



ETS

Advisory Board

**FUTURE DIRECTIONS:
Trolley Buses in Edmonton**

June 22nd, 2004

ETS Advisory Board

Why are we here?

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Recommendation:

...that the City include the continued operation of electric trolley buses as part of the transit fleet in its ten year plan.

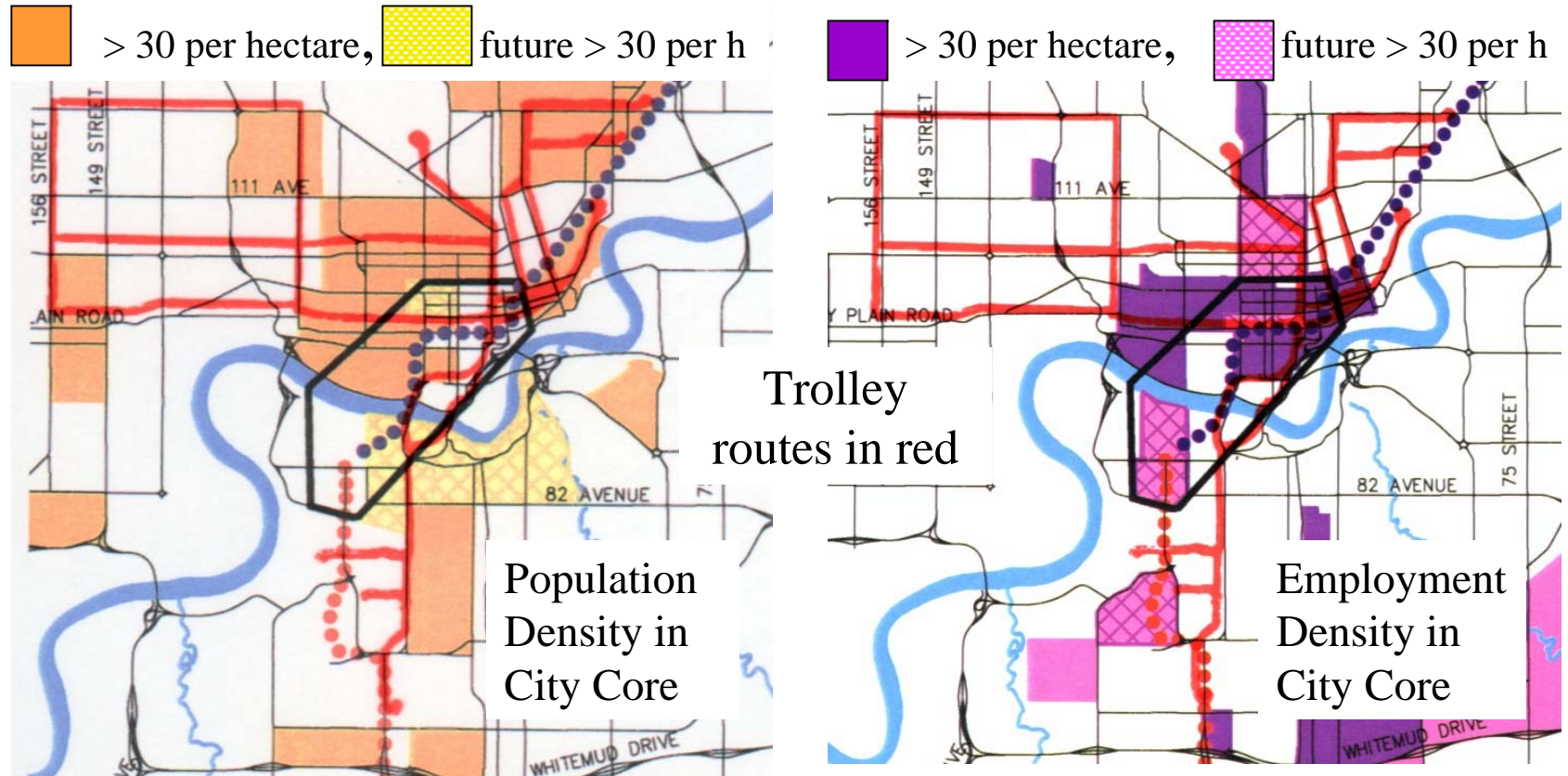
Report Flaws

- **Only 2 alternatives examined**
- **Benefits understated**
- **local ? area wide**
- **tail pipe ? life cycle**
- **Trolleys haven't been maximized**
- **Operational Efficiencies?**

Why keep Trolleys?

- Trolley buses are cleaner than diesel buses
- Trolley buses are quieter than diesel buses
- The Transportation Master Plan and Plan Edmonton specifically calls for the city to reduce the negative impacts of transportation in the city core
- The incremental costs from operating the trolley system are outweighed by the benefits

Where are the people?



