind of greenery should grace the road's edges. In addition, the private sector is

avidly anticipating the conversion of agricultural land around the highway, despite planners' confidence in the enforceability of their zoning.

One possible outcome of the difficulty of putting together the financing in combination with the massive costs and expectations already associated with the project, is that the government will revert to financing the project itself. This removal of an intermediate layer of profit margins has, after all, been unequivocally declared as the superior option by almost all observers, including the Trans-Israel Highway Company itself. The central virtue of the private sector financing is that it provided a sleight-of-hand that made the project seem budget-neutral. With this fiction removed, the Ministry of Finance and decision-makers would need to genuinely and carefully weigh this traffic-engineers dream-road against other national priorities, including pressing transportation projects. It is far from clear whether the Highway would be able to withstand this long overdue evaluation. ♦

China

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number of taxi trips in the world. Shanghai also has 500,000 two-stroke mopeds and a large number of motorized three-wheelers. In Guangzhou, over 50% of the traffic is from motorcycles.

Beijing has banned motorcycles and mopeds in most central areas, and tightly restricted trucks and minibuses in the inner city. Shanghai has made motorcycle and private car ownership extremely expensive through very high taxes, but

headway in China. Aside from a few short stretches in Beijing and Kunming, there are few functioning bus prioritization schemes, despite the official government policy of supporting public transit as a first priority. Public transit is losing mode share in most of China, though it has stabilized in Guangzhou where the bus system was opened up to partial free market competition.

Many cities in China are trying to improve how accident data is analyzed as an important first step in improving traffic safety. The Beijing traffic police were working with the Beijing Municipality on a possible Learning and Innovation Loan (LIL) from the World Bank on traffic management, but it was not supported by the State Development

mercial adoption.

Efforts by the Development Banks

The role of the International Financial Institutions in this process is complex. Both the Asian Development Bank and the World Bank have been spending billions of dollars on intercity roads in China. They have spent over \$3 billion in the last decade on roads, though they have also spent a proportional amount on rail. The World Bank's two biggest urban transport projects, the Shanghai Urban Transport Project and the Guangzhou Urban Transport Project both funded inner ring roads, but tried to use the road loans to leverage public transport improvements, and motor vehicle emission control programs. A recent loan to Liaoning, and a proposed loan for Urumqi use a similar approach. Bank support has also helped develop much improved traffic modeling capacity.

In Shanghai, the project included a rather extensive traffic management plan which, amongst various objectives, was intended to separate motorized from non-motorized traffic and create a continuous bicycle network. Unfortunately, the non-motorized streets are also used by mopeds and motorized three wheelers, which have the same legal classification as bicycles, making these streets polluted, noisy, and unsafe. The project included one exclusive busway, the Waitan busway along the riverfront. It was not built. Shanghai decided to redevelop the riverfront, and the bus lane was not included in the new designs, in part because original designs did not operate efficiently and effectively. The Shanghai Comprehensive Transport planning institute has developed different designs which overcome these problems. These have been implemented in Kunming, but they have yet to be implemented in Shanghai due to resistance from the taxi industry. Another proposed bus priority measure included in the loan was for bus/NMV contra-flow lanes, which were also not implemented. Busways and bus lanes are also proposed in Shenyang as part of the WB project, and are being considered for Urumqi.

In Guangzhou, the situation is similar. Express bus routes on major north-south corridors, and some bike system improvements were part of the World Bank Inner Ring Road loan. While due to be implemented by December 31, 1999, by dated legal covenant, there is current-

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there remains a major loophole for mopeds less than 50cc's. Guangzhou has pedestrianized downtown areas on weekends, a very popular measure with shoppers and store owners. It also placed 'restrictions' on motorcycles, but until now they have been ineffective. The policy was 'to restrict' the issue of motorcycle licenses to 500 per month in Guangzhou. Many people ended up buying their motorcycles outside Guangzhou but brought them into the city. Now the municipality is trying to restrict motorcycles to those registered in Guangzhou, but its effectiveness is unclear.

