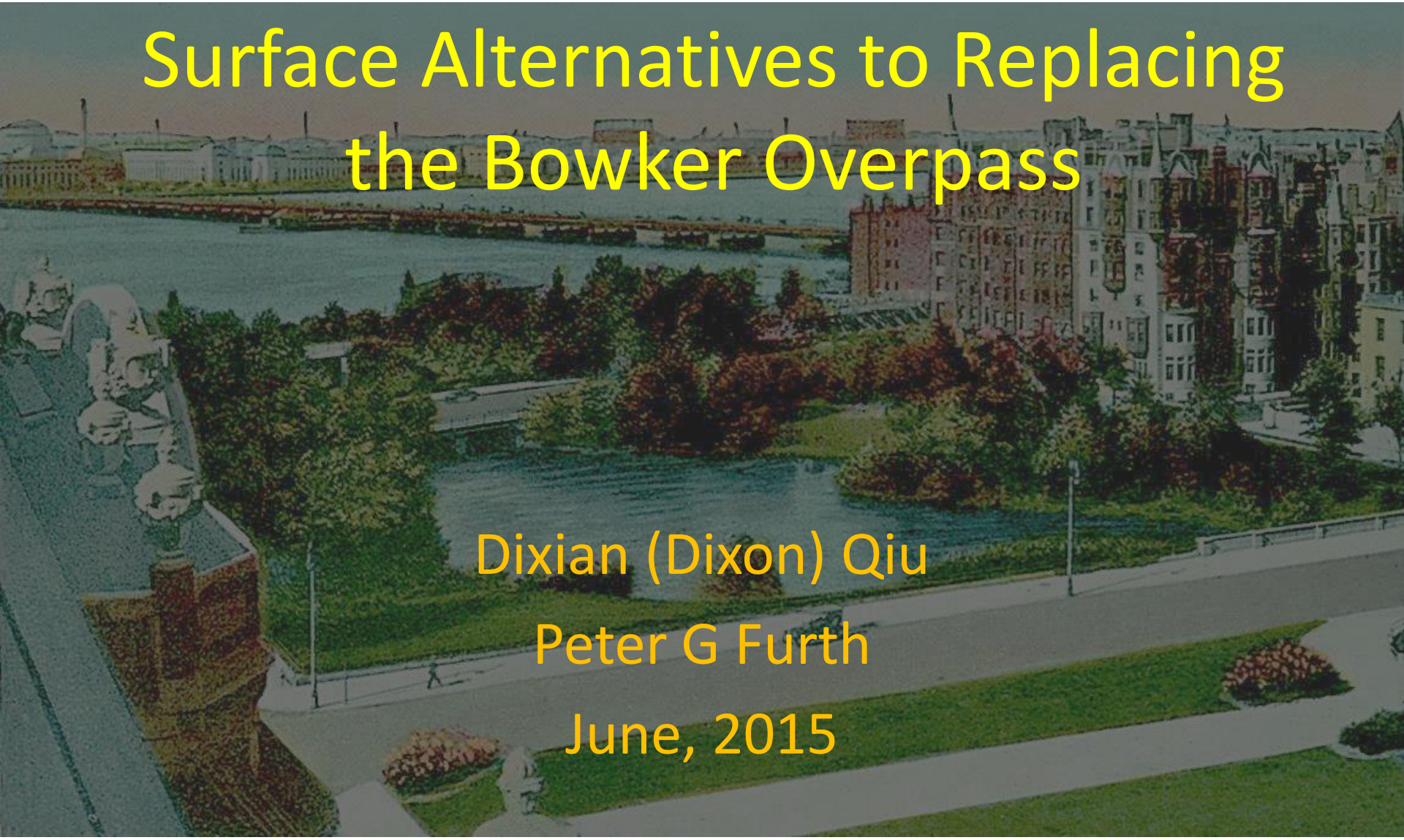


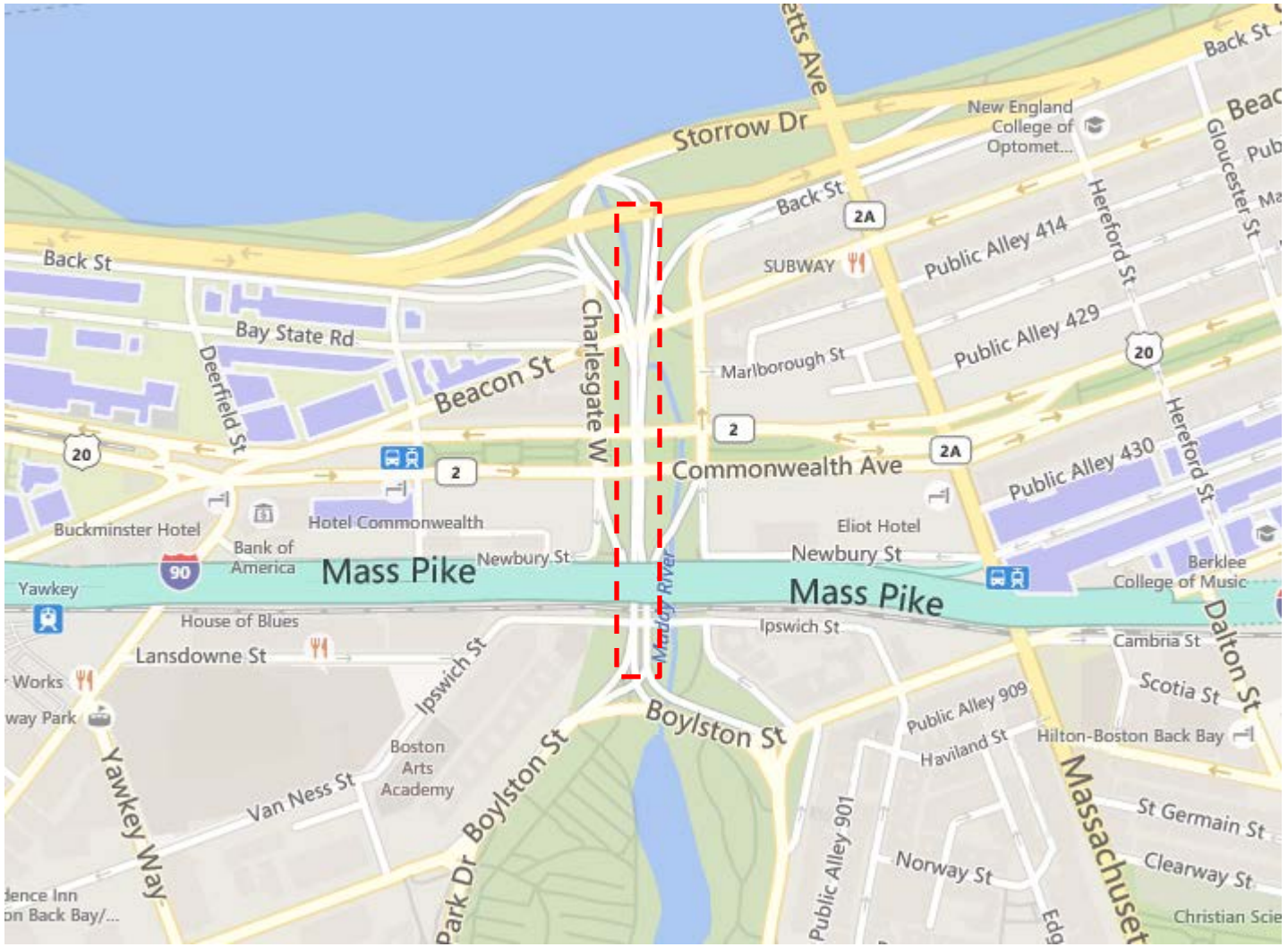
Surface Alternatives to Replacing the Bowker Overpass