Maps: *High Speed Transit Study*, Stantec, Sept. 2003

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E Trolleys are a tangible commitment to a better city, a healthy and vibrant downtown and quality of life.

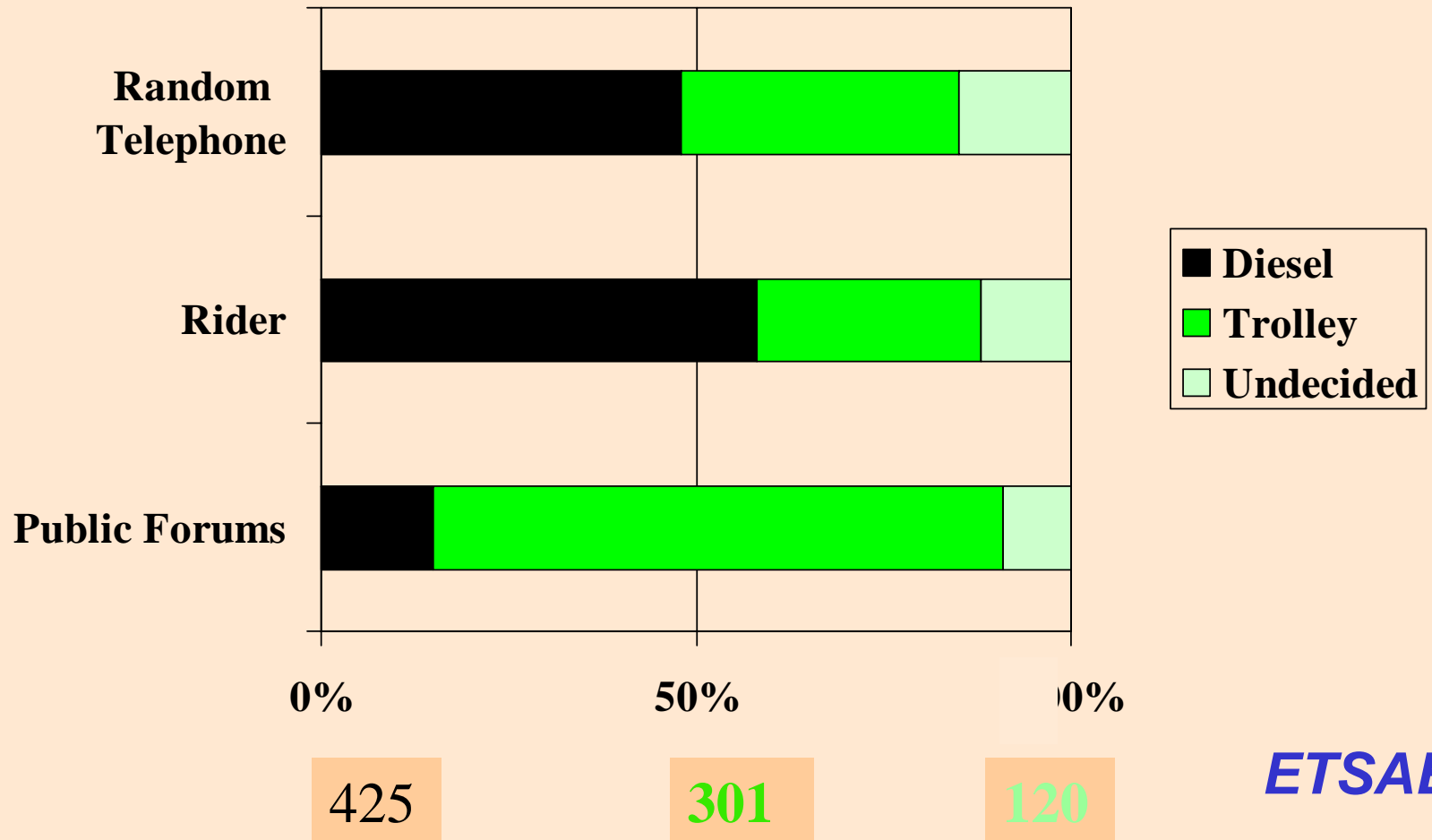
ETS Advisory Board's Recommendations

- Reasonable
- Address issues raised
- Make best use of what we already have
- Encourage innovation and leadership
- Enhance Edmonton's image
- Retain or enhance quality of life benefits
- Allow the City to take advantage of opportunities to create partnerships and funding opportunities

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Opinions, Evaluating and Comparing Considerations:

Consultation results really show no decisive majority either way



Opinions, Evaluating and Comparing Considerations:

- People liked the clean and quiet features of trolleys; many felt they contributed to the quality and character of the city.
- Issues were identified by customers and employees with the existing trolleys: accessibility, vulnerability to disruptions.
- New trolley buses are low floor accessible.
- Auxiliary power units are common on new trolleys and allow them to skirt disruptions.