Express bus lanes have made little

and Planning Commission (SDPC).

Finally, China's growing dependence on imported oil is both an economic and strategic concern to many. The Beijing Energy Efficiency Center (BECN) is currently working on energy consumption scenarios for several major Chinese cities as part of the tenth Five Year Energy Plan. Much of the focus is likely to be on alternative fuel vehicles. China has natural gas, and Beijing and Chongqing have introduced over a thousand natural gas buses which are manufactured in Chongqing. Some taxis are running on liquid petroleum gas. China also has some fuel cell technology, but it is years away from transport sector com-

ly no progress towards their implementation. The municipal planning agency claims that the density of bus traffic is too high for a single track bus lane to help, and the road is too narrow for a double track bus lane. The new inner ring road has brought heavy traffic adjacent to hospitals, schools, apartment buildings, and homes for the elderly, undoubtedly exposing them to levels of several toxic emissions such as SPM and NOx in violation of China's air quality standards. At the World Bank's insistence, several mitigation measures were taken. The routing tried to avoid sensitive buildings, and where the road could

will take time before exorbitant parking costs and traffic gridlock will make driving unattractive to most.

One possible mechanism for giving bicyclists and pedestrians more of a voice in the future transportation planning process is through the Chinese Consumers Unions. Since the early 1980s, the Chinese government has encouraged the development of consumers unions, and there are now more than 3100 throughout the country. These associations are reasonably autonomous and operate under the authority of municipal governments, though their activities are coordinated by the national

In China, the NGO sector is very weak. There are only a handful of brave, independent environmental groups, and they have their hands full.

not be moved, the World Bank required that mitigation measures be provided, including mechanical ventilation/air conditioners, to ensure the standards inside buildings were not exceeded. The traffic demand management measures will also mitigate the traffic-related pollution, if they are implemented.

What Hope for the Bicycle? Can NGOs Protect Cyclists' Rights?

Are China's several hundred million cyclists concerned about these trends? It's hard to tell. In China, the NGO sector is very weak. There are only a handful of brave, independent environmental groups, and they have their hands full. One group, Global Village Beijing, led by the dynamic television-producer Sherry Liao, made a two hour special on environmentalism in the U.S. which played on national television and featured U.S. bicycle activism prominently. Unfortunately, right now China has no bicycling advocacy organizations. While there are millions of small community associations and block associations, and public hearings are held on most major transport projects, these small groups are unable to play a significant role in the transportation planning process. Many Chinese cyclists no doubt aspire to owning a car, and would support the trend for new road building. It

office in Beijing, which is a member of Consumers International. They play an important role protecting the public and giving feedback to manufacturers and public agencies about the quality of their products and services. Their current focus on healthy and safe consumption has already gotten some chapters involved in cycling issues. For example, when one chapter found that many bicyclists were being injured as the result of too many potholes, they sued the municipal government for poor road maintenance, and now the government has improved the road surface situation. They also had a campaign to ask all children to wear yellow and white so that they can be seen. They also led the fight to require drivers to hold insurance which protects third parties involved in accidents.

Helping China's citizens choose a transportation system that makes the most sense for them rather than simply mimicking the transport system of the U.S. will be a long-term process. ITDP and SUSTAN have just begun a dialog with Chinese officials, Consumers Unions, research institutes, NGOs, and foreign financial institutions which can play a key role in promoting more sustainable transportation systems in China. A journey of ten thousand *li* begins with a single step. ♦

