

GO BY  
STREETCAR



# Proposed Long-Term Streetcar Network



The Most Livable  
City in America



# Study Overview/Purpose


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- Examine the feasibility of streetcar service in Saint Paul
- Determine where it would work best
- Determine where to start



# What is Streetcar Service?

Consists of many elements:

Vehicles	Stops	Right-of-Way
		
Short Stop Spacing	Fare Payment	New Development
		

# Streetcar Vehicles

- Modern, vintage, or replica of vintage streetcar
- Usually single vehicle



Modern Streetcar, Toronto



Modern Streetcar, Portland



Modern Streetcar, Seattle



Modern Streetcar, Tacoma



Vintage Streetcar, Memphis



Historic Replica Streetcar, New Orleans

# Streetcars in the Street

- Usually operate in mixed-traffic
- But can also operate in exclusive rights-of-way



Portland Streetcar



Seattle Streetcar



Tucson Streetcar (Planned)



San Francisco F-Line



Portland Streetcar



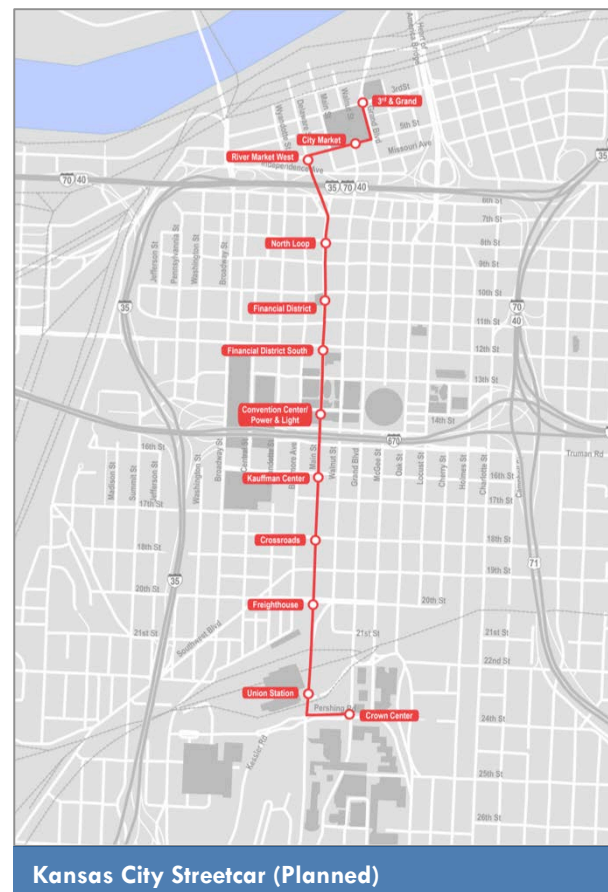
Kansas City Streetcar (Planned)

# Streetcar Route Length & Stop Spacing

- Short lengths; focus on shorter more local trips
- Frequent stops; approximately every two blocks



2.8 miles



2.1 miles

# Streetcar Stops

Smaller scale/less elaborate than LRT stations



Portland Streetcar Stop



Seattle Streetcar Stop



Toronto Streetcar Stop



Future Westgate Light Rail Station, St. Paul

# Economic Development Patterns

## *Streetcar*

- Linear economic development



South Lake Union Streetcar, Seattle

## *Light Rail*

- Nodal economic development



The Lyric near the future Raymond Ave Station, St. Paul





# Construction Impacts

## *Streetcar*

- Lower impact
- Faster construction



First Hill Streetcar construction, Seattle

## *Light Rail*

- Greater impact
- Longer construction



Green Line construction, St. Paul

# Why Reintroduce Streetcar Service in St Paul?

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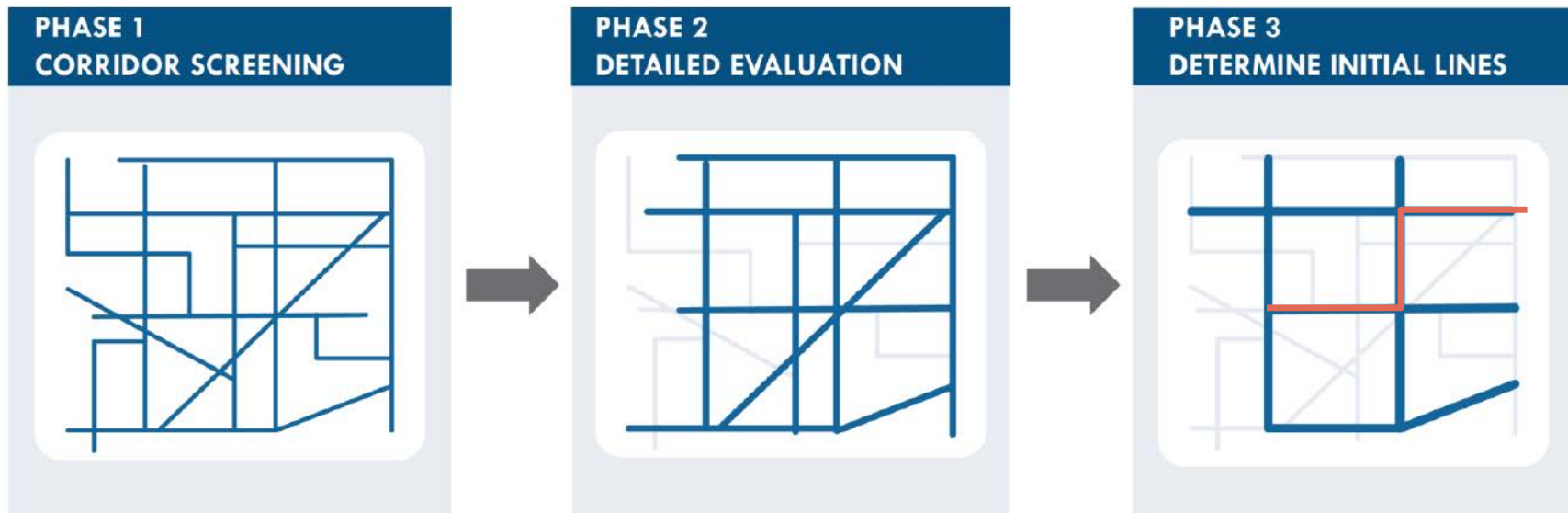
1. Improve transit service
2. Stimulate and support economic development