**Opinions,
Evaluating and
Comparing
Considerations:**



- New trolley buses are currently being built for Vancouver by a Winnipeg based bus builder.
- The first vehicles will be completed in mid-2005 and shipped to Vancouver.
- A decision is being made on the future of trolleys without ever having seen a new trolley bus in the flesh.

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Recommendation #1

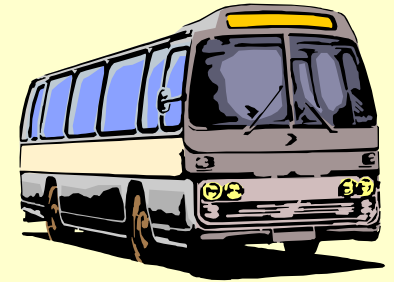
that the City make use of opportunities in 2005 to procure a new low floor trolley bus for demonstration, assessment and public evaluation.



New Low Floor
Trolley Bus, Boston
[Source: The Boston Globe]

Fleet Composition and Acquisitions

Considerations:



- 93% of bus fleet is diesel with noise and toxic curbside emissions.
- Eliminating trolleys will increase this to 100%, with greatest impact on the city core.
- The strict 2007 diesel standard won't kick in for 2.5 years, but we are still buying diesel buses annually.
- Over 50% of the diesel fleet already doesn't meet 2007 standards and will be around for 20 years.
- Current trolleys are not accessible, but many have been in storage and have life left in them.
- 2002 asset assessment: 73% of the overhead wire system is in good, 19% in fair condition.
- Only two—not all—of the ten year cost scenarios have been examined.

Fleet Composition and Acquisitions

Considerations:



For Example:

- Taking down the overhead (13M) and buying new diesel buses (18-23M) will cost **\$31 to \$36 million.**
- Rehabbing the current trolleys (1.5 M) and maintaining the overhead (13 M) will cost about **\$14.5 million.**
- Maintaining the overhead (13M), buying enough low floor trolleys to fill the 'base' service (25M) and using rehabbed current trolleys as peak extras (750K) will cost about **\$39 million.**

Recommendation #2

that the City consider deferring the purchase of more diesel buses until after 2007 in order to maximize the number of diesel vehicles in the fleet meeting new emission standards; that funds earmarked for diesel bus purchases over the next two years be redirected/reserved for trolley fleet renewal and that the City examine the full range of scenarios and financial options for renewing and continuing with a trolley fleet.



| Examine ALL the scenarios before making a decision, not just two.

Environmental + Funding Initiatives

Considerations:



- 2007 legislation intends to reduce diesel emissions, but diesels will still pollute.
- Cleaner power plants outside the city will also still produce emissions, although less of them.
- “The City and Epcor are constantly looking for ways to advance environmentally beneficial projects.”
- The power emissions associated with trolleys can be removed entirely by using a green power source. This cannot be done with diesel.
- There is funding available for innovative environmental projects like using green energy.

Environmental Issues and Initiatives

Considerations:



74 Federal government initiatives in grant form or matching form relating to the environment, energy conservation or greenhouse gas reduction.

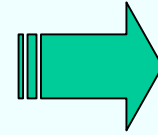
Federation of Canadian Municipalities (FCM) Green Municipal Funds

‘enabling grants’ for feasibility studies to investigate innovative environmental projects, and ‘loans’ for making investments.

City of Edmonton is pre-approved for \$20 million in loans under the province’s ***Me-First*** program.



Innovation
Partnerships



Benefits



Two innovative projects to investigate are wind power and conversion of landfill gas



Recommendation #3:

that the City explore the range of *funding* (i.e. grant and loan programs) and *business partnership* opportunities and benefits associated with trolley bus projects that would demonstrate environmental leadership, such as the adoption of new power generation technologies using renewables or landfill gas for powering the trolley fleet.

Vehicle Maintenance Structure

Considerations:



- Mobile Equipment Services looks after many gas and diesel vehicles.
- Maintaining these vehicles requires a common skill set.
- Aside from trolleys, Edmonton operates other electric vehicles—LRT.
- Skills to service the electrical systems of LRT are common to servicing trolley buses.
- Electric vehicle mechanics have voiced support for trolleys.
- Responsibility for servicing LRT cars does not reside with MES.

Recommendation #4

that the City re-evaluate the structure of its organization with regard to vehicle maintenance, and consider assigning the responsibility for the maintenance of electric vehicles to a single entity.



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Policy and Operations

Considerations:



- March 23, 1993, City Council Motion: “that the Transportation Department, Edmonton Transit, Edmonton Power and the Public Works Department be instructed to make maximum use of the trolley bus and trolley wire system presently in place.”

- Trolleys are often sidelined on weekends or during road construction, even though this is not the practice in other cities.

