

# Who am I?

Internet technologist, doing IP since 1988.  
“Garage Entrepreneur”



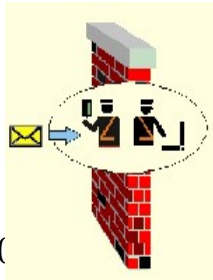
**SOLIDUM**  
(1998)

Linux FreeS/WAN  
FreeS/WAN (2001) 

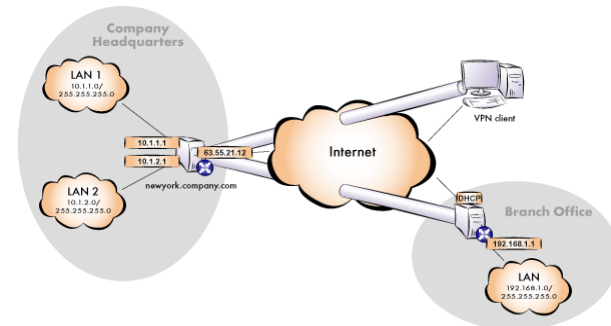
RFC4322

Xelerance Corp 2003

#4 at Milkyway Networks (1994)



RFC4025



IETF standard security:IPsec/VPN

# Why do I care?



http://mikecs.net/prodigeeek/tags/firefly/

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Music Group sees what customers want and says they can't have it

- Book publishers push Amazon to sell fewer eBooks
- Prodigeeek was recently hacked

**LINKS**

- BishopNeo
- Christy Dena
- Copyfighter's Musings
- Download Squad
- Game Studies
- Geekend
- Google Operating System
- Louis Gray

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## 7 biggest insults to geekdom

December 10th, 2007  
Categories: Comic books, Movies and music, Television, The 7, Video games

Us geeks have good lives. Tons of entertainment: TV shows, movies, comics, games to give our lives meaning and purpose (must live to see Episodes 7-9). But not everything can be as amazing as the Buffy Musical. Sometimes, the people we trust to entertain us betray us. They take what we know and love and shoot a missile right through our 2-meter exhaust ports. Here are the 7 biggest insults to our geekdom.

### 7. Canceling Firefly

A show about underdogs got beaten down by the big guns. One of the could-have-been-best-sci-fi shows ever was canceled for poor ratings before even airing all the finished episodes. And as an added insult, the Fox network aired Firefly's episodes out of order causing mass chaos around the galaxy. Yeah, it's all Fox's fault. At least we got the kick ass movie out of the deal.

### 6. Star Trek video games

Still to this day, we've not to see a game

A group photograph of the main cast members of the television series Firefly, including Nathan Phillips, John D. Dillinger, and others, standing in a room with stone walls.

# Agenda.

- The problem
- The (Super) Highway metaphore
- What really got built
- A Geographic example
- What they should have built

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<http://www.surveymonkey.com/s/JB3F6N8>

# Thesis.



- Throttling is the result of poor network design.
- Incumbent telcos did not understand IP networking, and tried to apply ATM ideas.
- Things are okay as long as everyone is a second class consumer, rather than a first-class citizen.

# The Problem.



Who Controls The Network?  
And to What End?



# Mark Handey's Analysis

## Net Neutrality:

- Our playing field
  - Stuck between deep packet inspection, and innovation-inhibiting regulation.
- What's the problem?
  - Blocking, rate-limiting or prioritizing traffic to or from certain destinations.
  - Blocking, rate-limiting or prioritizing traffic from certain applications.

# A vicious cycle.



- VoIP and games compete with P2P traffic and lose.
- ISPs use DPI to spot P2P and rate limit it.
- P2P becomes port-agile, encrypted, stealthy.
- DPI gets smarter, makes heuristic inferences from traffic patterns.
- ISPs use DPI to prioritize known “friendly” traffic.
- Innovation becomes hard - needs to look like “friendly” traffic.
- P2P traffic tries to look “friendly”.
- DPI needs to get even smarter.
- Strong temptation to use expensive DPI infrastructure for “business optimization”.