Dixian (Dixon) Qiu

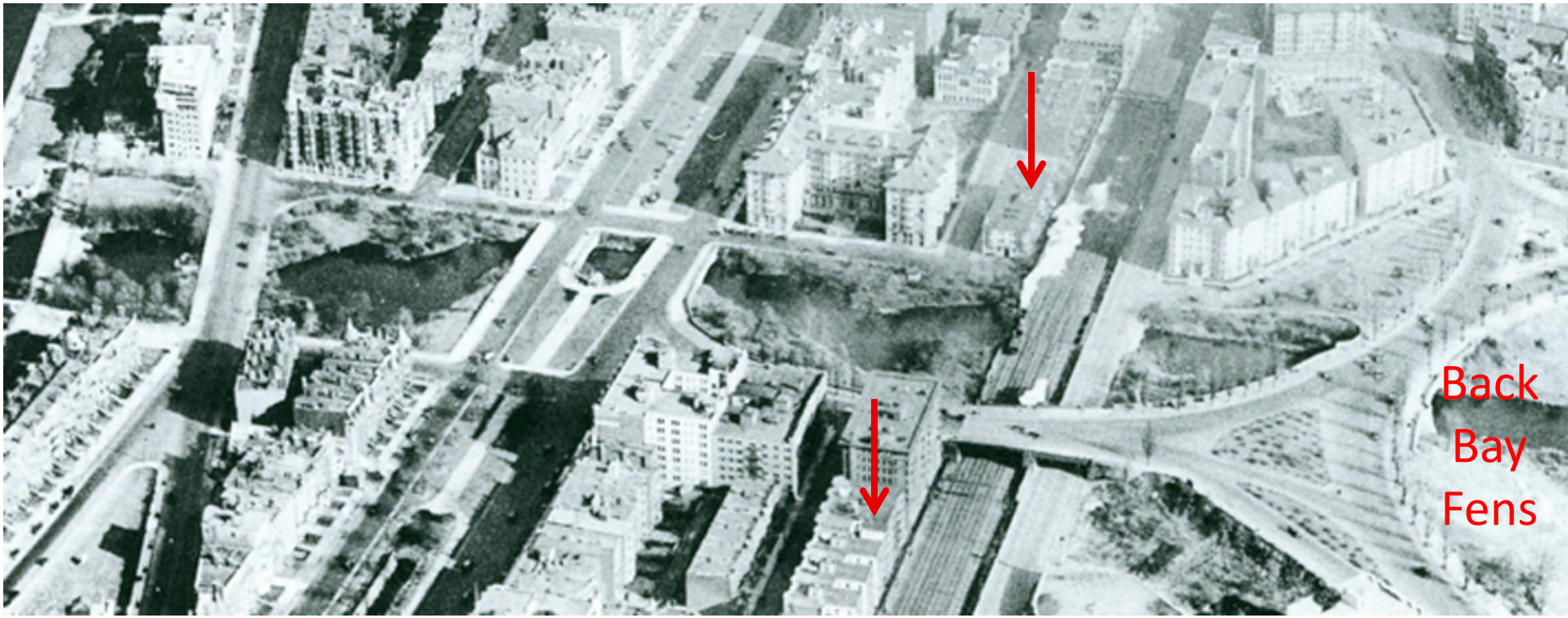
Peter G Furth

June, 2015

Bowker Overpass is an elevated highway running the length of Charlesgate Park, connecting Storrow Drive to the Back Bay Fens



Charlesgate Park, designed by Olmsted as a place of beauty, opened in 1878, and elegant buildings soon bordered it.



These blocks were demolished when the Mass Pike was extended into the city in 1963, and the park shrunk a bit

Former view from Comm Ave, looking toward the Fens

Same view today

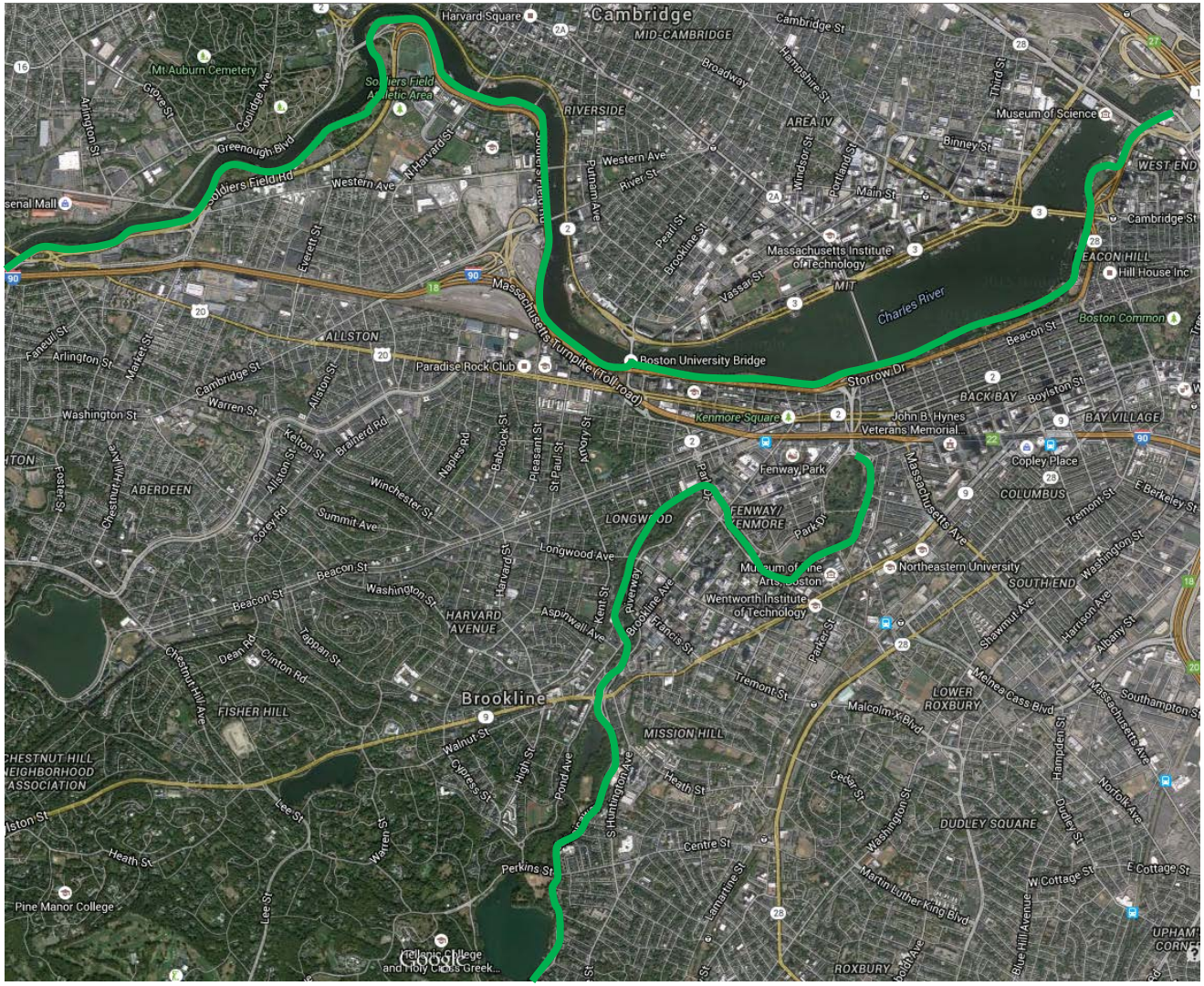
Bowker Overpass opened in 1965, one year before Section 4f of the Federal Highway Act was enacted, protecting urban parks

