

# POSSIBLE FUTURE UPDATES TO THE TPB TRAVEL DEMAND FORECASTING MODEL

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March 15, 2019



# Updates Incorporated in Ver. 2.3.75

- 2018**
- 1 Removed the HOV Highway Skim Replacement procedure
  - 2 Reported active transit stations with zero skim values
  - 3 Updated unbuild\_net.s to work with the latest version the travel model
  - 4 Removed Metrorail constraint procedure



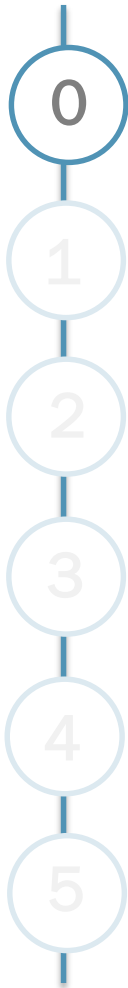
# Possible Updates to Ver. 2.3.75

2019

- 0 Test Ver. 2.3.75 with Windows 10
- 1 Update the model to work with newer Cube versions (6.4.4, 6.4.5 beta)
- 2 Fix the issue of potential incorrect use <ITER>\_HWY.net when doing a partial re-run
- 3 Incorporate external trip distribution revision
- 4 Revise naming convention for sub-nodes of IDP and MDP in the highway assignment process
- 5 Report stations without PNR lots that are coded incorrectly



# Testing the Model with Windows 10



  
Windows Server<sup>®</sup> 2008



  
Windows Server 2012



  
Windows 10



# The Ver. 2.3 Model Running on Newer Cube Versions

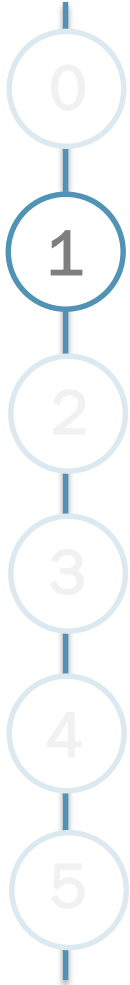
- 0
- 1
- 2
- 3
- 4
- 5

Cube Version	ArcGIS Engine	Compatibility	Tester
Cube 6.4.1	10.3	😊	Staff
Cube 6.4.2	10.4	😐	Staff
Cube 6.4.3	10.5	😊	Citilabs
Cube 6.4.4	10.6	😞	Staff, Citilabs
Cube 6.4.5 beta	10.6	😊	Staff, Citilabs