# That Highway Metaphore







The big worry

Or to put it another way



# What really got built



# What got built (words)

- A large number of unidirectional overpasses.
- You can go in one direction only.
- Need a good geographic example

# Casselman / Alexandria – olden days

Thomas-Watson - Ta... x Firefly | Prodigeeek x Maxville, ON to Cass... x

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Maxville, On

Casselman, ON

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### Driving directions to Casselman, ON

Suggested routes

Route	Time	Distance
County Road 22 and ON-138 N	30 mins	24.8 km
County Road 15	37 mins	32.0 km
County Road 20	39 mins	24.4 km

Maxville, ON

- Head **southwest** on **County Road 22/ Mechanic St W** toward **John St**  
Continue to follow County Road 22 7.2 km
- Turn **right** at **ON-138 N** (signs for **Moose Creek/ON-138**) 8.2 km
- Continue onto **County Road 8** 3.9 km
- Turn **left** at **County Road 3/Route 600 Est** 3.3 km
- Continue onto **St Isidore Rd** 2.0 km
- Turn **right** at **St Joseph St** 110 m
- Take the 1st **right** onto **Station St** 41 m

Casselman, ON

Casselman, Prescott... | casselman

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# Casselman / Alexandria – 417

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### Driving directions to Casselman, ON

Suggested routes

County Road 20 and ON-417 W	21 mins
25.9 km	
County Road 22, ON-138 N and ON-417 W	23 mins
25.0 km	
County Road 3	41 mins
30.8 km	

Maxville, ON

- Head **northwest** on **County Road 20/Main St N** toward **Alexander St W**  
Continue to follow County Road 20 7.2 km
- Turn **right** to merge onto **ON-417 W** toward **Ottawa** 14.9 km
- Take exit **66** for **County Road 7/Principale Street N** toward **Casselman** 600 m
- Merge onto **Principale St** 850 m
- Turn **left** at **St Isidore Rd** 130 m
- Take the 1st **right** onto **St Joseph St** 110 m
- Take the 1st **right** onto **Station St** 41 m

Casselman, ON

Save to My Maps

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# Casselman / Alexandria – after DSI

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Avoid highways Avoid tolls

By car Get Directions

Driving directions to Casselman, ON  
283 km – about 3 hours 19 mins  
Via Autoroute 720 E - remove

Maxville, ON

1. Head **northwest** on **County Road 20/Main St N** toward **Alexander St W**  
Continue to follow County Road 20 6.8 km
2. Turn **left** to merge onto **ON-417 E** toward **Montreal**  
Entering QC 51.3 km
3. Continue onto **Autoroute 40 E** 66.3 km
4. Take the exit on the **left** onto **Autoroute 15 S** toward **Autoroute 10/Montréal/Centre Ville/Pont Champlain** 6.0 km
5. Take exit **63-E** on the **left** to merge onto **Autoroute 720 E/Autoroute Ville-Marie** toward **Centre Ville** 6.3 km
6. Take exit **6** toward **Boulevard Saint Laurent/Rue Berli** 210 m
7. Keep **left** at the fork to continue toward **Avenue Viger Est** 170 m
8. Turn **left** at **Avenue Viger Est** 160 m
9. Take the ramp on the **left** onto **Autoroute 720 W** 5.3 km

Casselman, Presc... | casselman

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# Ottawa (DSL) to Ottawa (DSL)

Thomas-Watson - Ta... x Firefly | Prodigeeek x Maxville, ON to Cass... x graphical traceroute ... x The Xtraceroute hom... x 470 Dawson Ave, Ot... x

