

< Westneat

FROM B1

TUNNELING FOR SOLUTIONS

LET'S GIVE THESE IDEAS A HAND

'Bertha' is disassembled, studied, fought over, etc." he proposed.

He pointed out the contractor is hiring miners to dig special shafts to service Bertha. How about they dig the tunnel instead?

It sounds far-fetched, but some tunnels are still dug this way. In 2013, miners using machines called "road-headers" completed two three-fourths-of-a-mile-long highway tunnels in Devil's Slide, Calif. They used modern stabilizing techniques, but the digging was old-school. The problem for us is that

our tunnel is both huge and deep. There's so much groundwater pressure 200-feet down that tunneling with human crews would mean first pumping out "rivers of water," as one engineer described it.

Former state transportation director Doug MacDonald said he once oversaw a tunnel project in Boston in which the drill couldn't complete the job. Workers really did step in to finish with "an excavator, shovels and old-fashioned timber supports."

"But that was a 14-foot diameter tunnel," he said. "This one is 57 feet. It would take forever to do this one by hand."

True, but forever might be better than never? I would also point out, again, that under downtown Seattle there is a mile-long, 30-foot diameter, 100-foot-deep train tunnel that was dug in a year and half by 350 workers

with pickaxes and wheelbarrows. In 1904.

Another idea was sent in by multiple readers. Bertha cost \$80 million new, but it will allegedly cost \$125 million to dig her up and fix her. So why not order a new Bertha and drill from the opposite end?

"Then we avoid the possibility of discovering next March that Bertha is a lemon," one proposal concluded.

Said MacDonald: "Now that's a crazy idea that might not be totally crazy."

Something similar worked a few years ago on the Brightwater sewage tunnel. After a drill broke down, the tunnel was finished from the other end in what was called "a tough, high-stakes decision." Getting a new Bertha—named Greg? Christine?—would likely take a year. It would need a launch pit and would also have to be dug out after it tunneled up to a

busted Bertha.

"Everyone believes they'll be able to fix the machine," a spokesman for the state demurred. "That's the plan. So nobody's entertaining backup ideas."

I'm glad the people are. This project needs all the

backup it can get.

Speaking of that, did you read how the guy who runs the tunneling firm Tutor Perini is lawyering up to stick us with the cost overruns? He seemed a lot more confident than our guy from the state. Probably because he knows

he has better lawyers.

Garage engineers are cool. But it's 2014. What Seattle really needs are some garage courtroom sharks.

Danny Westneat's column appears Wednesday and Sunday. Reach him at 206-464-2086 or dwestneat@seattletimes.com

< Climate

FROM B1

GOVERNOR SEEKS TO LIMIT EMISSIONS

It's already been law since 2008, he says

State Sen. Doug Ericksen, R-Ferndale, who chairs the Senate's committee on energy and environmental issues, said he was irritated Inslee did not share his plans with Republicans in advance.

Ericksen was skeptical of Inslee's plans and said the governor's antipathy to fossil fuels "will drive jobs out" of the state "for no reason."

Inslee, during his announcement, pointed to a 2008 law passed by the Legislature that says the state will cut greenhouse gases to 1990 levels by 2020, with deeper reductions in subsequent decades.

"It is the law of the state of Washington ... what we are designing is the tools," Inslee said.

State Sen. Kevin Ranker, D-Orcas Island, said Republicans should not be surprised by Inslee's proposal, which follows the outlines of a plan Inslee and Democrats floated to a legislative climate-study panel that included Ericksen. "This has been a very pub-

lic process, and for anybody to say they were surprised—they need to pull their head out of the sand," Ranker said.

But Ericksen, who called the 2008 law's emission limits "goals," said Inslee's talk of carbon pollution was "loaded language," adding that "carbon is a natural process." Asked whether he believed global climate change described by scientists is real, Ericksen said his own views were "irrelevant."

Ericksen said Washington's impact on greenhouse-gas emissions is too minuscule to make a difference.

Inslee said Washington should not wait for other states or nations to act.

"Wrecking our future and our home with carbon pollution is just wrong, no matter what anybody else does," he said.

Last year, Inslee signed an agreement with the governors of California and Oregon, and the premier of British Columbia, in which he pledged to push for limits on carbon emissions and other actions to combat climate change.

But lawmakers here have balked at sweeping climate legislation before.

In 2009, the Legislature nixed a plan by then-Gov. Chris Gregoire to implement a cap-and-trade policy, which would have required

industries to cut greenhouse-gas emissions below a certain limit, or buy extra permits in a marketplace.

Inslee also took a cautious step Tuesday toward a clean-fuel standard in Washington state, ordering the Office of Financial Management to conduct a feasibility study and a cost-benefit analysis. A low-carbon fuel standard would reduce greenhouse-gas emissions from cars, but opponents argue it could raise gas prices.

Republicans in the Legislature have been suspicious that Inslee might abruptly impose a costly low-carbon fuel standard by executive order.

Inslee said he does have that authority. But he said his administration will carefully examine the costs and benefits before moving forward.

