Potential Managed Lane Alternatives
Typical Section Between Junctions

Existing Typical Section Looking North*

*NLSD between Grand and Montrose Avenues is depicted.

Managed Lanes

Managed Lanes (Options that convert one or more existing general purpose lanes to a managed lane to provide high mobility for buses and some autos)

Potential managed lane roadway designs:

- **Option A** – Three-plus-One Managed Lane (Bus-only or Bus & Auto)
- **Option B** – Two-plus-Two Managed Lanes
- **Option C** – Three-plus-Two Reversible Managed Lanes
- **Option D** – Four-plus-One Moveable Contraflow Lane (NB and SB, or SB Only)
Option A – 3+1 Bus-Only Managed Lane*

Proposed Typical Section Looking North Between Junctions**

*Converts one general purpose lane in each direction to a Bus-Only Managed Lane.
**NLSD between Grand and Montrose Avenues is depicted.

3+1 Bus-Only Managed Lane

• Benefits
  o Bus travel speeds would be unencumbered by vehicle speeds in adjacent travel lanes (same transit performance as Dedicated Transitway on Left Side)
  o Bus lanes would be available at all times and would not be affected by police or disabled vehicles
  o Bus lanes combined with exclusive bus-only queue-jump lanes at junctions would minimize bus travel times and maximize transit service reliability
  o Forward-compatible with future light rail transit option

• Challenges
  o Conversion of general purpose traffic lane to bus-only operation will divert some traffic onto remaining NLSD lanes and/or adjacent street network
Option A – 3+1 Managed Lane*

Proposed Typical Section Looking North
Between Junctions**

*Converts one general purpose lane in each direction to a Shared Bus/Auto Managed Lane.
**NLSD between Grand and Montrose Avenues is depicted.

3+1 Managed Lane

• Benefits
  o Same transit travel time and reliability benefits as Dedicated Transitway on Left Side
  o Excess managed lane capacity is shared with some autos
  o Exclusive bus-only queue-jump lanes at junctions would minimize bus travel times and maximize transit service reliability
  o Forward-compatible with future light rail transit option

• Challenges
  o Conversion of general purpose traffic lane to managed lane will divert some traffic onto remaining NLSD lanes and/or adjacent street network
Option B – 2+2 Managed Lanes*

Proposed Typical Section Looking North Between Junctions**

*Converts two general purpose lanes in each direction to Shared Bus/Auto Managed Lanes.
**NLSD between Grand and Montrose Avenues is depicted.

2+2 Managed Lane

• Benefits
  o Similar transit travel time and reliability benefits as Dedicated Transitway on Left Side
  o Excess managed lane capacity is shared with some autos
  o Exclusive bus-only queue-jump lanes at junctions would minimize bus travel times and maximize transit service reliability
  o Forward-compatible with future light rail transit option

• Challenges
  o Conversion of two general purpose traffic lanes to managed lanes will divert larger amounts of traffic onto remaining NLSD lanes and/or adjacent street network
Option C – 3+2 Reversible Managed Lanes*

Proposed Typical Section Looking North Between Junctions**

*Replaces one general purpose lane in each direction with two Reversible Managed Lanes.
**NLSD between Grand and Montrose Avenues is depicted.

3+2 Reversible Managed Lanes

• Benefits
  o Similar transit travel time and reliability benefits as Dedicated Transitway on Left Side
  o Adds 5th travel lane in the peak traffic flow direction which will reduce congestion and improve mobility for all vehicles
  o No diversion of peak traffic to other lanes or adjacent streets

• Challenges
  o Large footprint required at junctions to accommodate both general purpose and reversible lanes as well as exit/entrance ramps
Option D – 4+1 Contraflow Managed Lane*

**Proposed Typical Section Looking North Between Junctions**

*Provides Contraflow Bus-only Lane in off-peak directions via moveable concrete barriers.

**Moveable Barriers**

Contraflow Bus-only Lane
A.M. Peak Period Shown

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**4+1 Contraflow Managed Lane**

- **Benefits**
  - Same transit travel time and reliability benefits as Dedicated Transitway on Left Side
  - Bus-only managed lane is provided in non-peak traffic flow direction, therefore no reduction of peak general purpose traffic lanes
  - No diversion of peak traffic to other lanes or adjacent streets
  - Minimizes transportation footprint

- **Challenges**
  - Not compatible with future light rail transit option
  - Requires use of two “Zipper-wall” Barrier Transfer Machines to deploy and retract barriers
"Zipper-wall" Barrier Transfer Machine

**Barrier Transfer Machine**

- 55-foot length similar to large semi-truck trailer
- Two Barrier Transfer Machines required with garage storage