- In the north, a large part of the Charles River was filled to make room for an interchange with Storrow Drive.
- In the middle, the park was covered with an elevated highway

Old footbridge and pump house

The Esplanade was squeezed to a paved strip 10 ft wide, bordering a highway

Missing Link: The Muddy River Path stops short of meeting the Charles River Path



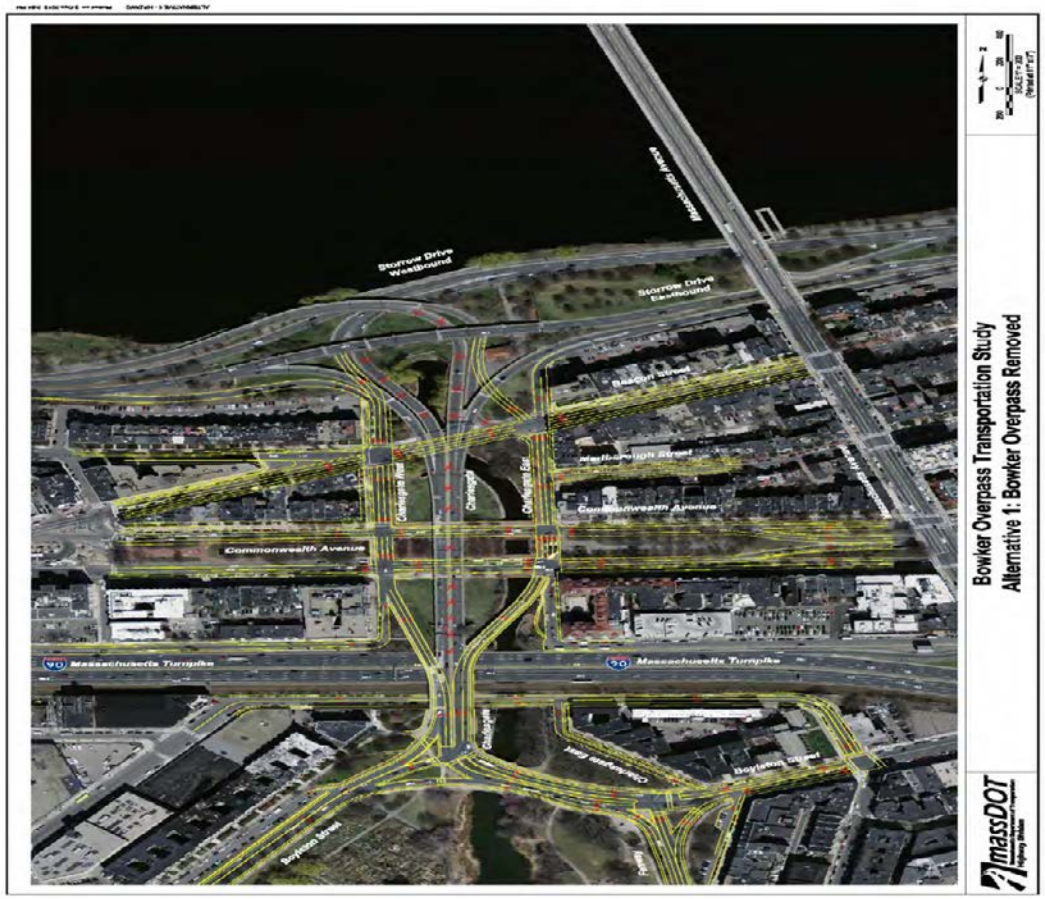
The Bowker is nearing the end of its life. The choice:

- Reconstruct it, with
  - Added path connections
  - Park beautification under the overpass
- Eliminate it, involving:
  - Widening surface roads to carry the traffic
  - Restoring the integrity of Charlesgate Park
  - Connecting Charlesgate Park with the Esplanade