# Study Process

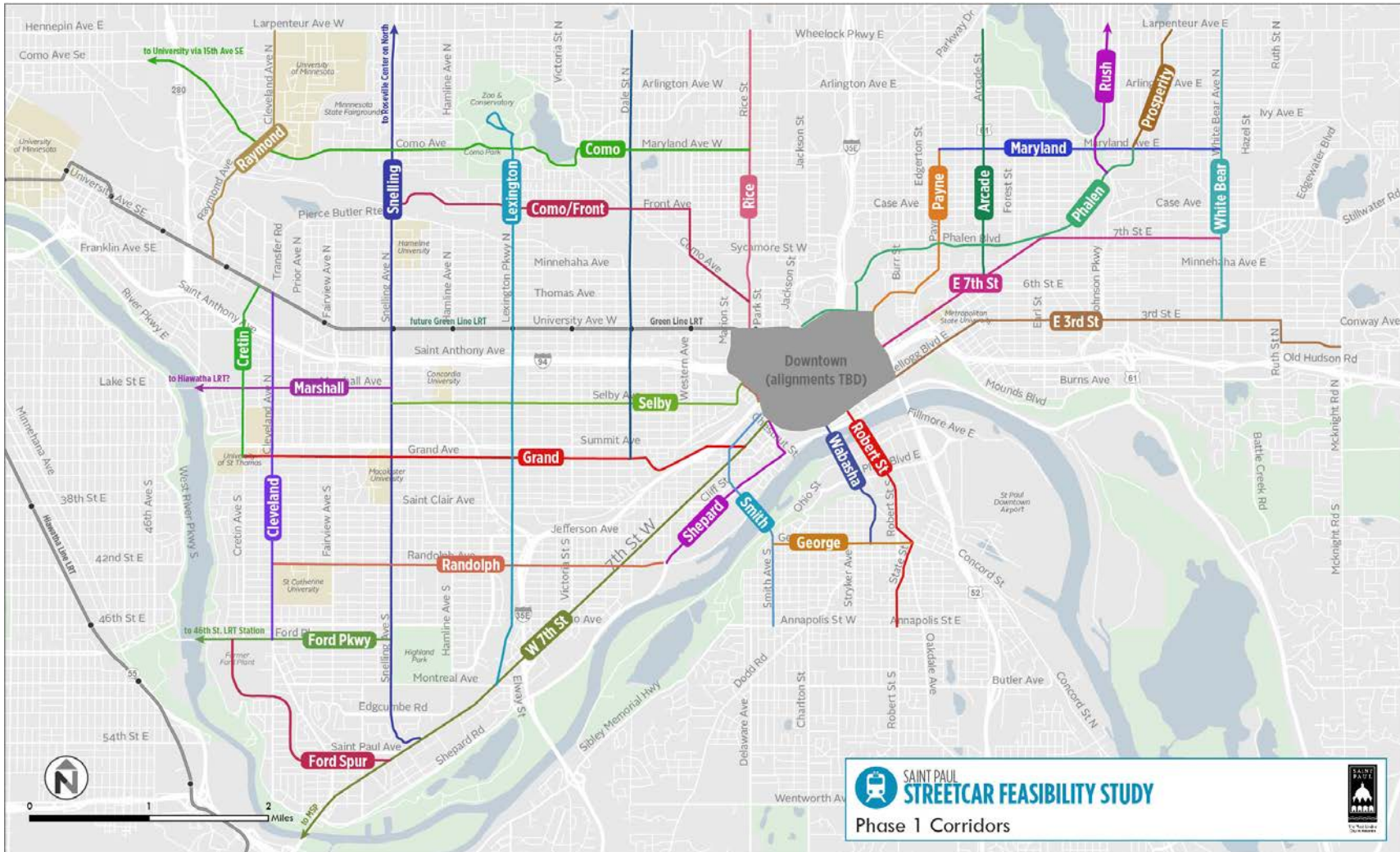
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- Three phased process to determine most effective streetcar lines
  - Screen universe of candidate corridors
  - Conduct detailed evaluation of potential lines
  - Determine first line
- Similar to process for Minneapolis Streetcar Feasibility Study



# Study Phase 1 (Fall 2012)

Screened most of Saint Paul's major corridors



# Phase 1 Primary Criteria

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Corridors screened based on three **Primary Screening Criteria**



**GRADE** considers streets that are too steep

✓ *All 30 corridors pass*

**GEOMETRY** considers streets with turns that are too sharp

✓ *All 30 corridors pass*

**OTHER PHYSICAL BARRIERS** considers streets too narrow, bridges too low, or freight RR crossings

✓ *All 30 corridors pass*

➡ *All 30 ✓ corridors moved on to Phase 1 supplemental evaluation criteria*

# Phase 1 Supplemental Criteria

Corridors evaluated based on four **Supplemental Evaluation Criteria**



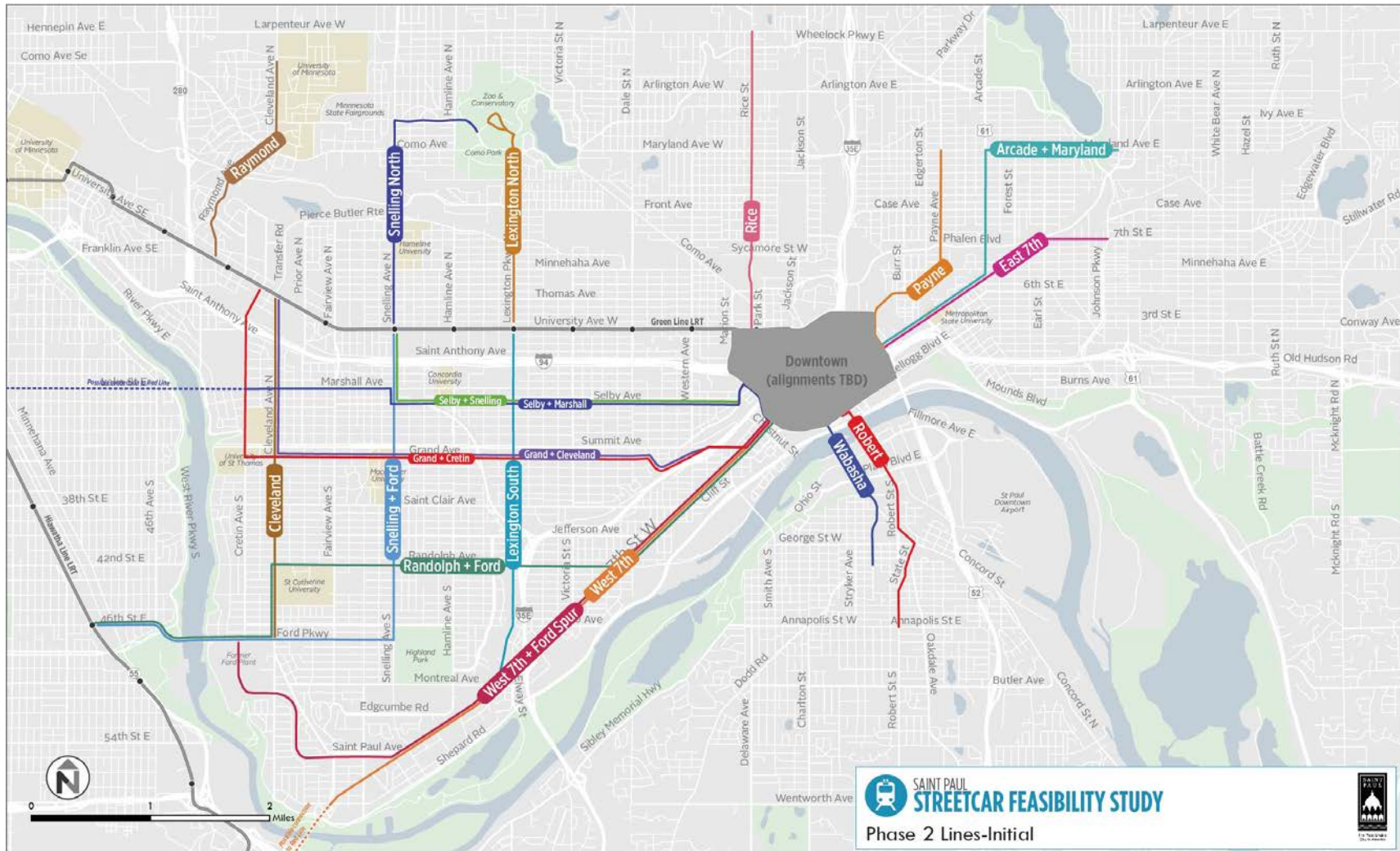
<b>TRANSIT-SUPPORTIVE LAND USE</b> considers the the transit-supportiveness of land uses	5 ✓✓ Best	9 ✓ Good	16 ▲ Fair
<b>SPEED &amp; RELIABILITY</b> considers traffic congestion that could impact streetcar speed and reliability	5 ✓✓ Best	23 ✓ Good	2 ▲ Fair
<b>OTHER TRANSIT INVESTMENTS</b> considers how corridors relate to other transit investments	7 ✓✓ Best	21 ✓ Good	2 ▲ Fair
<b>TERMINALS</b> considers the strength of the anchors at the ends	5 ✓✓ Best	10 ✓ Good	15 ▲ Fair