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470 Dawson Ave, Ottawa, ON

305 Southcrest Private, Ottawa, ON K1V 2B7

By car Get Directions

Driving directions to 305 Southcrest Private, Ottawa, ON K1V 2B7

882 km – about 10 hours 11 mins

Via ON-2 W - remove

470 Dawson Ave  
Ottawa, ON K1Z 5V6

1. Head **southeast** on **Dawson Ave** toward **Iona St** 170 m
2. Turn **left** at **Iona St** 49 m
3. Take the 1st **right** onto **Kirkwood Ave** 700 m
4. Turn **right** at **Carling Ave W/Regional Road 38 W** 190 m
5. Take the **Trans Canada Highway W/ON-417 W/Queensway W** ramp on the **left** 300 m
6. Merge onto **ON-417 W/Queensway** 6.6 km
7. Take the exit on the **left** onto **ON-416 S** toward **ON-401** 75.2 km
8. Take the exit onto **ON-401 W** 343 km
9. Take the **ON-404/Don Valley Parkway** exit toward **Downtown/Centre-Ville** 400 m
10. **Keep left** at the fork to continue toward **Don Valley Pkwy S** and merge onto **Don Valley Pkwy S** 15.2 km
11. Take the **Gardiner Expressway W** exit 550 m

Hide

Driving directions to 305 Southcrest Private, Ottawa

Bus stops near my house

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# Ottawa (DSL) to Ottawa (DSL) (bad day)

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Find businesses, addresses and places of interest. **The route has been modified. Undo**

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470 Dawson Ave, Ottawa, ON K1Z 5V6  
305 Southcrest Private, Ottawa, ON K1V 2B7

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**Driving directions to 305 Southcrest Private, Ottawa, ON K1V 2B7**  
4,200 km – about 1 day 20 hours  
Via ON-2 W, Autoroute 40 E, I-95 S, W 95th St - [remove all](#)

1. Head **southeast** on **Dawson Ave** toward **Iona St** 170 m
2. Turn **left** at **Iona St** 49 m
3. Take the **1st right** onto **Kirkwood Ave** 700 m
4. Turn **right** at **Carling Ave W/Regional Road 38 W** 190 m
5. Take the **Trans Canada Highway W/ON-417 W/Queensway W** ramp on the **left** 300 m
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11. Take the **Gardiner Expressway W** exit 550 m