News Briefs

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of municipal politics and conflicts of interest. Thus, the inner ring road (as opposed to the outer one) would demand the kind of tunneling equipment owned by influential construction companies, would draw on city (as opposed to state) funds, thus augmenting the city's power against a background of long-standing tensions between the State and the powerful capital, and would benefit several powerful politicians with interests in adjacent real-estate holdings. Party commitments of most City Council Members, whether linked to construction companies or to the communist rule under which the project was first forwarded, means that the contested Master Plan is likely to achieve an overwhelming majority of votes when resubmitted to City Council for approval. This would probably seal the project's fate and end the Ministry of Environment's efforts to intervene, as under current law a locally approved plan—even in opposition to the law—cannot be reversed at the national level, and the Ministry, already fighting on so many fronts, could not afford to expend more of its political capital on the issue. ITDP worked with the coalition to help them devise a strategy to fight the project that went beyond "educating people about the issue." Given the vested interests and resistance to changing the city master plan, a far more focused and forceful approach to put pressure on clearly identified decision makers to stop this disastrous project was suggested.

Indonesia Cancels 24 Toll Roads, Many Connected to Suharto

The Indonesian government recently cancelled 24 of its more than 70 toll road projects, worth \$1.9 billion. The cancelled projects include the notorious triple-decker toll road-light rail line into downtown Jakarta, two major inter-island bridge projects, and a central Java toll road. Many other toll road projects may yet be cancelled. As most of the cancelled toll road concessions were held by corporations owned by Suharto's family, the move is clearly intended to bolster popular

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Development Project Updates

India Cycle Rickshaw Improvement Project

In the spring of 1999, ITDP staff worked with our project partners, the Asian Institute of Transport Development, to perfect designs on two pre-production cycle rickshaw prototypes to be manufactured by local firms: a high-end, integral frame cycle rickshaw targeting upscale tourist markets, and a low-end cycle rickshaw targeting traditional markets. The designs maximize manufacturing efficiency, and orders for twenty of each of the two designs have been placed.

The project team has also enlisted local help to deploy the trial fleets with commercial operators. Lokayam, an advocacy organization for low income communities, will help place the low-end fleet with cycle rickshaw owners and operators in Delhi, as well as help collect data on the new vehicles' effects on the income and health of operators. Quad 5, a professional design and marketing company, will be responsible for styling the vehicles and deploying the high-end fleet with the tourist industry in Agra, site of the Taj Mahal.

Mobility Haiti

In July, a jointly-sponsored ITDP/Re~Cycle (UK) shipment of 400 bikes, parts and tools arrived in Port-au-Prince to capitalize the new "Bicycle Scholars" curriculum at a new Haitian Resource Development Foundation (HRDF) school in Aquin, in southwest Haiti. The curriculum provides the training and hardware necessary for Haitian teens to enter the workforce as bicycle mechanics, shop



Learning bike mechanics in Haiti

operators and mobile vendors. ITDP and HRDF are currently working with the Haitian Minister of Education, Evans Levascolier, to spread the curriculum to schools throughout Haiti.

Mobilizing Women in Mozambique

In February, Amelia Zambeze, director of the Mozambican Association of Rural Women (AMRU) and ITDP Board Member Karen Overton established a new AMRU bicycle workshop in Chockwe. They capitalized the project with a new container shipment of bikes, tools, parts and bike trailers, donated by individuals in the New York City region and Burley Design Cooperative, Park Tool and BYKaboose International. In Chockwe, AMRU will continue its poverty alleviation program, training women how to ride and maintain bicycles, making bicycles available to poor women, and creating jobs for female bike mechanics.

The cost of collecting, shipping and clearing this most recent container through customs was shared with AMRU, which used funds generated by previous ITDP-sponsored shipments. This represents a significant step towards AMRU achieving self-sustainability of their bike projects; AMRU is planning to pay for their next shipment of bicycle without outside support.

For more details on all our projects, please visit our website at www.ITDP.org.