*19 corridors moved into Phase 2*

# Phase 2 Lines

19 lines were developed that could serve those corridors



# Phase 2 Evaluation

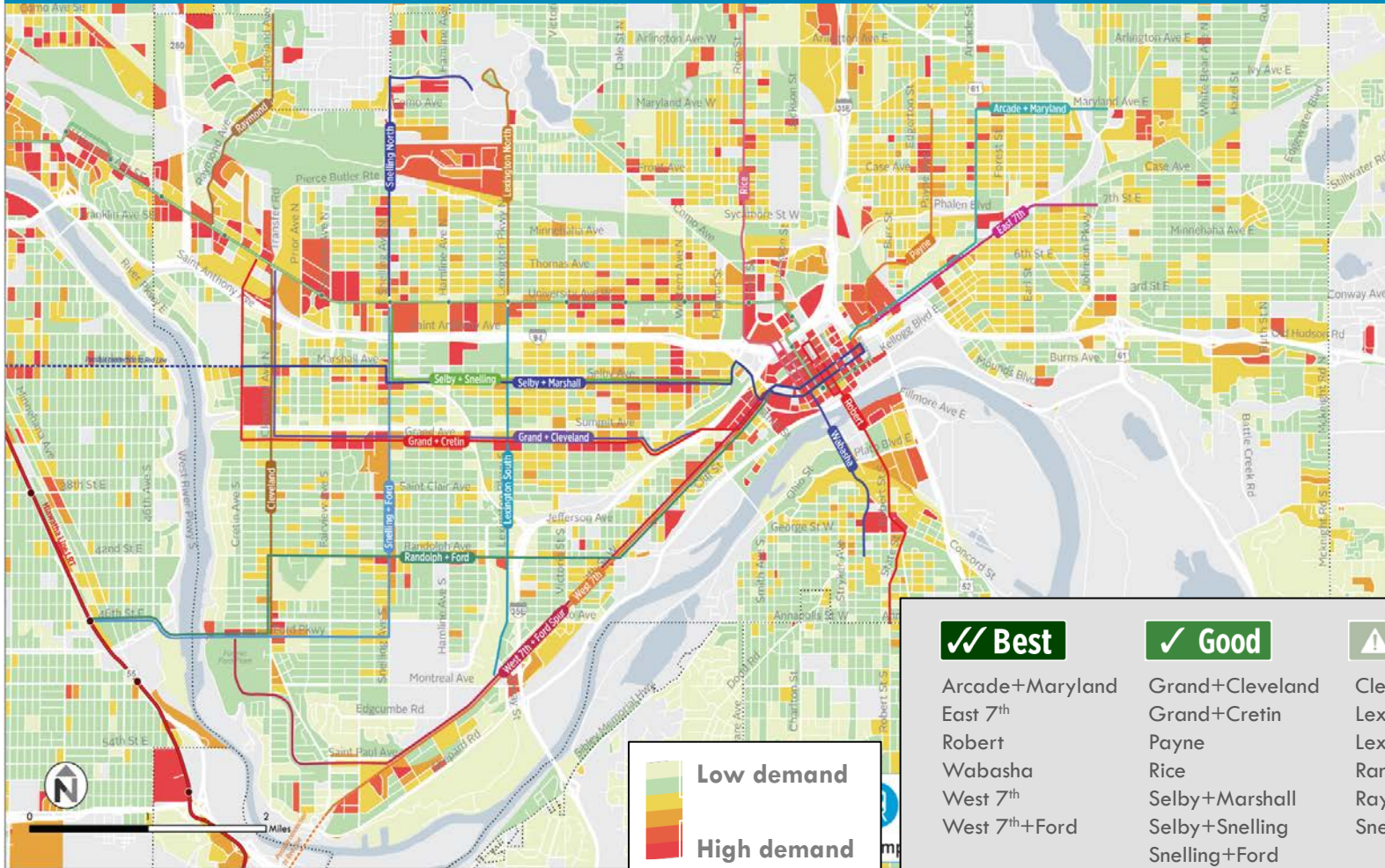
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- Three Primary Evaluation Criteria:
  1. Potential demand
  2. Land use
  3. Development potential
- 10 Supplemental Criteria
  - Community support
  - Transit speed and reliability
  - Equity
  - Pedestrian environment
  - Service to major activity centers
  - Operating costs
  - Capital costs
  - On-street parking impacts
  - Integration with existing bus service
  - Relationship to current/future HCT investments