Hide

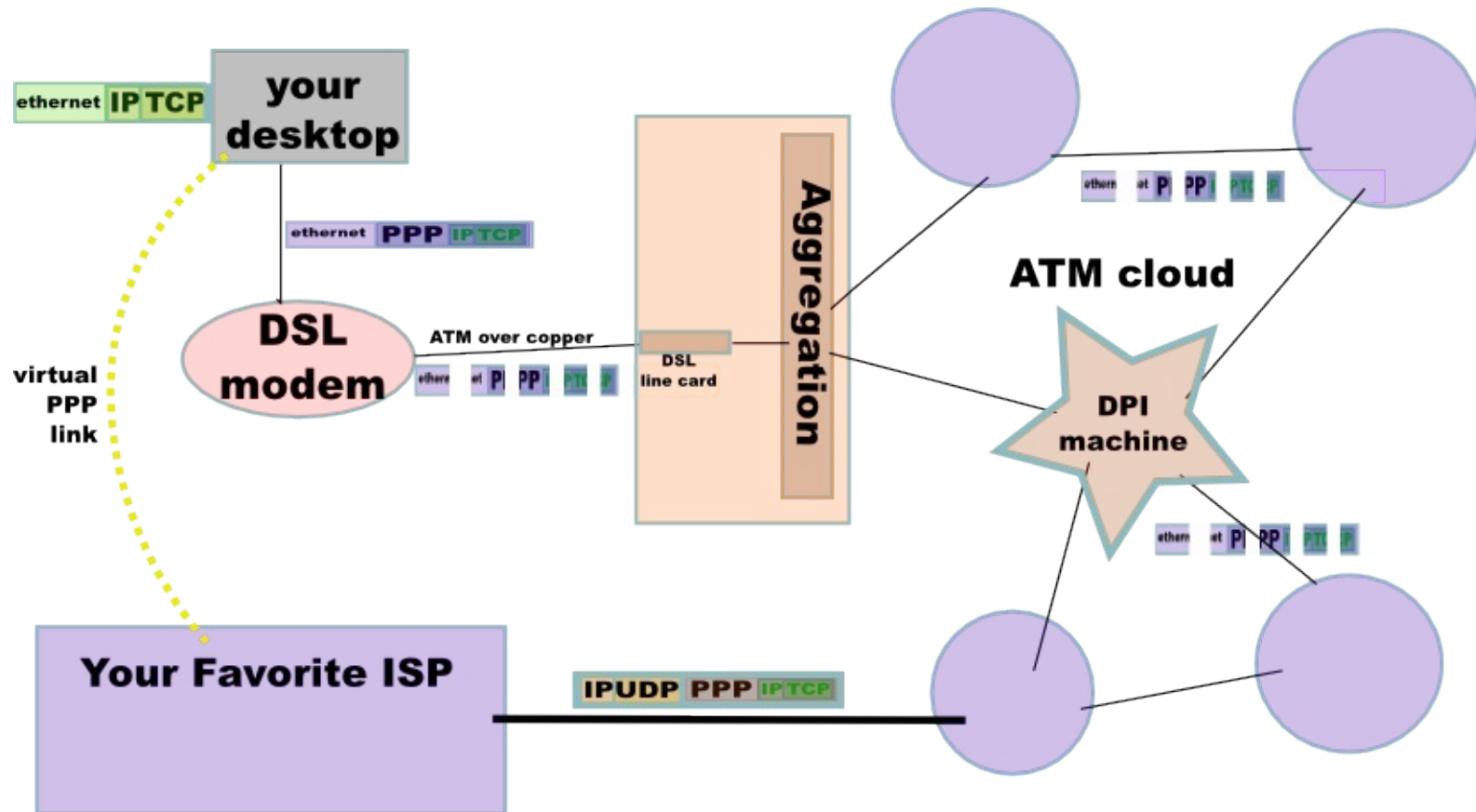
Driving directions to 305 Southcrest Private, Ottawa, ON K1V 2B7