Inslee's 21-person Carbon Emissions Reduction Task Force includes representatives of business, unions, environmental organizations, utilities and immigration advocates.

The co-chairs are Ada Healey, vice president at Vulcan Real Estate, and environmental attorney Rod Brown of Cascadia Law Group.

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Week 1

EXPLORING ASIA: ASIAN CITIES — GROWTH AND CHANGE

URBAN AND MEGACITY ASIA

By Dr. Anand A. Yang
Job and Gertrud Tamaki Professor, Director, South Asia Center,
Co-Director, Global Asia Institute, The Henry M. Jackson School
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Editor's note: This article is the first of five featuring pieces by Dr. Nathaniel Trumbull, Dr. Anu Taranath, Dr. H. Hazel Hahn and Dr. Kam Wing Chan.

The Delhi of my childhood was a city of about a million and a half inhabitants. Over the last 50 years, it has been transformed by the rapid urbanization sweeping across Asia. Almost four million by 1971, its population multiplied to more than 12 million in 2001 and more than 16 million in 2011. The current estimate of more than 20 million ranks it among one of the 20-some megacities in the world, with a metropolitan area of more than 10 million people.

As with most Asian cities, Delhi's burgeoning population is partly due to migration. People converged on it in the late 20th century and have continued to do so in waves of several hundred thousand per annum in recent years. The city is a destination because it promises employment and higher wages than in the hinterland. As an economic, political, social, cultural and transportation hub, it also attracts all kinds of people, not just the poor from the countryside.

In addition, as India's capital city—and the political center of previous regimes—it has always drawn the attention of rulers intent on leaving their architectural imprints on its built environment. As Nathaniel Trumbull's article on Ashgabat and Astana in Central Asia reveals, the public spaces of capital cities are often the "playgrounds" of leaders.

Cities—as Delhi exemplifies—invariably pay a high price for rapid urbanization. Familiar are their struggles with issues relating to housing, sanitation, power, water, health, pollution and transportation, especially as they impact the poor. So are their slums and rising rates of urban poverty. Policymakers nevertheless continue to dream of cities as engines of economic growth that can pull people out of poverty, an optimism not

substantiated by Anu Taranath's cautionary tale of the people left behind in a seemingly "shining" Bangalore.

Urban development has also transformed the physical environment of most cities in other ways. Suburbanization has greatly extended their urban limits, encompassing, in Delhi's case, its neighboring rural areas. Spatial expansion, however, has not eased such problems associated with massive urbanization as congestion, pollution, safety and health issues, as well as traffic gridlock. Old Delhi, interestingly, has seen a revival of the rickshaw trade, which once dominated Hanoi, as Hazel Hahn's piece on colonial Vietnam illustrates.

Chinese cities—Beijing, Shanghai and Guangzhou, to name three—have similarly experienced unprecedented growth in recent decades. In the early 1980s, Beijing was home to nine million; today it has more than 20 million, 12 million of whom reside in its metropolitan area. In the last three decades, its numbers have doubled. Shanghai, too, has surpassed 20 million; its booming populace the product of double-digit growth almost every year since the early 1990s. And during that same period, Guangzhou shot up from fewer than 3 million in 1980 to almost 10 million by 2000; it currently stands at 16 million. As Kam Wing Chan's article highlights, the growth of China's large cities is part of an epic rural-urban shift that its government is attempting to manage through social engineering.

Asia's other megacities—of which the region now has the most in the world—narrate much the same story of staggering population increases and urban development. Consider, for example, Tokyo, the world's largest megacity. More than a million strong by the mid-18th century, it counted more than three million by the early 20th century, six million plus by the mid-1930s and 10 million by the 1960s. Tokyo proper has a little over 13 million today. Greater Tokyo is closer to 35 million, or 25 percent of the country's inhabitants, more people than the population of such countries as Afghanistan, Nepal, Malaysia, Taiwan and Sri Lanka.



Japan, Tokyo, Shinjuku, Tokyo Metropolitan City Hall in the center, aerial view

Seoul, too, acquired a large populace early on. At the end of the 1930s, it already housed one million; by 1990 its denizens totaled 10 million, or roughly 25 percent of South Korea's overall population. The Seoul metropolitan area, a much larger territory, now claims more than 23 million. However, both Tokyo and Seoul—their core and not larger metropolitan areas—have been losing numbers in recent years because of outmigration and declining natural growth stemming from low fertility rates and an aging population.

Growth—but without the shrinkage—also characterizes the megacities of Southeast Asia. As the political and social center of Indonesia, as well as its economic, commercial and transportation hub, the capital city of Jakarta is home to almost 10 million inhabitants—close to 28 million if the count includes its greater metropolitan area. Similarly, Manila, the capital of the Philippines, has fewer than 2 million inhabitants but almost 25 million in the greater metropolitan area. Both cities, furthermore, are living examples of the benefits and burdens of breakneck urban development.

No doubt, rapid economic growth in Asia will continue to swell its roster of megacities. So will its secondary cities and towns where urbanization is profoundly reshaping the lives of even larger cohorts of people across the region.

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