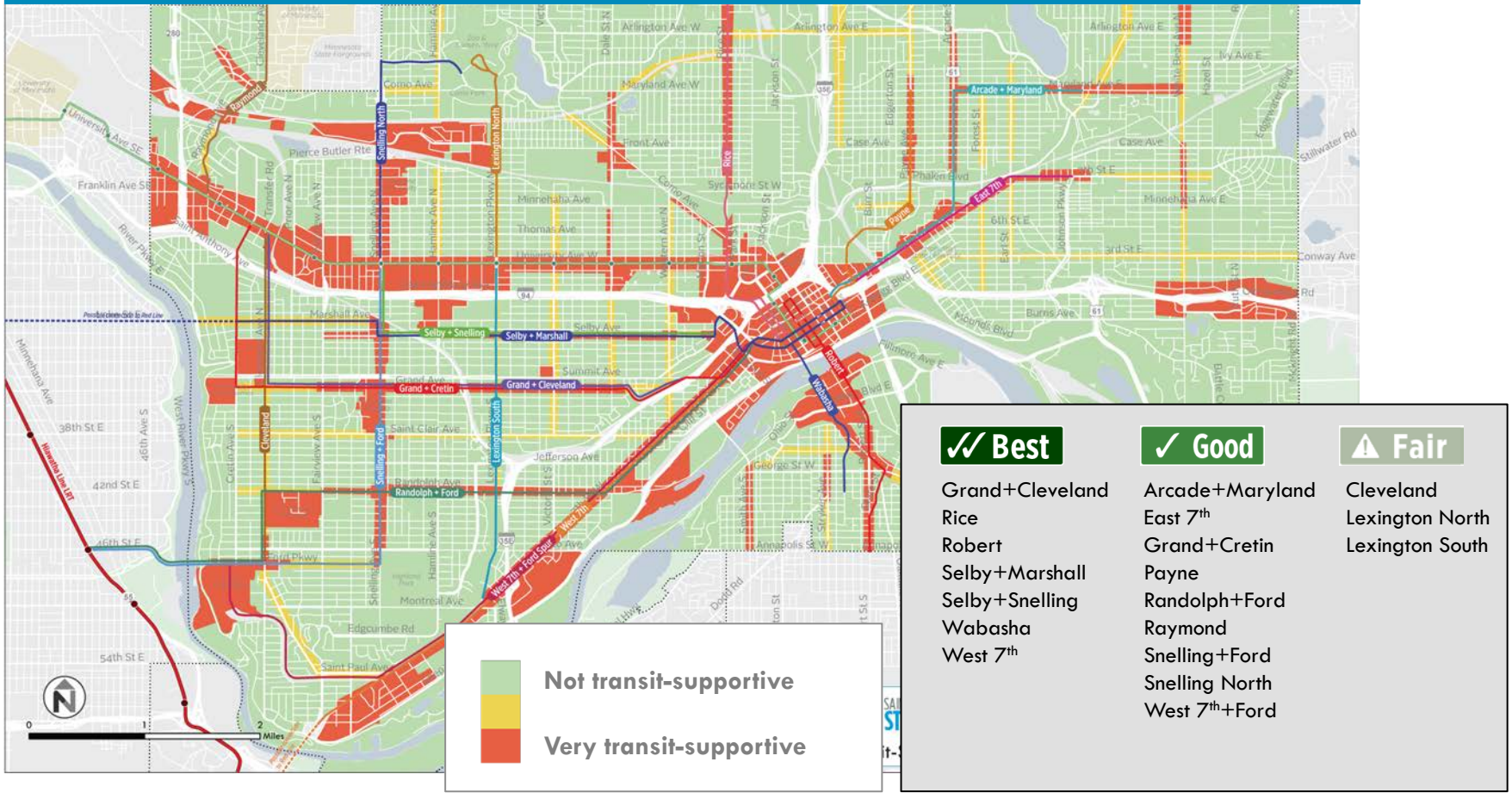
# Phase 2 Primary Evaluation

**POTENTIAL DEMAND** estimates the demand for transit based on the population and employment served by each line



# Phase 2 Primary Evaluation

**LAND USE** evaluates the land uses along each line for transit-supportiveness, since more transit-supportive uses generate higher demand for transit



# Phase 2 Primary Evaluation

**DEVELOPMENT POTENTIAL** estimates the potential of lines to stimulate development, based on underutilized land and development projects



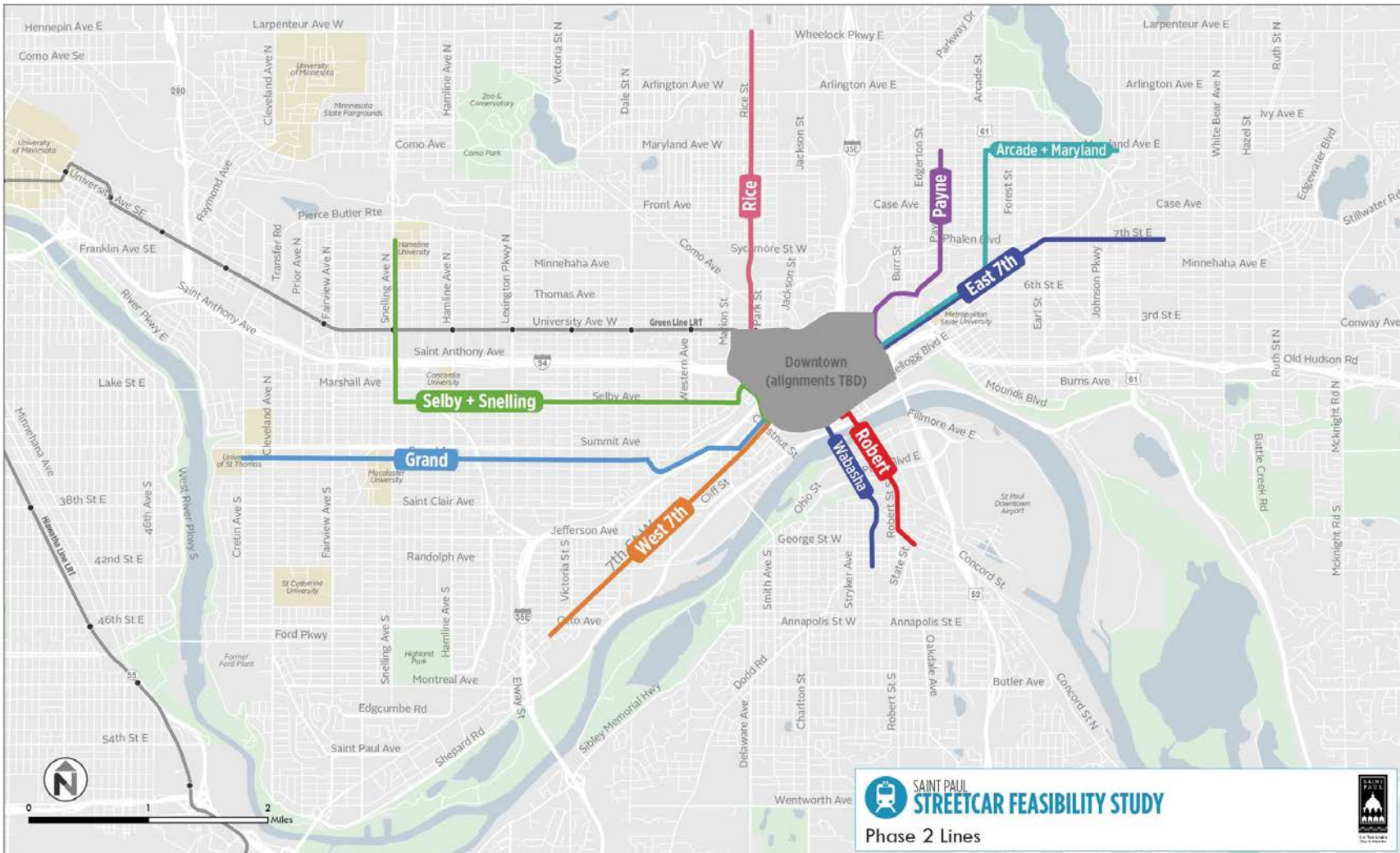
# Phase 2 Primary Evaluation

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- 12 lines rated well enough to be included in Long-Term Network
- However, most not all along their entire length, so shortened:
  - Arcade + Maryland: Maryland Ave – Downtown
  - East 7<sup>th</sup> Street: Hazelwood St – Downtown
  - Grand + Cleveland: University of St Thomas – Downtown
  - Grand + Cretin: University of St Thomas – Downtown
  - Payne: Maryland Ave – Downtown
  - Robert: George St – Downtown
  - Selby + Marshall: Snelling Ave – Downtown
  - Selby + Snelling: Hameline University – Downtown
  - Wabasha: George St – Downtown
  - West 7<sup>th</sup> Street: Victoria Park – Downtown
  - West 7<sup>th</sup> + Ford Spur: Victoria Park – Downtown
- Shortening resulted in three duplicate lines
- Eliminating duplicates reduced number of lines to nine

# Phase 2 After Primary Criteria

Nine shortened lines moved forward to supplemental evaluation



# Phase 2 Supplemental Criteria Evaluation

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## Supplemental criteria evaluation:

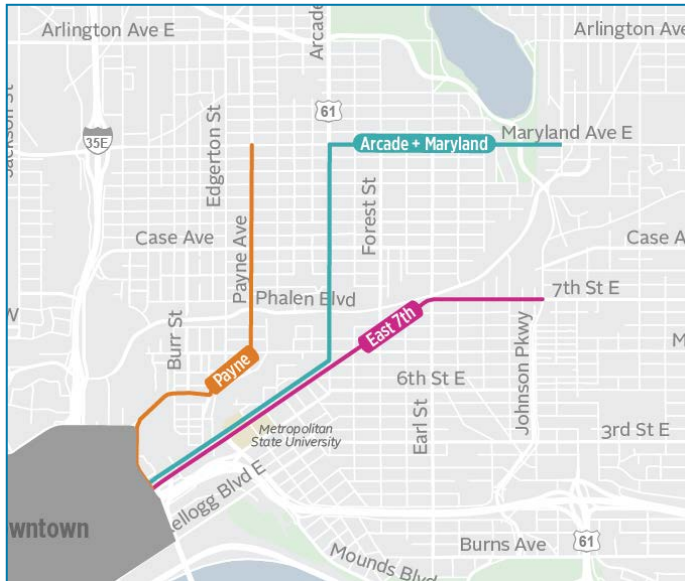
- No issues that would preclude a line from further consideration
- Used largely to choose between lines that would serve similar areas

### Supplemental Criteria

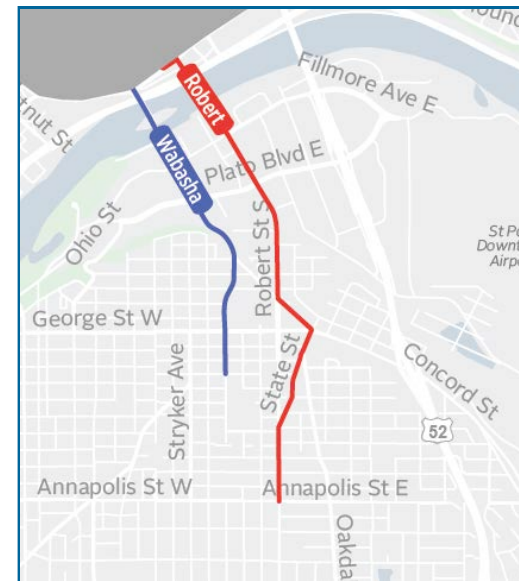
- Community support
- Transit speed and reliability
- Equity
- Pedestrian environment
- Service to major activity centers
- Operating costs
- Capital costs
- On-street parking impacts
- Integration with existing bus service
- Relationship to current/future HCT investments

# Final Adjustments for Duplication

Some lines would serve very similar areas—the best was chosen



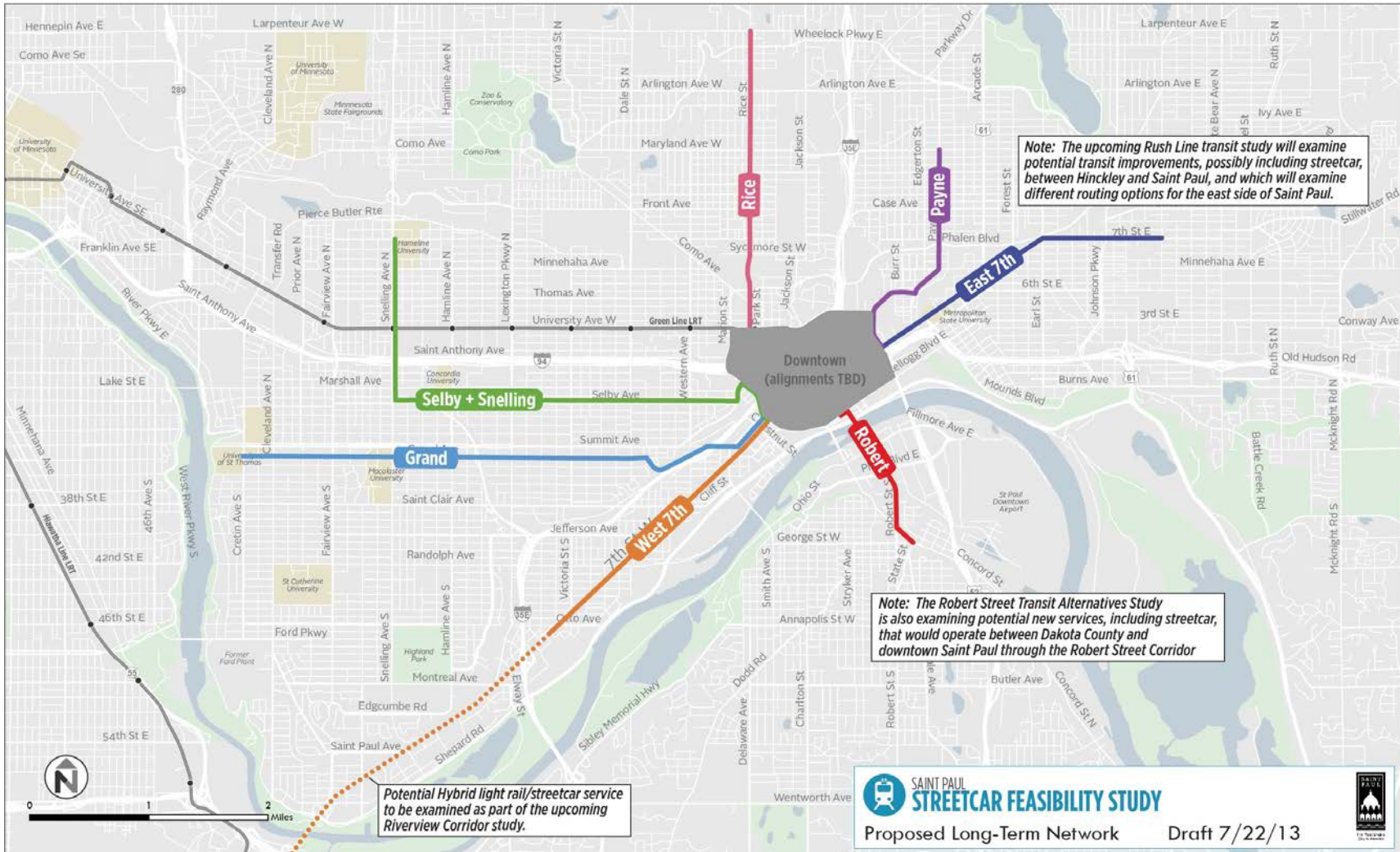
- ~~Arcade + Maryland~~
- Payne
- East 7th