Bus stops near my house

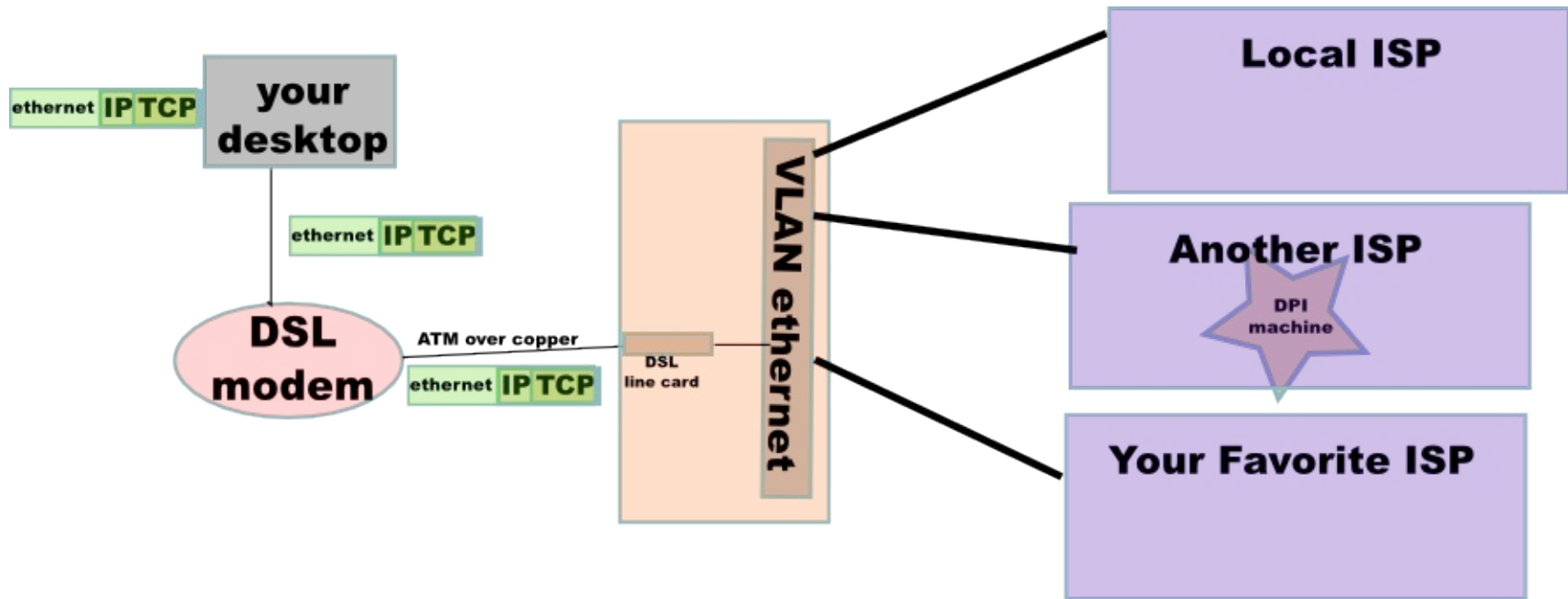
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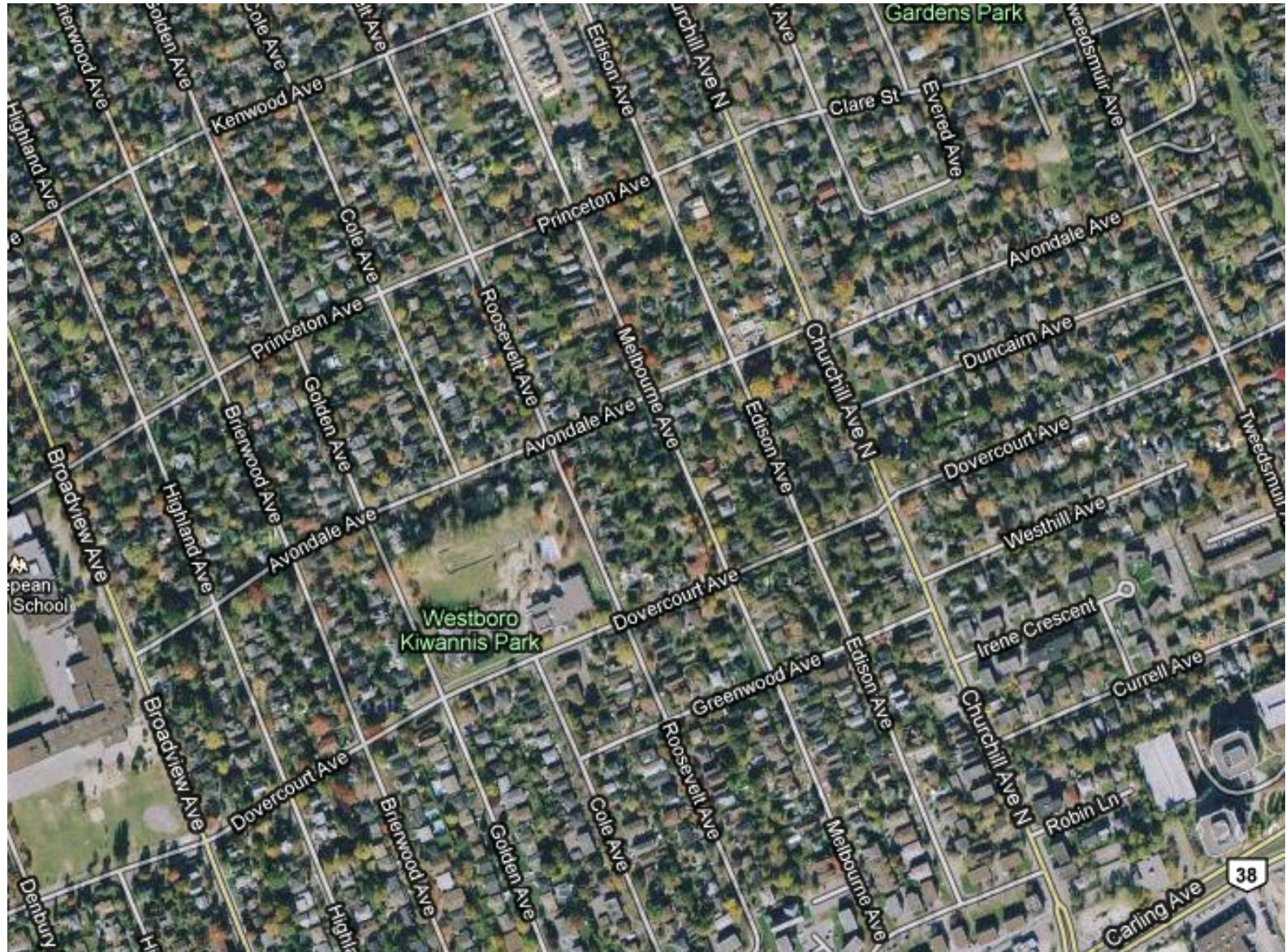
# What got built (technical diagram)