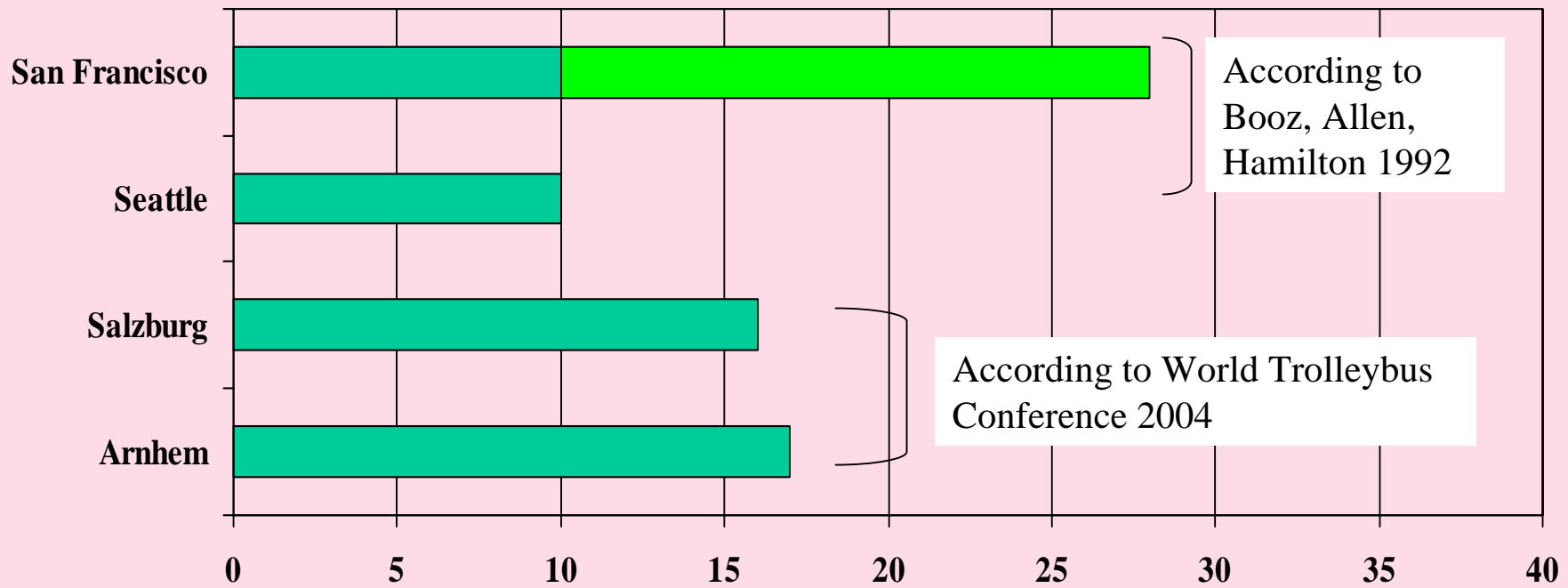


- Six auxiliary power units were purchased for use during construction, but only one was ever installed.



- There is ample evidence that well run trolley systems attract more riders than equivalent diesel service.

Ridership increase on conversion from diesel to trolley

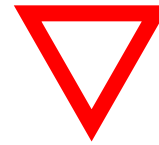


Recommendation #5

The ETS Advisory Board recommends that the City continue its directive to maximize the use of trolley buses, but also set *specific goals and guidelines*. The policies and practices with respect to the operation of trolley buses during construction and on weekends should be reviewed to make them commensurate with a policy of maximum use.



Let's not let haste make waste!



- Winnipeg abandoned trolleys in 1970. In 1977, it was regretted, and the city twice proposed to rebuild its system. Rebuilding was cost prohibitive.
- Hamilton abandoned trolleys in 1992. Two years later rising natural gas prices led to newspaper commentary like: “This [trolley] issue should have been further examined and more cautiously considered before hastily committing an irrevocable act.” [M. Davidson, The Spectator, 1994]
- Toronto abandoned trolleys in 1993 in response to a provincial effort to sell cheap natural gas. Seven years later, Howard Moscoe, Chair of the TTC told reporters the move had proved “regrettable”. [Diesel Fuel News, Aug. 14, 2000]
- In its final report to the City of Dayton, Ohio in 1991, Booz, Allen and Hamilton warned the Miami Valley Regional Transit Authority that: “Dismantling the trolley bus system would be regrettable in the long term.” [BAH, Analysis of Options for Electric vs. Diesel or Bi-Modal Fleet, Nov. 1991] Dayton is now grappling with the financial effects of rising diesel costs and is fortunate to have retained and recently expanded its trolley system.

The *ETS Advisory Board* recommends that the City include the continued operation of electric trolley buses as part of the transit fleet in its ten year plan.

