Goal: Accessibility

- Cities (metros) have one purpose: To reach more things in less time. These things include jobs, friends, mates, security, supplies, and so on. If you do not wish to reach these things, you should not live in a city.
- This has two aspects:
  - More things (land use)
  - Less time (transportation)
- Which need to be arranged relative to each other.
Strategy: Adaptability

• When the street grid was laid out in the 1800s, no one seriously planned for the automobile. It was nevertheless adaptable.

"It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is most adaptable to change".

Charles Darwin
125 years vs. 30 years
Strategy: Resilience, Reliability & Robustness

• The bridge was fracture critical, the street network is not. People adapted well.

• Networks do have vulnerabilities (selected choke points) which both need to be made more resilient and less like to fail, and need redundancy.

• Transit services are also vulnerable to strikes. One provider (and its unions). There are more reliable ways to organize. Multiple providers, contracting, franchises, etc.
Strategy: Skate to where the puck will be, not where it is

- We know some things about changing technologies. None are acknowledged in planning and forecasts, which assumes technology and behavior are quite fixed.
Strategy: Scenarios not Forecasts

- The future is uncertain. Despite best efforts, forecasts have been terribly inaccurate.
- There are “black swans” everywhere.
- We need to consider a large set of possible outcomes and plan for those rather than one “expected value”.
- This reduces risk, enhances reliability, robustness, and resilience.
Strategy: Reinforce Success, Cull Failure

• If a strategy is successful, do more of it. If it is unsuccessful, stop throwing money at it.

• Resources are scarce. Money, time, energy, effort spent on losing strategies cannot be spent on better ones.

• Admit failure (at least of your predecessors). Not everything the Metropolitan Council has ever done is a success. You are not the Pope.
Strategy: Recognize Lifecycle

- All technologies go through birth, growth, maturity, and decline stages
- Plan accordingly. Do not invest in expensive capital projects for mature technologies. Learn to manage instead.
Climbing Mt. Auto
Strategy: Flatten Hierarchies

- Connections allow multiple paths, reduce vulnerability, and increase interactions.
- Cul-de-sacs put all their eggs in one basket.
- This is not just a prescription for transportation networks, but for a whole range of policies.
- This reduces risk, enhances reliability, robustness, and resilience.
Strategy: Information everywhere

- Information wants to be free. **Stop** making it expensive.
- Parking regulation signs have more information density.
Strategy: Incentives Matter

- People, firms, governments, respond to incentives. Structure the game so the incentives align with ends. Examples follow:
Incentives: Loans not Grants

- What about a Metropolitan Investment Bank rather than Grant programs? Lend money to communities who want to do things (infrastructure, buildings), on the condition they pay it back over time (from user fees, value capture, etc.).

- Local governments will only do things that are worthwhile.

- It changes incentives.
Incentives: Full Cost Pricing on Development

• Suppose new development had to pay their share of the full capital costs of public facilities required to serve it?

• This is equitable and efficient.

• It changes incentives.
Incentives: Full Cost Pricing for Travelers

- Suppose travelers had to pay for the pollution they produce and the congestion they impose on others?
- They would travel more efficiently, better use infrastructure, be less peaked.
- This changes incentives.
Incentives: Capturing the Benefits

• Suppose infrastructure providers could capture the land appreciation that results from their investments.

• There would be more investment.
Are these things difficult?

• Yes, and that is why you are paid the big money, to make difficult decisions.

• These are worthwhile things, that will improve the efficiency of the region, lower costs, enhance services, reduce both failures and the consequences of failures.
Thank you

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