# What they should have built (technical diagram)

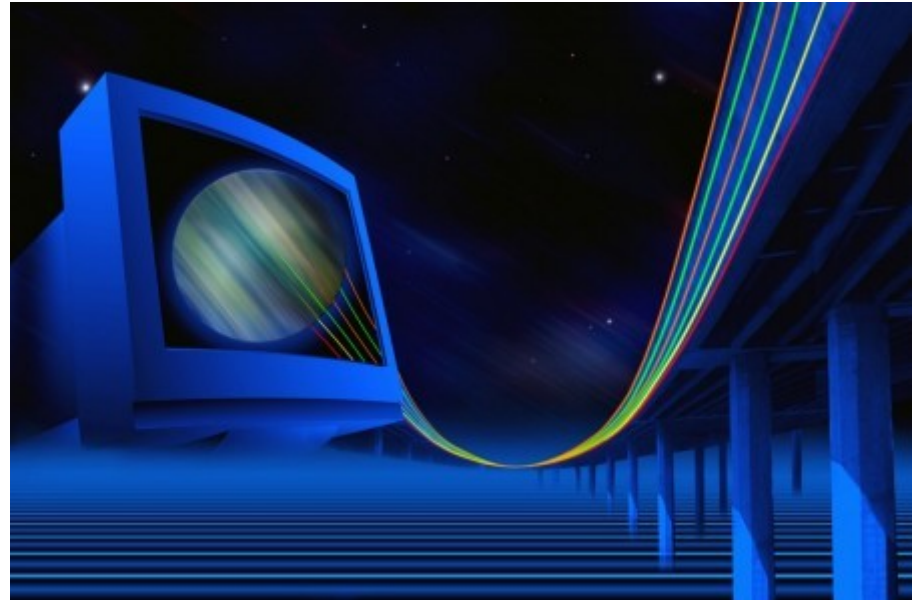


# What it looks like as a highway



# Conclusion

“poor planning  
on your part,  
does not constitute  
an emergency on  
my part”



**SURVEY:**

<http://www.surveymonkey.com/s/JB3F6N8>

# Peer 2 Peer view of casselman

think in terms of ms of latency

30ms to Montreal

30ms back to Ottawa

-or-

30ms to Montreal

10ms to New Jersey

20ms to Queens