Bulgaria

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Italy. This enormous proposal would cost \$1.2 billion, of which the suffering Romanian economy would have to provide \$700 million. The Romanians, however, believe it would yield \$800 million a year in pipeline tariffs, and supply oil refineries and gas stations throughout the region. Yet another plan is to go by rail or pipeline through Bulgaria from Burgas, through Macedonia, to the Albanian town of Vlore, or what is known as Corridor VIII in the EU. The U.S. Trade and Development Agency supported a feasibility study of rail and road improvements in Corridor VIII, and is now supporting a feasibility study for the Romania to Trieste pipeline proposal. The EBRD and the

World Bank have a standing offer of a \$500 million loan to the Romanian oil industry, but it hinges on restructuring the industry which currently loses \$800 million a year. The European Union, worried that all these competing proposals could lead to wasted resources and delays, have started a coordinating body under the Tacis Program called Inogate (Interstate Oil and Gas to Europe).

The oil companies are also buying up assets in the region. Besides Shell's recent acquisition of 10 major sites in Sofia, Lukoil, a company 26% owned by the Russian Government, is buying up oil refineries in Bulgaria and Romania, and is negotiating plans to open over 200 gas stations throughout the Balkans. Lukoil owns a refinery in Burgas, and was negotiating to buy a share in the Bulgarian oil company, but was pressured to drop out by the Bulgarians who feared it would jeopardize their chances

to join the European Union. Lukoil also bought refineries in Ploesti and other locations in neighboring Romania.

Conclusions

Powerful corporate and geopolitical interests are competing for control over Bulgarian transport policy, aiming to ensure that oil flows easily to Europe and the U.S., and that Bulgarians will buy U.S., Russian, and European oil and cars, and give up on their public transit systems. With municipal budgets closed to public review, conflict of interest rampant among public officials, and the press heavily dominated by corporate interests and the government, the only voices of opposition come from a handful of brave and independent NGOs. The alternative they offer is Bulgaria's only hope for an environmentally sustainable transport system, one which puts Bulgarians first instead of foreign corporate interests. ♦

NewsBriefs

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support for the ruling Golkar Party after its recent defeat in the nationwide elections to Megawati Sukarnoputri, head of the Democratic Party of Struggle.

Historic Santiago Threatened by Highway

SANTIAGO, Chile. The Chilean government has recently resurrected plans for the Costanera Norte, a 33-km long highway slated to cut through the historic heart of Santiago. The road is to be built as a build-operate-transfer private sector highway. After last year's attempt at a tender failed, the highway is now being promoted to construction companies with well over US\$80 million in direct government subsidies.

The Costanera Norte would destroy some of the city's most beloved areas, including the central market area, the Bellavista neighborhood, and part of San Cristobal Hill, the city's most important park. It would also displace residents of the poor Independencia neighborhood to the city's fringe, where they would face much longer and more expensive commutes and lack access to basic services.

"Ciudad Viva," an advocacy group fighting the highway, is seeking

international support for its efforts. They can be contacted at ciudadviva@lake.mic.cl.

Public-Private Partnerships Building Bangkok's Transit System

The 'Sky-Train,' Bangkok's first mass transit system, is scheduled to open in December, 1999. The 23-km elevated electric train system, to be built and operated by the Bangkok Mass Transit System Corporation (BTSC) for the Bangkok Metropolitan Administration (BMA) has come under criticism from disabled groups because none of the stations originally would have access for the disabled or children's strollers. The National Council of the Disabled of Thailand and others have been calling for constructing wheelchair-accessible elevators at the stations. After several protestors, the disabled groups won an agreement from the Thai Royal Government to co-finance elevators at 5 of the over 20 stations for completion by the official opening ceremony.

The project also faced a three year battle with an elite girls school which fought against an adjacent station for 'safety' reasons. After BTSC declared that the entire system would fail without the station and BMA would have to pay it US\$1.37 billion in compensation, the school relented. The station will be

scaled down as a compromise.

BMA has also been taken to task over the elevated system's fare structure. The \$0.40 to \$1.64 fares agreed to in BMA's contract with BTSC ensure that the system will be used primarily by the wealthy, and the Bangkok City Council has accused BMA of flouting a law which requires it to consult city councilors on its contracts with the private sector.