- ~~Walsh~~
- Robert

# Proposed Long-Term Streetcar Network

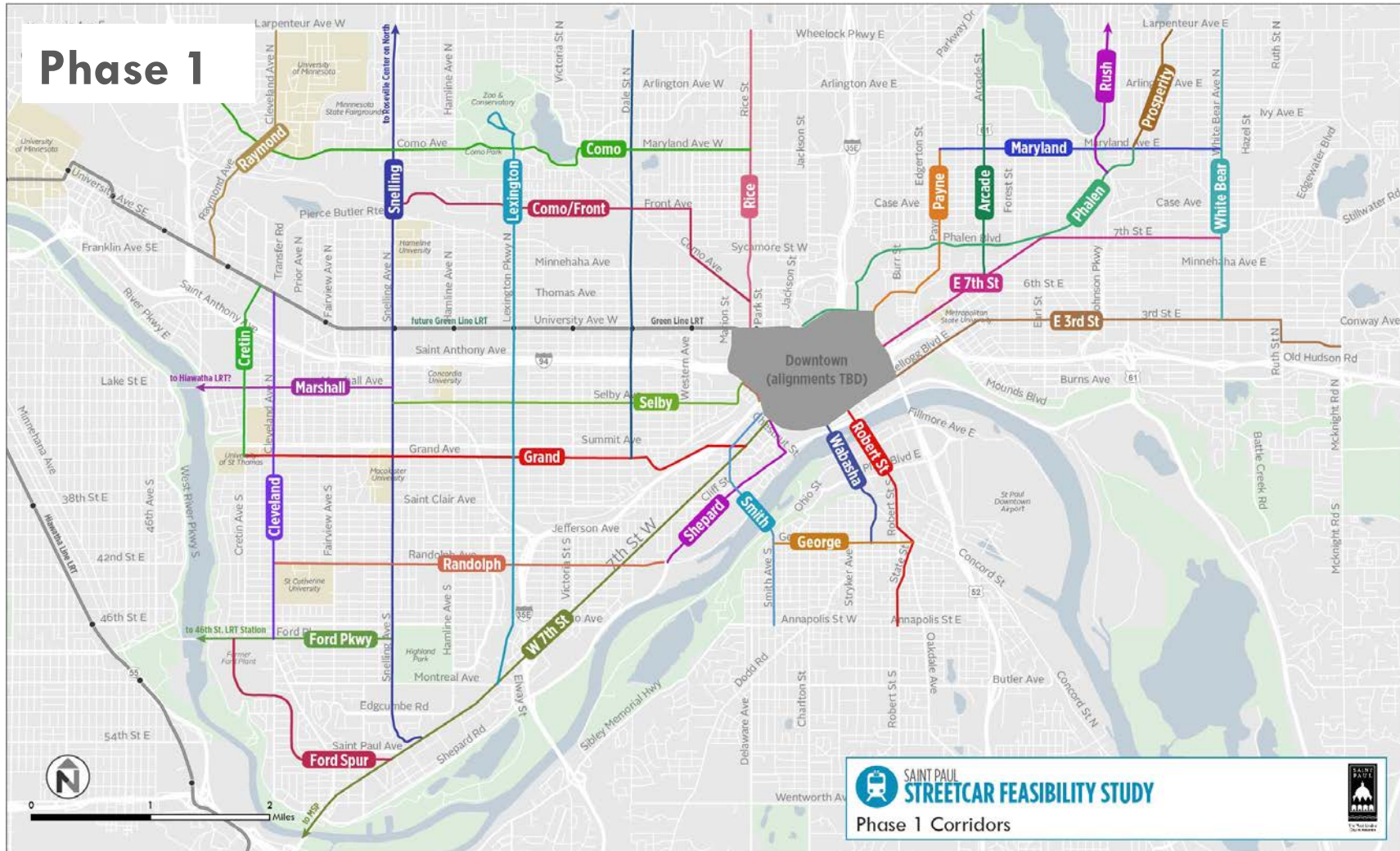
7 lines radiating from downtown to most neighborhoods