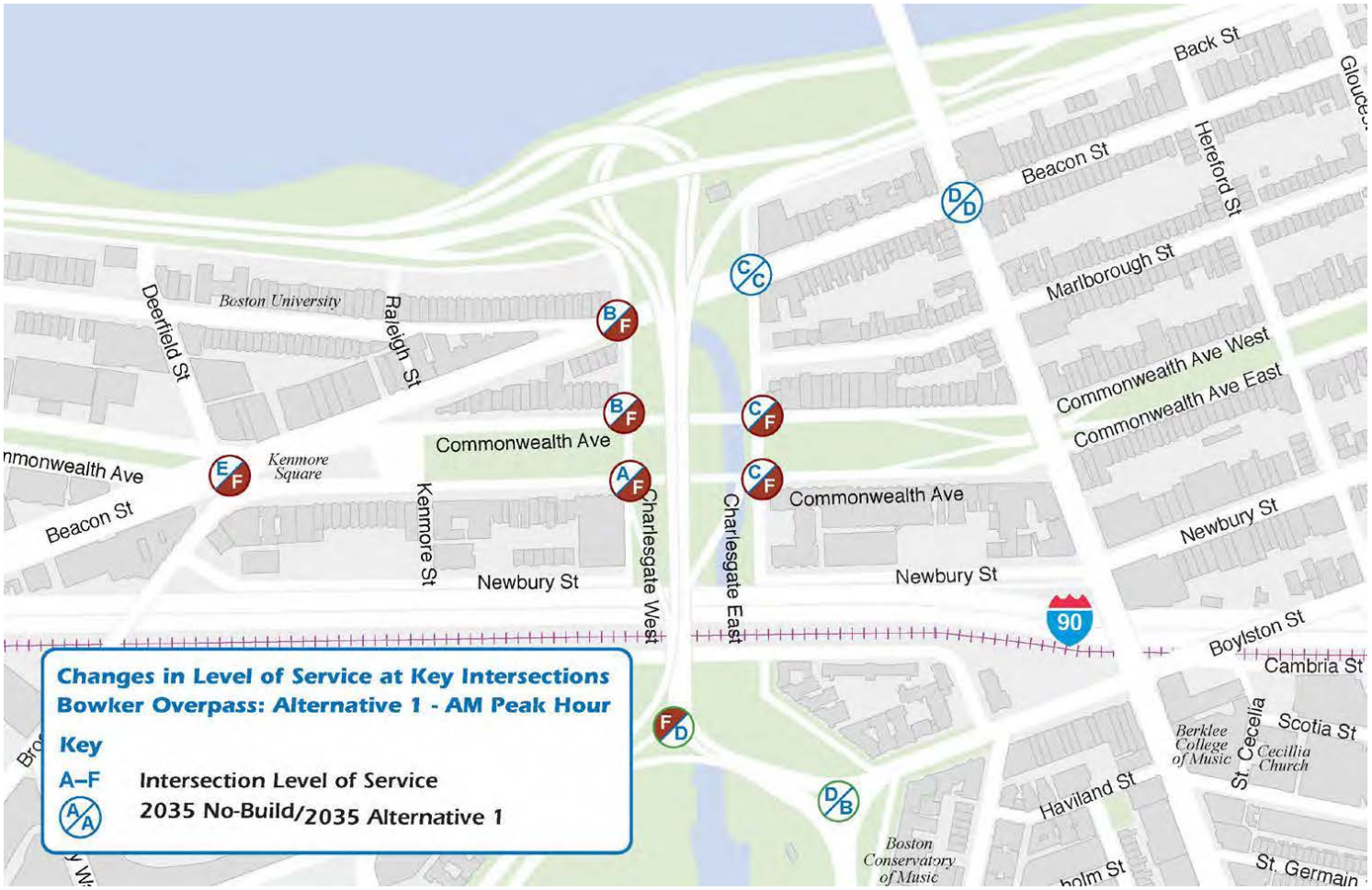
Can the Charlesgate surface roads carry the traffic?

- Access to Longwood / Fenway is critical for the local economy, public health
- Parallel streets (Mass. Ave., Brookline Ave.) can't provide any traffic relief
- Can't rely on relief from any possible future MassPike ramps

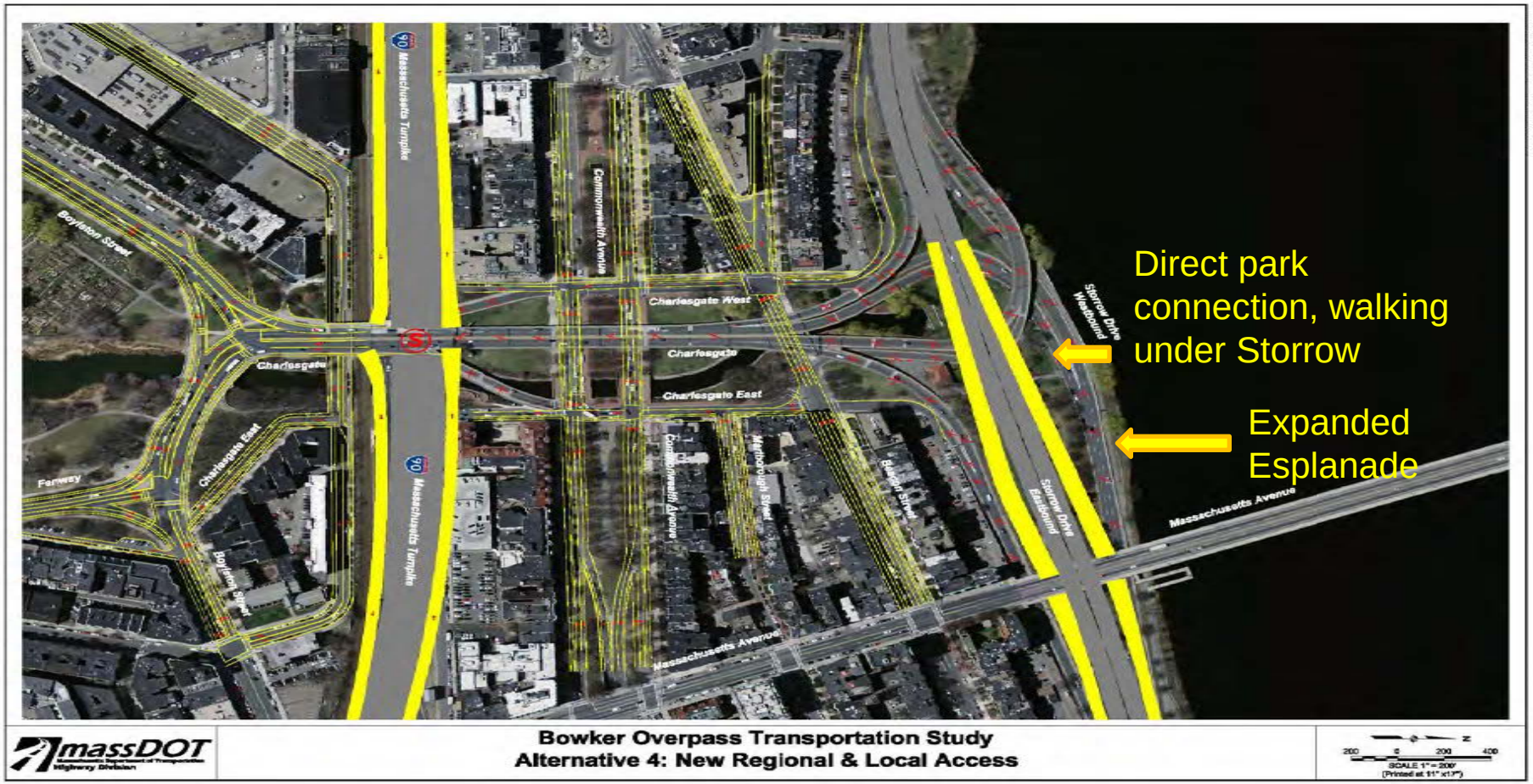
MassDOT's Alternative 1 was their "Surface Alternative".