Work also began on Bangkok's new subway system early this year. The US\$2.8 billion project is to serve 400,000 commuters a day when completed. It will be built and operated as a private concession.

Another consortium has just signed a 25-year subway concession with the Metropolitan Rapid Transit Authority (MRTA) for US\$1.37 billion. The operator will pay annual concession fees starting in the 11th year at US\$26.9 million, increasing annually to US\$152.4 million. MRTA will also receive a portion of the subway fares: 1% in the first 14 years of operation, then rising to 15% in the 19th year and beyond.

Bogota Plans Major Bike System Investments

Bogota's Metropolitan Government plans to radically upgrade its bus and bicycling systems. The main projects are the Transmilenio (bus system), the Troncales (reconstruction of the main city corridors to accommodate not only private car traffic but also public transport, bikeways and pedestrian appropriate infrastructure, including new paths and overpasses), the Metro (subway system), and the Plan Maestro de Ciclo-rutas (Bicycle Master Plan).

In March, the Institute for Urban Development (IDU) of the Metropolitan Government of Bogotá released its comprehensive Bogotá Bicycle Master Plan (BBMP). While currently bicycles account for only 80,000 trips out of a total of 14 million trips per day in Bogotá, the Mayor believes that a 300km-bicycle network of lanes and paths, traffic calming of many street intersections, and a large public awareness campaign can dramatically increase the numbers. They plan to spend over \$200 million on bike promotion in the next ten years, and \$27 million a year for the next three years. For more information contact Ricardo Neves, ITC-Brazil, at ricardoneves@itcdub.com.br ♦

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www.itdp.org/Martha&Betty.html

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Sustainable Transport is now only published annually. Because of the growing use of electronic media, we are publishing an on-line magazine, TransportActions, which appears on our web site (www.itdp.org) three times a year. All issues of *Sustainable Transport* are also online.



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rpain@nas.edu

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fazlur@citechco.net

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Letter

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fuels for China, as the fuels are already widely available and the technology is already there.

There are a few leapfrog technologies being tried out in China: the Pegasus, a light-weight electric, gasoline hybrid car that gets 70 miles to the gallon, and is made of composites and plastics. A good approach, but no vehicles have actually been sold yet, and almost all the parts and the manufacturing equipment are being imported from Texas. When a part breaks, they will have to have the part shipped from Texas. And how many repairmen will know how to fix it? The electric buses sent to India by the U.S. are mostly sitting idle due to lack of spare parts and local capacity to repair them.

In some ways existing technologies are more 'entrenched' in developing countries. Auto manufacturers in China are using equipment from Germany and the U.S. from the 1980s. Currently, the Chinese government is a co-owner of all the automobile factories, which makes

the current technology even more 'entrenched' in public policy than in the U.S. By and large, developing countries buy technologies from off the shelf, because they are less risky. As such, they are more 'entrenched' in existing technologies than higher income countries with a better-educated workforce.

Of course, the development of an ultra lightweight, high-powered fuel cell battery could power lightweight, low technology vehicles. At that point, human-powered, fuel cell hybrids might become a possibility. Bicycles and cycle rickshaws with fuel cells become a possibility. But their utility will have to be determined in location-specific market trials. In our own experiments in India with electric assisted human-powered cycle rickshaws, the power generated by the battery and additional drag from the motor were insufficient to justify the additional weight added by the batteries and the motor, while the cost doubled. If the weight and the price came down dramatically through technological innovation, commercially viable applications would certainly emerge. But it is not going to be the market in developing countries which drives these technological innovations. ♦

Thanks

In April, Alternative Gifts International announced they would match any donation we received in a one-week drive for our Afribike project. Many thanks to these member donors who met this challenge, and helped us raise over \$9,000 for bikes in South Africa:

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