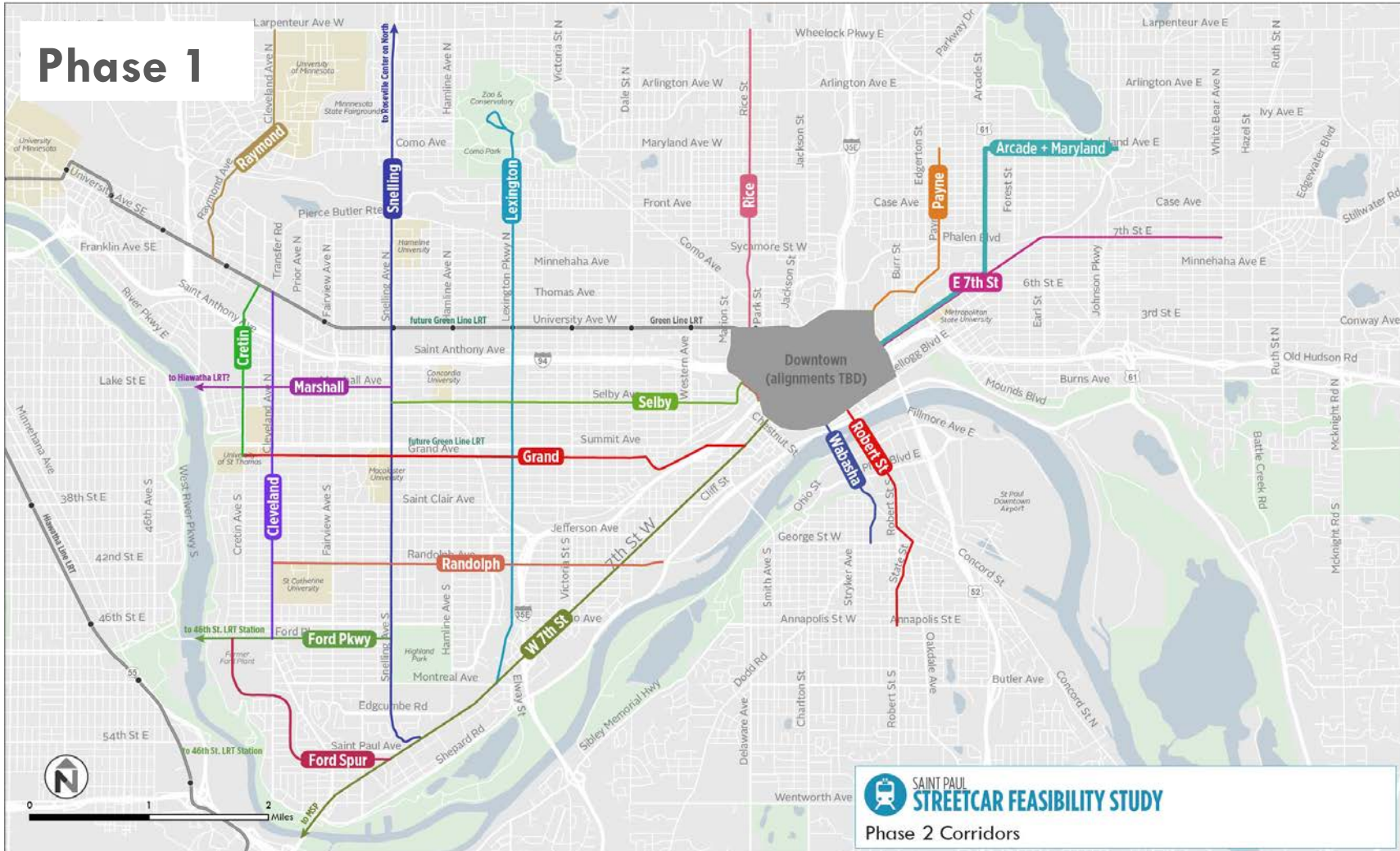
# Summary

Started with most of Saint Paul's major corridors



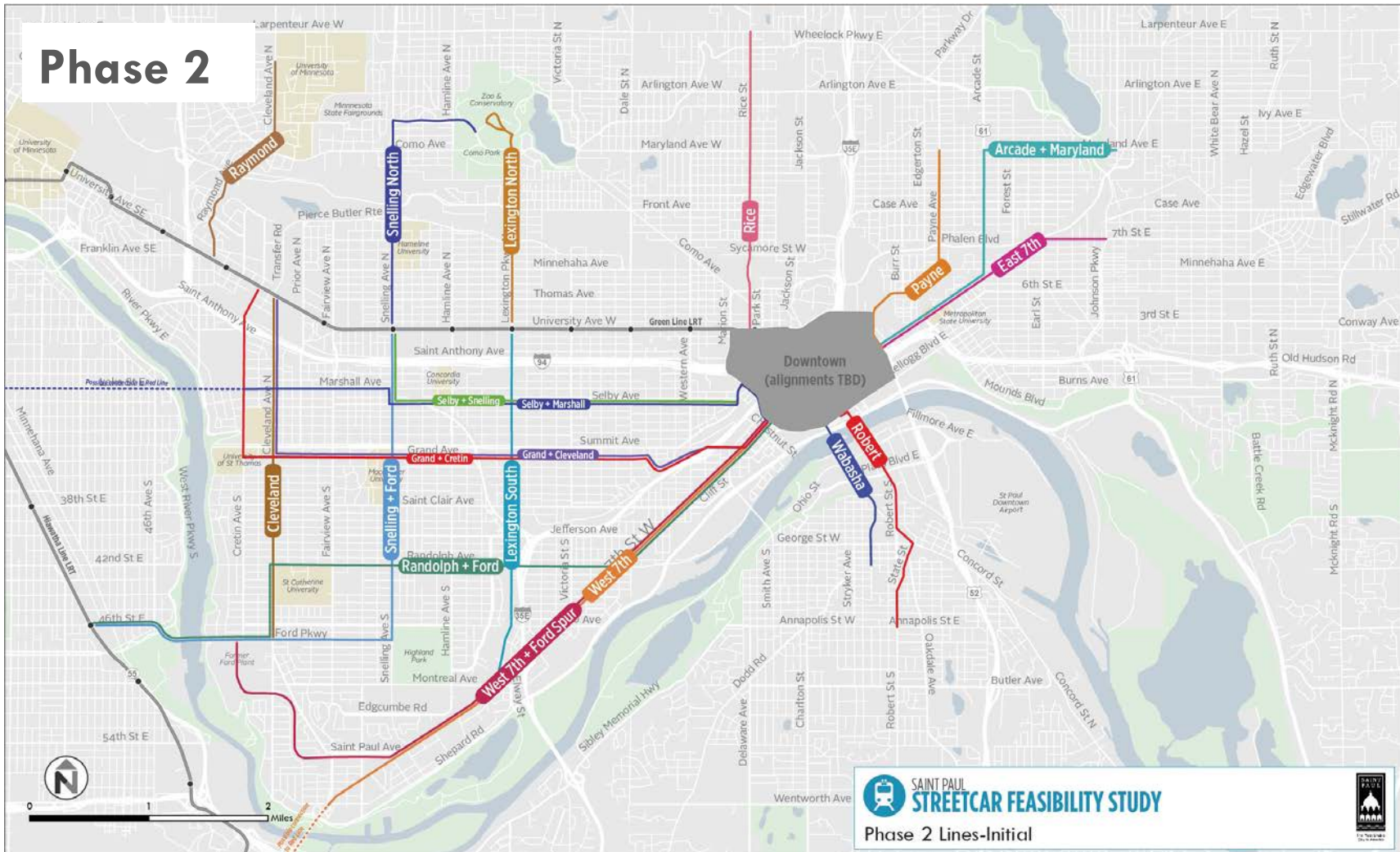
# Summary

Screened them down to 19



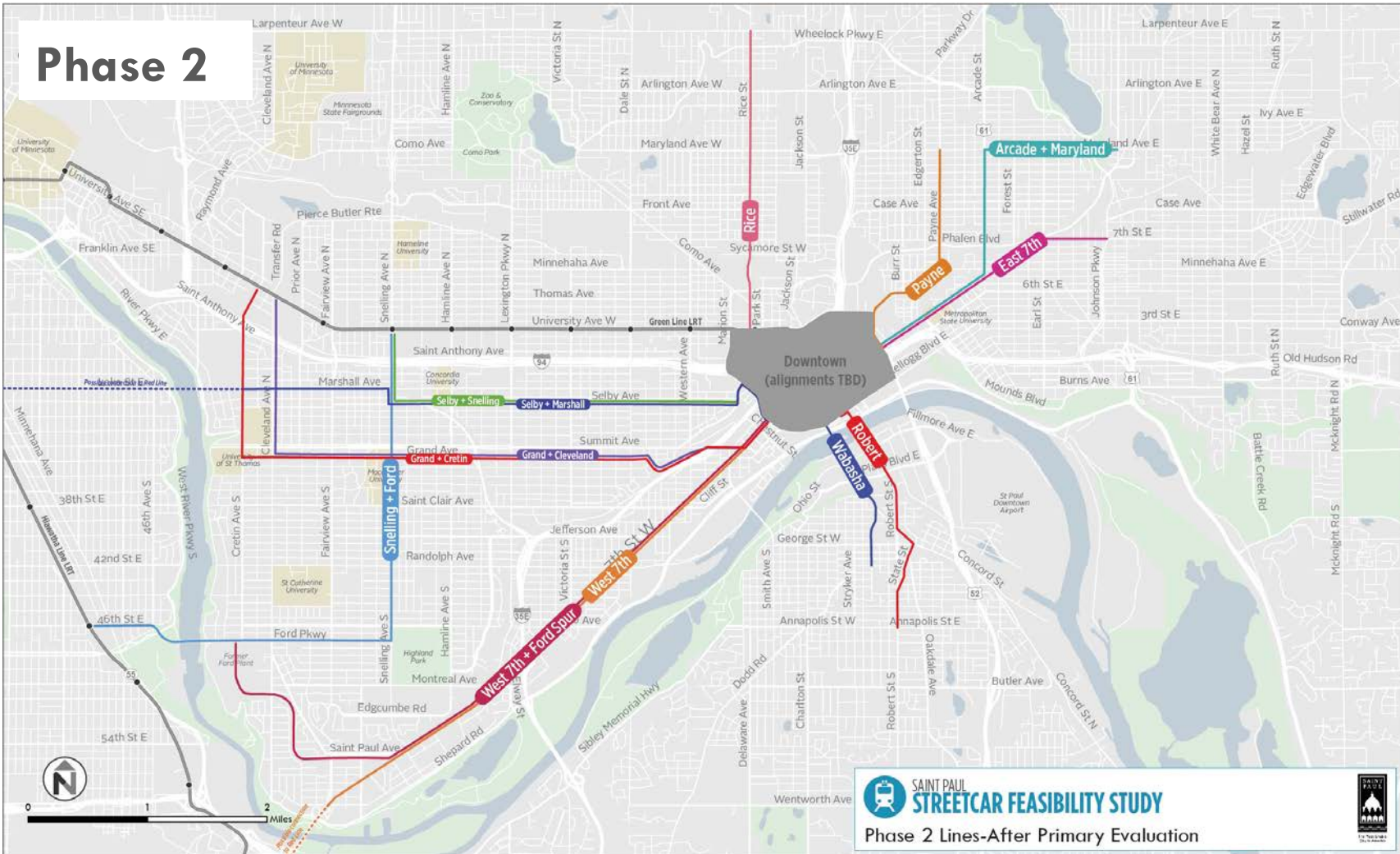
# Summary

## Developed streetcar lines to serve the Phase 2 corridors



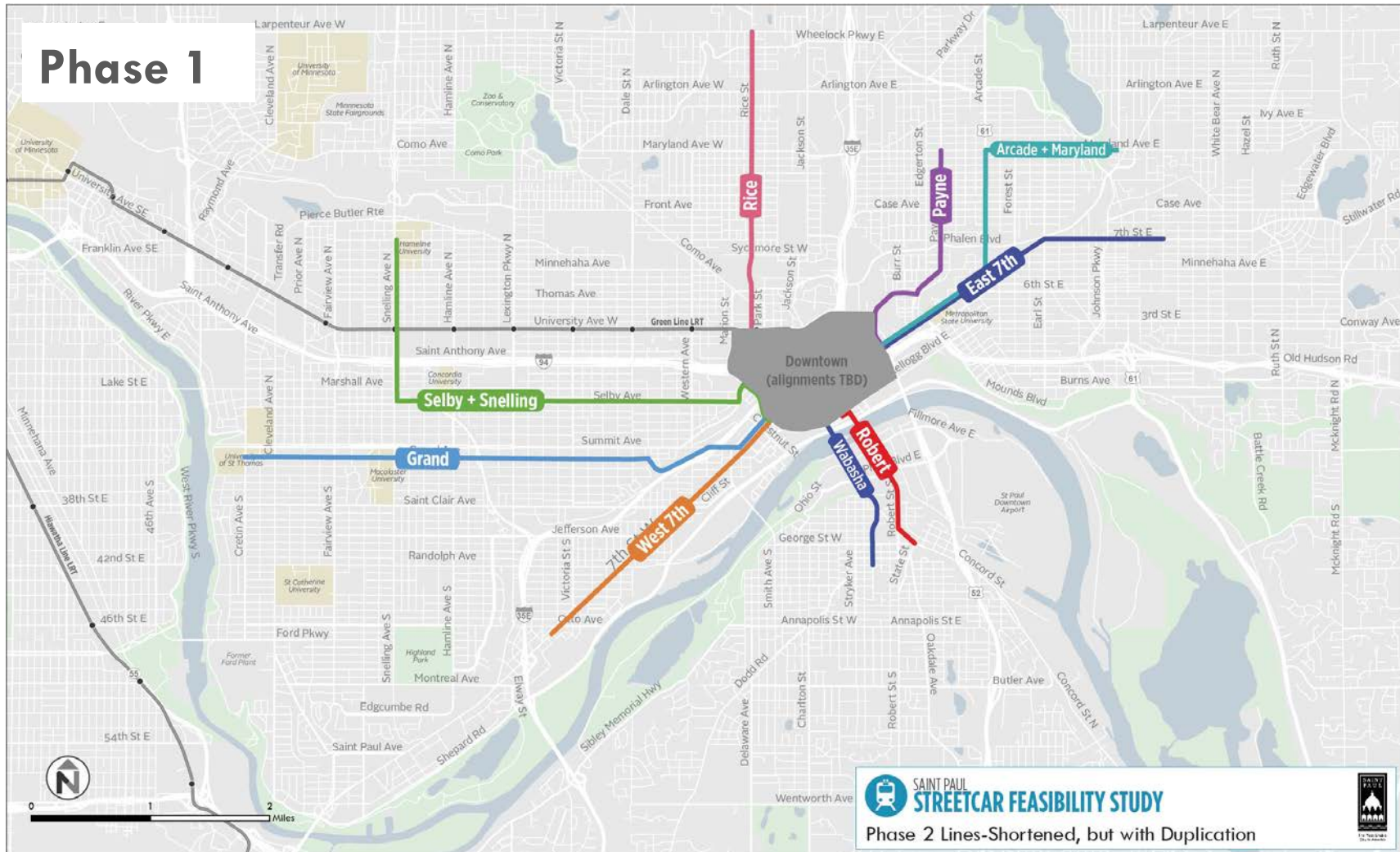
# Summary

Screened the 19 lines to 9