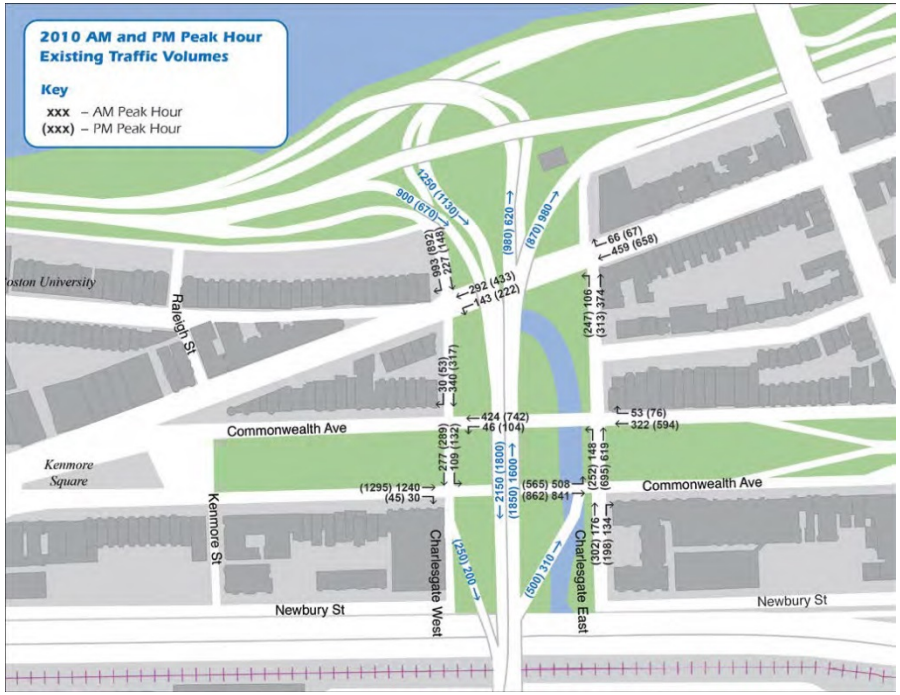
Several intersections were found to be capacity bottlenecks (“F”)



Also, MassDOT's Alternative 4 included an inspiring feature: Storrow Drive shifted away from the river



Our traffic analysis uses 2010 volumes

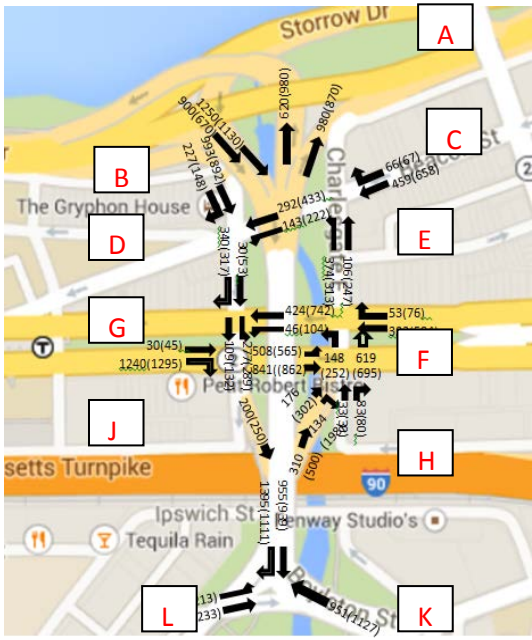


MassDOT results use projected 2035 volumes (not made public)

- Assume annual background growth (how much? Justified?)
- Adds growth expected from new developments
- Do they account for demand shifts toward transit (Yawkey Station, Boston Landing Station, ...) and bike?

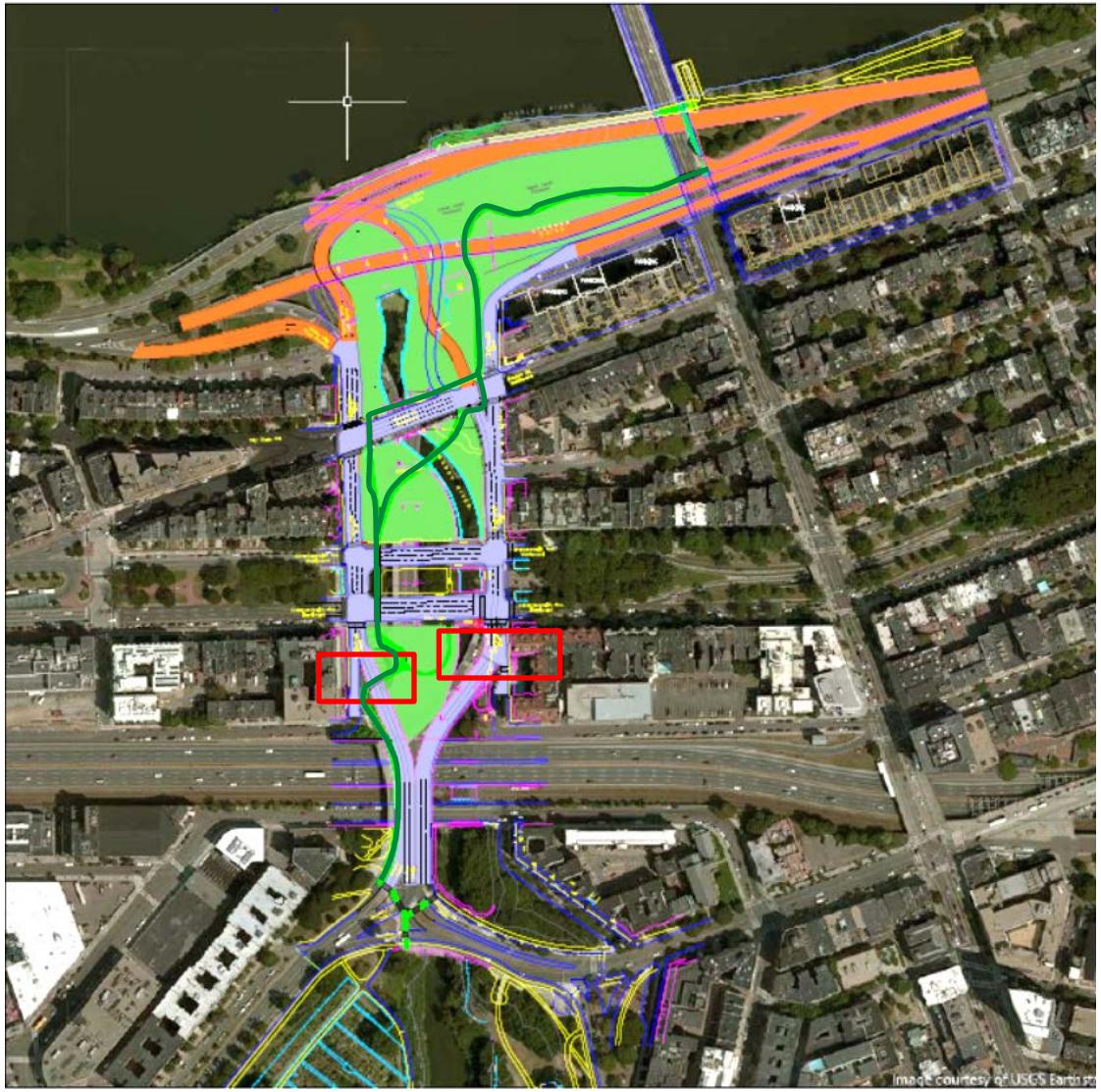
Local Origin-Destination Flow Estimates (a.m. peak)

