on, there is no longer the need for massive building in the elementary and secondary level.

At the post-secondary level much of past expenditures involved the putting in place of necessary facilities and the incurring of hefty capital costs, a process that has been for the most part completed.

The Review notes that in the past two decades, educational spending increased by more than 10 per cent a year, even considering certain inflation indices. More recently, the average annual spending increase has run "only slightly ahead" of the rate of price increases.

Special rental housing program

Urban Affairs Minister Barney Danson recently named ten urban centres as qualifying for participation under the newly-announced $50-million Central Mortgage and Housing Corporation direct-lending program to spur construction of moderately-priced rental housing.

The measure is expected to yield 2,000 to 2,500 units in the following ten municipalities where rental housing vacancy rates are extremely low: Victoria, Vancouver, Regina, Saskatoon, Toronto, Hamilton, Montreal, Hull, St. John's and Saint John.

Selected projects will be financed by loans under the National Housing Act, which enables CMHC to provide financing up to 95 per cent of costs as recognized by CMHC at an 8 percent interest rate.

Rents for the housing units produced will be set out in an agreement between the owner and CMHC and will be based on the size of the units, the extent of services provided and the financing terms offered.

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Super train

(Continued from P. 2)

Queen's University," says Professor Earl Burke, electrical engineer and a member of the University of Toronto research team mainly responsible for designing the linear synchronous motor. "The train will be a single vehicle about 100 feet long, weighing about 30 metric tons (66,138 pounds) and will carry about 100 passengers."

"Essentially, we see the train as an alternative to planes, with comparable fares for inter-city trips, say, Montreal to Toronto." Professor Burke estimates that it will take about two hours for the train to make the journey from Montreal's Place Ville Sainte Marie to the centre of Toronto.

Canada leader in design

The Maglev Project (for magnetic levitation) is being funded by an annual grant of $150,000 provided by the Canadian Transportation Development Agency, part of the Department of Transport. Although American and German interests receive millions yearly for their levitation vehicular research, Professor Burke said that Canada was still leading internationally in propulsion-system design. "We're quite excited because our design is relatively simple and quite efficient considering it is a track-powered vehicle," he explains.

Maglev principle

He states that while it is theoretically possible to combine both levitation and propulsion systems, the Maglev train will have two separate systems. Eight side-mounted, super-cooled or "cryogenic" magnets (cooled by liquid helium to nearly 500 degrees Fahrenheit below zero to eliminate current loss) will be used to lift the train off the "track" or guideway. The train's magnetic fields will interact with aluminum strips forming part of the guideway.

Fifty more cryogenic magnets, mounted under the train, will combine with aluminum winding (conductors) buried in the guideway to form what is known as a linear synchronous motor to propel the train. "You could describe it as an unrolled, 300-mile long motor – at least in the case of the Toronto-Montreal route," says Professor Burke.

Power will only be fed to that three-mile stretch of guideway over which the train is travelling at any particular time. Way stations along the route will also automatically regulate the level of power needed for positive acceleration and braking. Like an airplane, the train will go through periods of take-off and landing.

The Maglev principle being developed by the three Canadian universities is completely different from the Krauss Maffei system, currently being developed as a possible future urban transportation system for the Province of Ontario. The planned Toronto system, according to Professor Burke, is not intended for long distance travel and will be limited by its nature to speeds of about 50 mph.

Stabilization problem

The big problem currently facing scientists working on levitated vehicular research is vehicular stabilization. "We want to know how to control the train from oscillating if a heavy gust of wind hits it, for example," says Professor Burke.

The train will also have to ride on an elevated, concrete guideway to avoid intersections and to be as snow-free as possible. But Professor Burke doesn't think the cost of constructing such a guideway is exorbitant.

"If you think of how much a large passenger aircraft costs and include the cost of the airport in air transportation, I think our system would provide cheaper service for the same duty."

Moreover, he sees certain advantages, such as drastic cuts in pollution and little noise. The possibilities for the future are also "fantastic".

"Most of the power generated by the motor will be going into parting the air, but if you could somehow efficiently construct an evacuated tube to eliminate the wind drag it is possible to foresee such a train going 1,000 mph or more," speculates Professor Burke. "There's almost no limit to the possible speed."

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