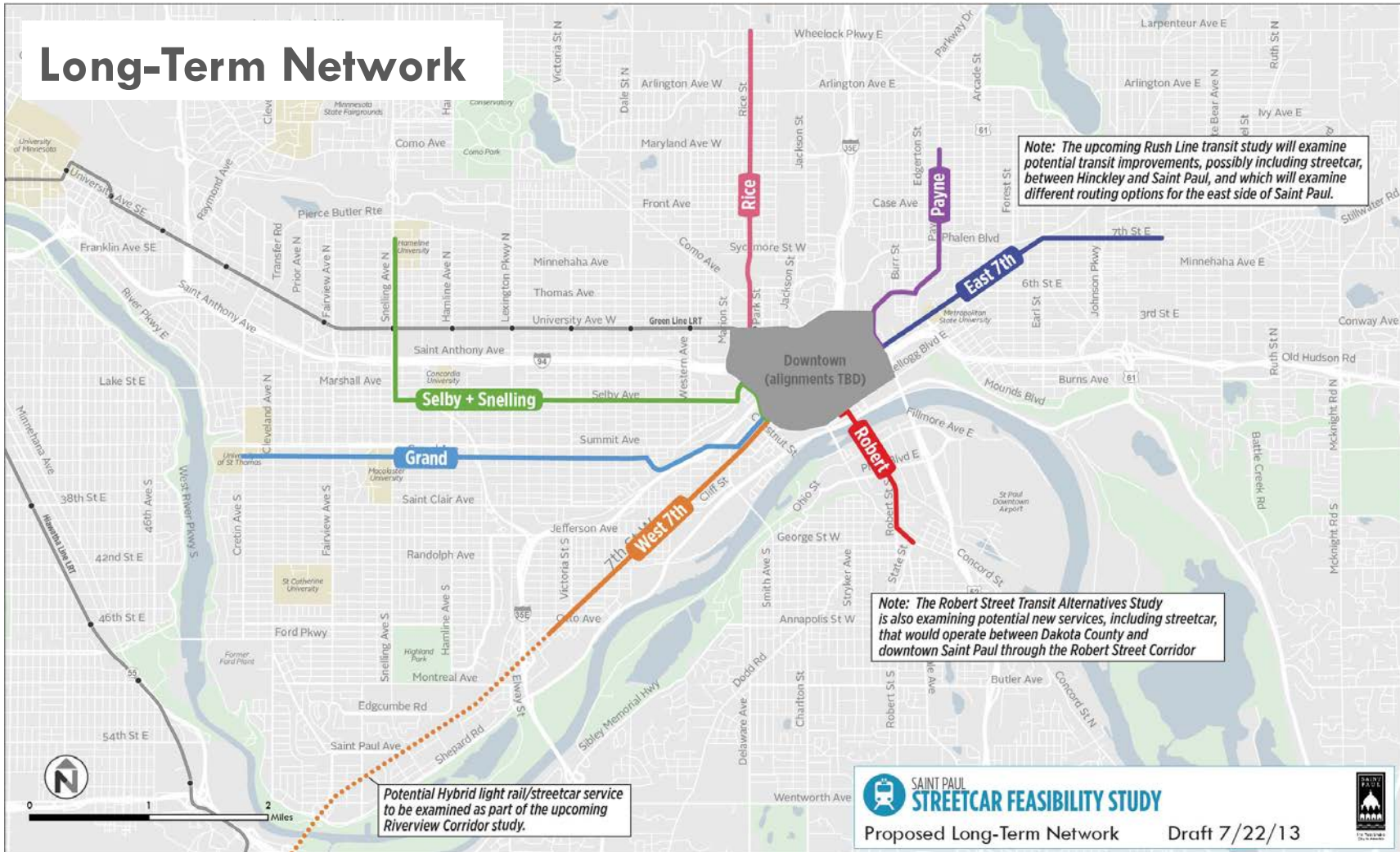
# Summary

Shortened them and consolidated duplicate lines



# Summary

## Eliminated final duplication to get to Long-Term Network



# Next Steps

- Determine which line(s) should be pursued first
- Final evaluation based on:
  - Ridership
  - Development potential
  - Transit integration
  - Operating costs
  - Capital costs