From \ to	A	B	C	D	E	F	G	H	J	K	L	total
A	0	0	0	727	10	45	18	0	60	458	792	2110
B	0	0	0	266	6	47	9	0	31	427	473	1260
C	0	0	0	0	0	0	3	0	9	40	91	143
D	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0
F	6	28	0	2	16	0	282	0	3	11	26	375
G	341	51	0	1	99	748	0	0	2	18	10	1270
H	27	14	0	1	8	0	28	0	0	2	3	83
J	0	0	0	0	0	0	0	0	0	0	0	0
K	481	337	0	4	27	33	68	0	1	0	0	951
L	499	283	0	4	26	101	45	0	1	0	0	959
Total	1354	713	0	1006	192	975	454	0	107	955	1395	

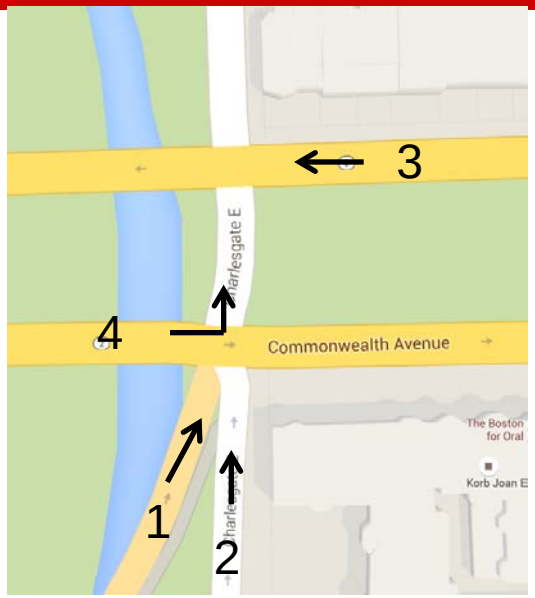


Proposed road layout A: Storrow Drive unchanged.

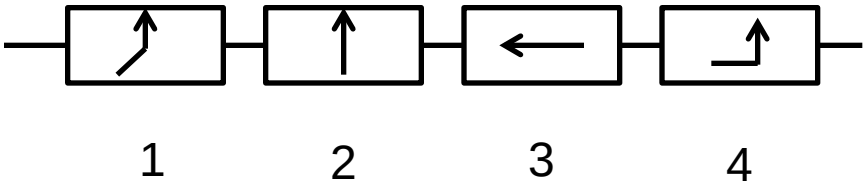
North-south roads widened to 3 thru lanes plus left turn lanes.



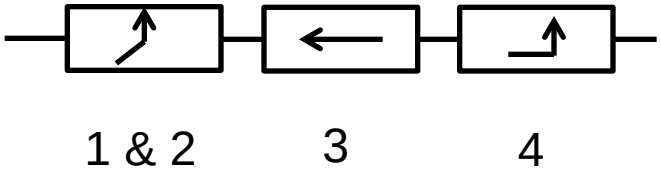
Charlesgate East ramp: Pre-signal, merging Charlesgate East traffic into one stream, resolves a bottleneck



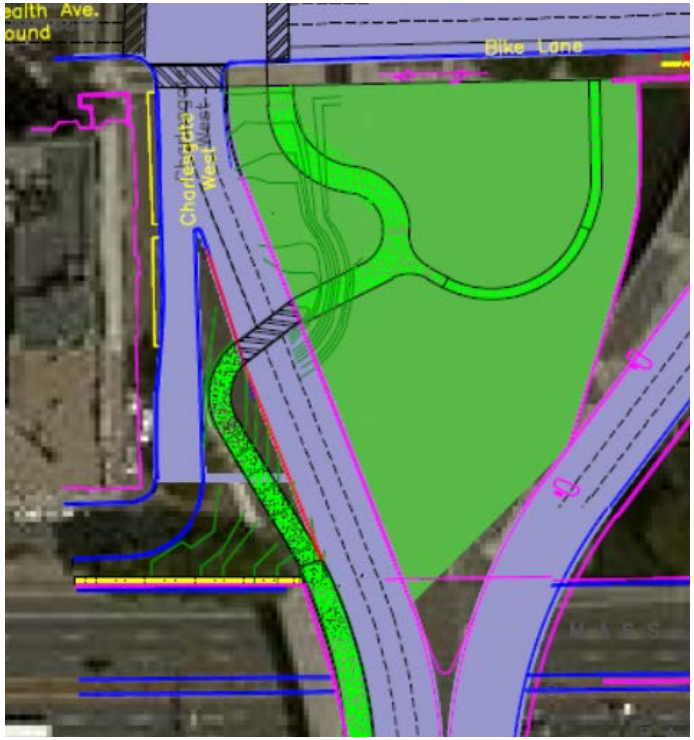
Existing: splits time 4 ways



With pre-signal merging streams 1&2: splits time 3 ways

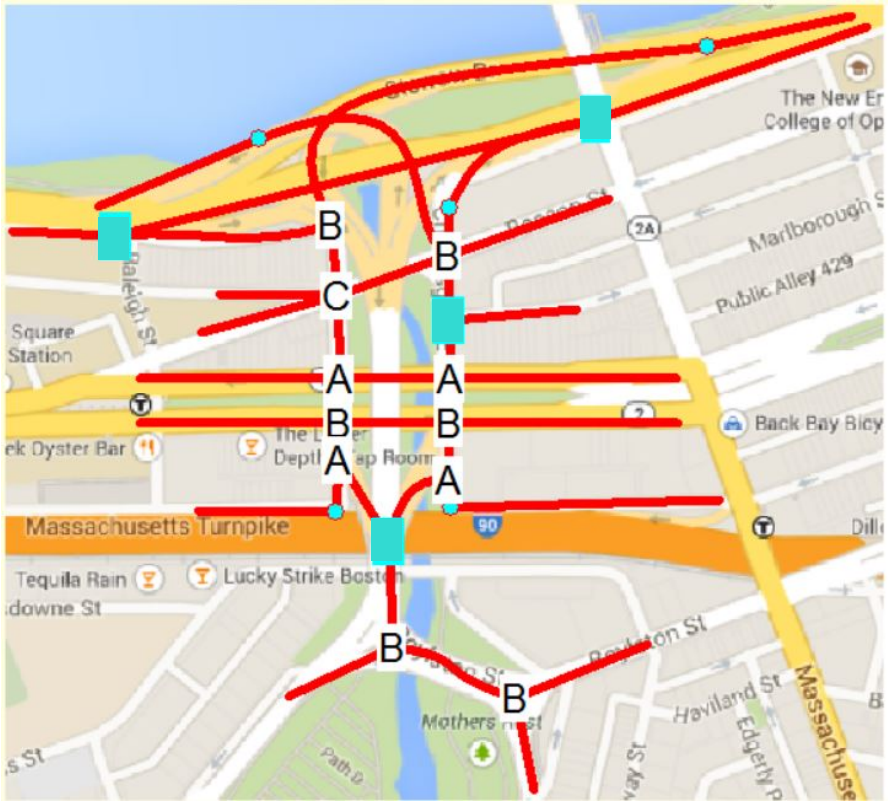


Charlesgate West ramp: New signal for Muddy River path to enter the Park

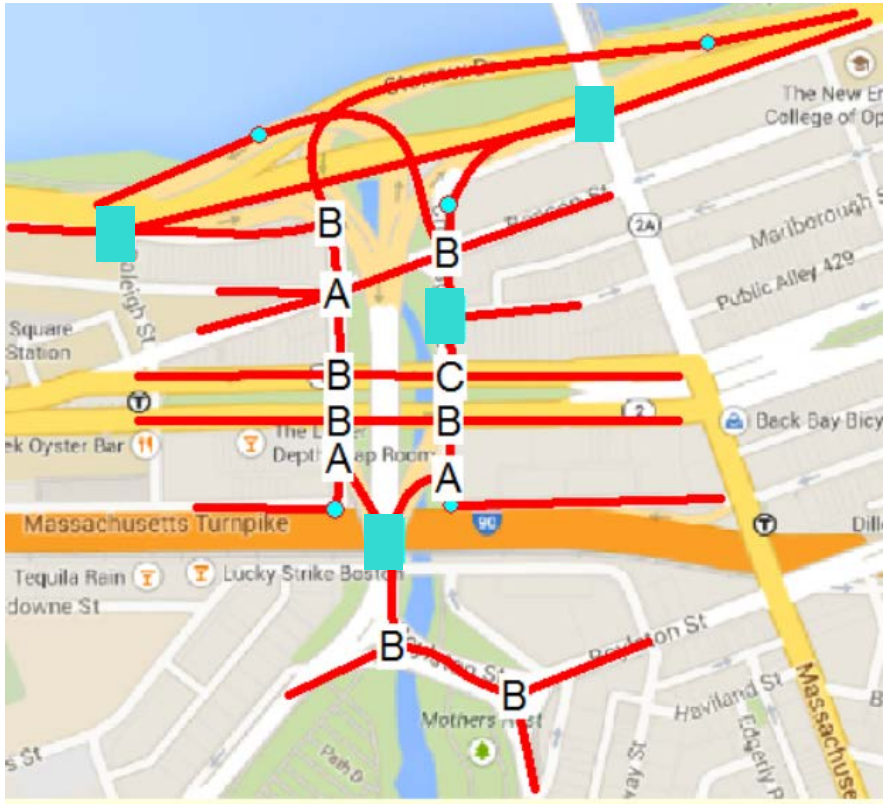


Level of Service Results, 2010 volumes

a.m. peak

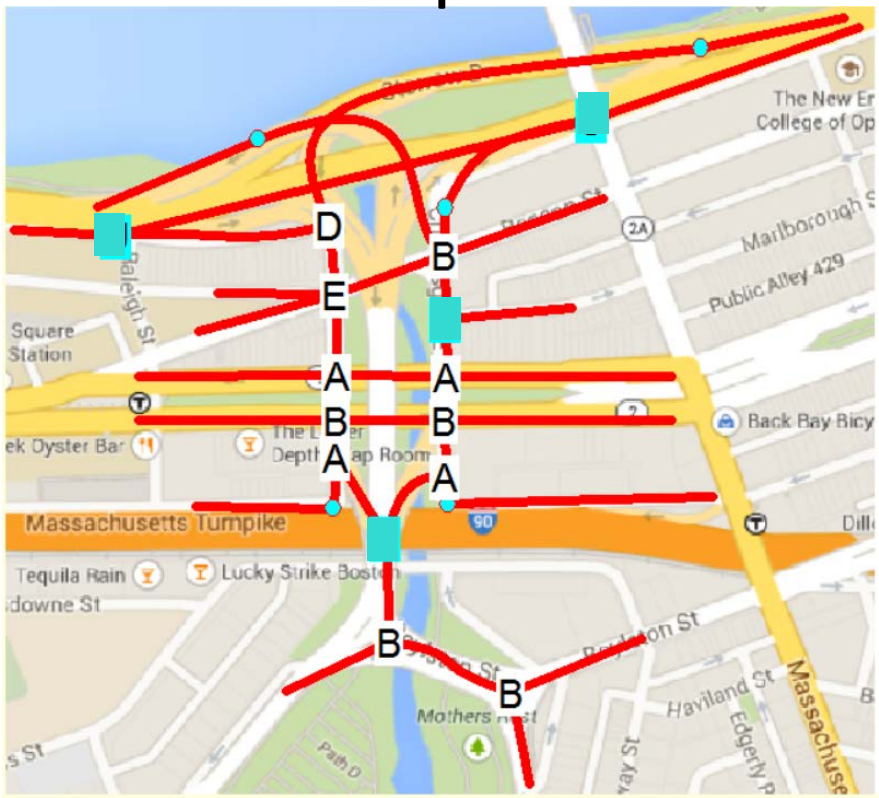


p.m. peak

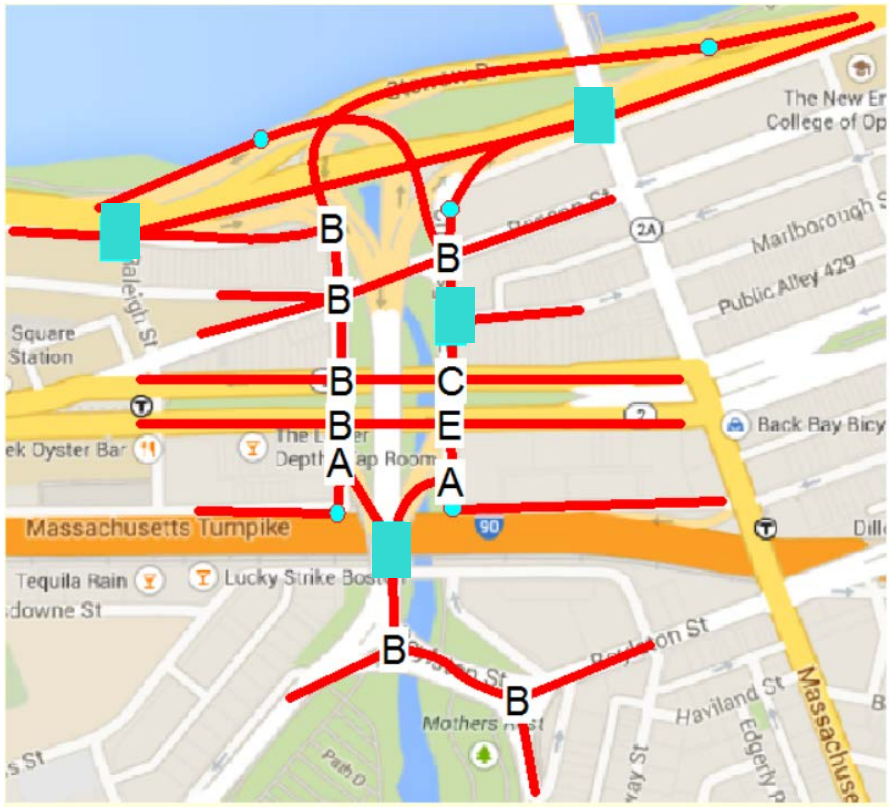


Level of Service, 10% More Traffic

a.m. peak



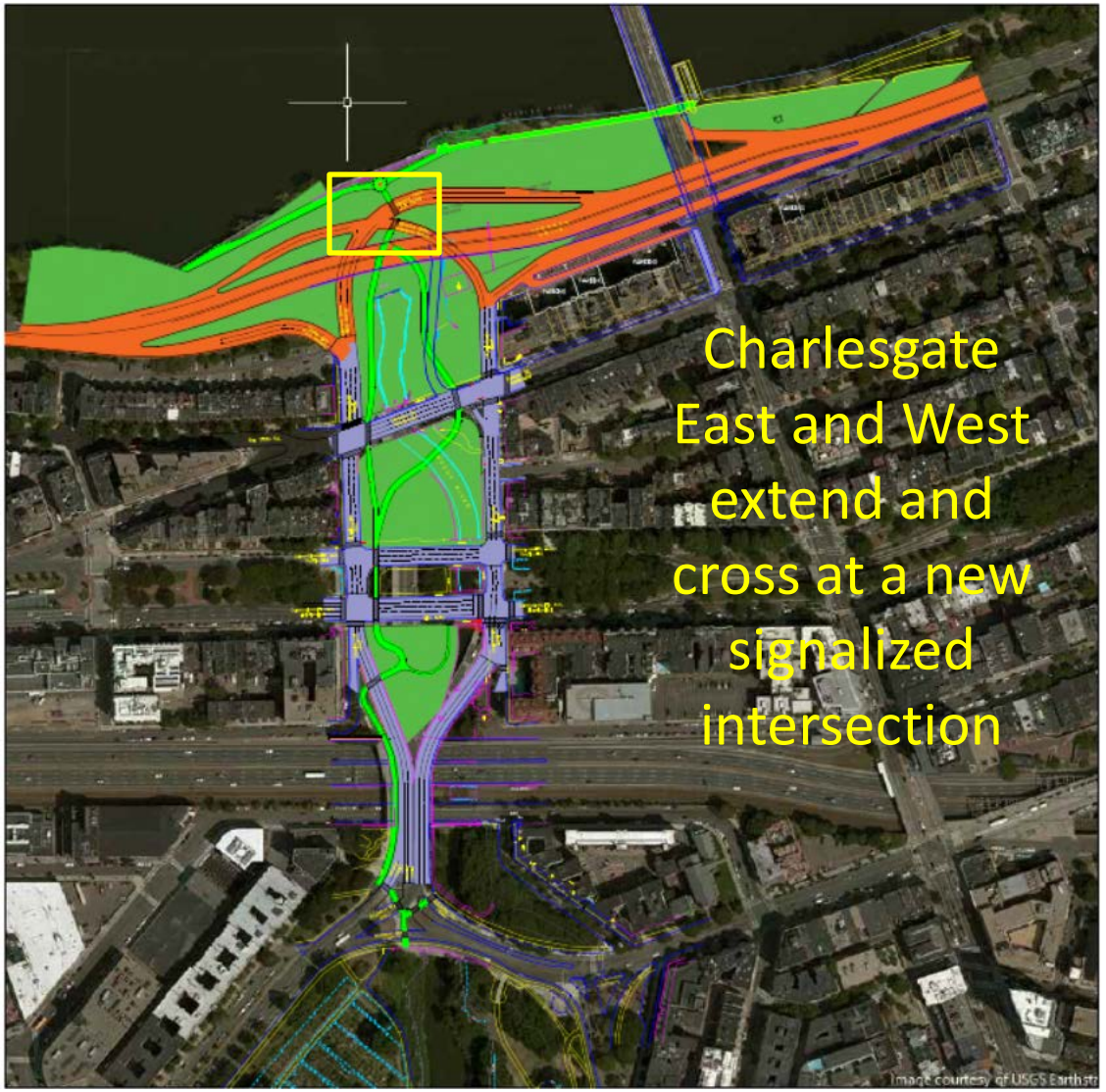
p.m. peak



Pedestrian Delay at Crossings

Proposed layout B:

Storrow Drive Outbound shifted away from the river



Traffic Impacts for Layout B

- Same as those for Layout A at all the existing intersections
  - Acceptable level of service, even with 10% growth in traffic
  - Short pedestrian crossing delays
- One new intersection where Charlesgate East and West meet
  - For cars: high utilization but low delay
  - For peds: low-delay crossing in two stages

Traffic simulation

- Bowker Overpass.mp4

Conclusion

- We should make every effort to repudiate the blunder we made in 1965, turning Charlesgate Park into a highway wasteland and squeezing the Esplanade
- Both Options A and B offer ways to restore Charlesgate Park while maintaining the necessary accessibility to the Longwood area that the Bowker now offers
- Option A, which retains existing ramps to / from Storrow Driver, restores much of Charlesgate Park, but leaves it cut off from the Charles River.
- Option B, which shifts the Storrow outbound roadway, restores both Charlegate Park and the Esplanade and their direct connection.