ArcGIS Engine ≠ ArcGIS



# Model's Performance with Cube 6.4.5 Beta



**5%**

**model runtime reduction**

when switching to Cube 6.4.5 from Cube 6.4.1

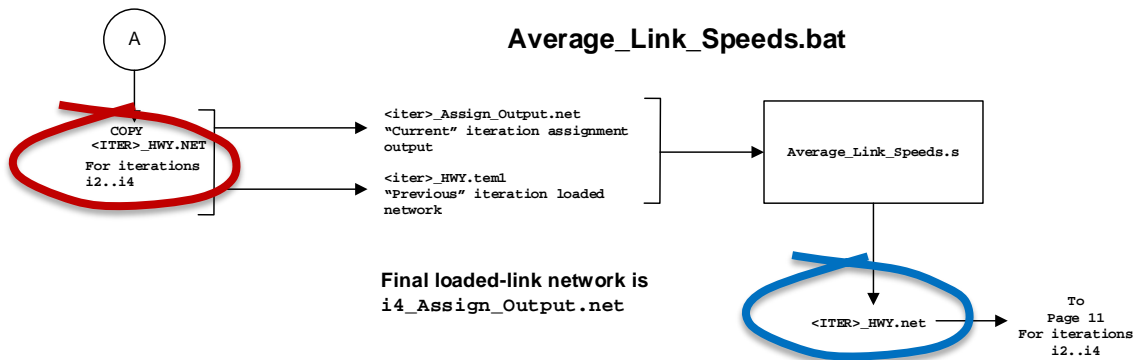
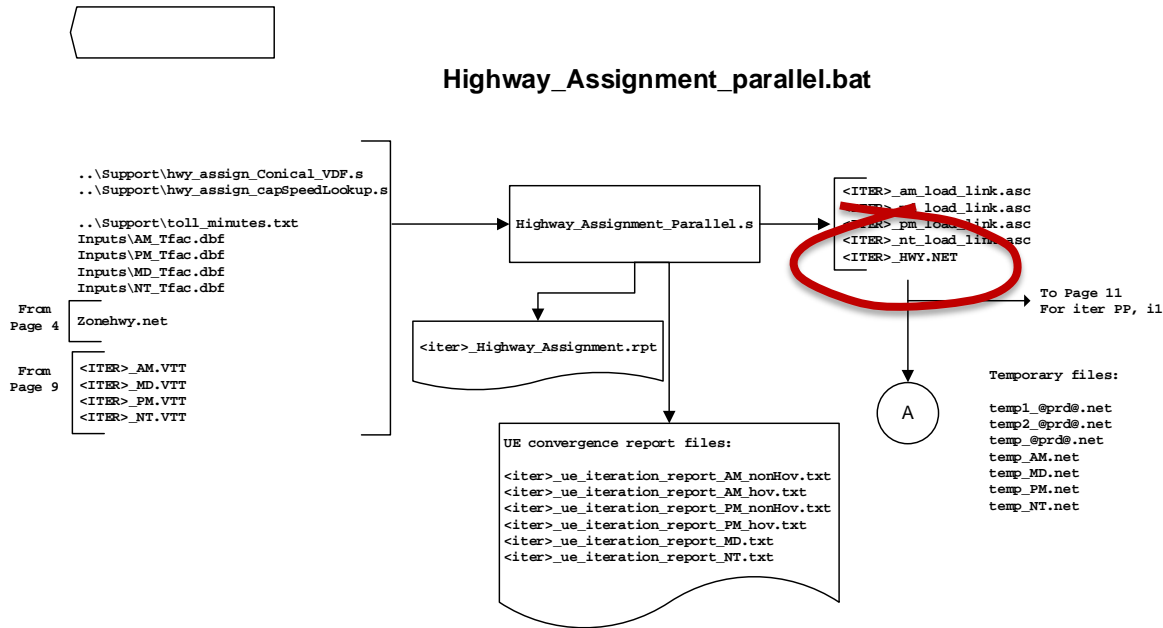
**0%**

**model output change**

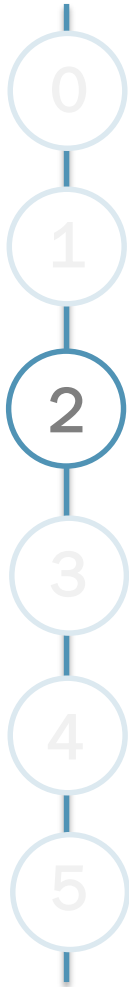
when switching to Cube 6.4.5 from Cube 6.4.1



# The Possible Incorrect Use of <ITER>\_HWY.net



# The Possible Incorrect Use of <ITER>\_HWY.net

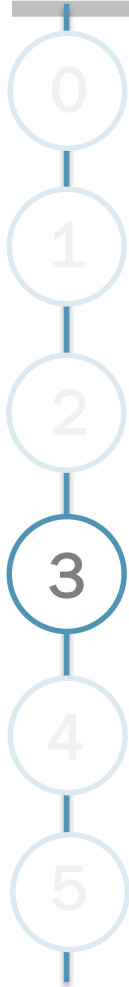


- This issue rarely happens
- Expected Result: No effects on the model outputs
- Status: Testing





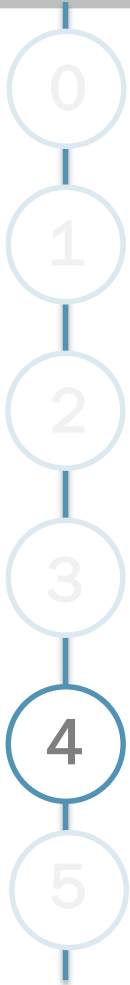
# The Refinements to External Trip Distribution



- Issue: External traffic is over-estimated
- Expected Result: Will alter the model results
- Status:
  - Staff has revisited external trip distribution
  - This update will be made to Ver. 2.3.75 for testing



# Incorrect Sub-Nodes Naming Convention of IDP and MDP in the Highway Assignment



- Issue:
  - Some **misleading naming conventions** are used in Highway Assignment script (See Section 8.2.4.3 *Parallel processing in the highway assignment script* – User’s guide of Version 2.3.75). For example:

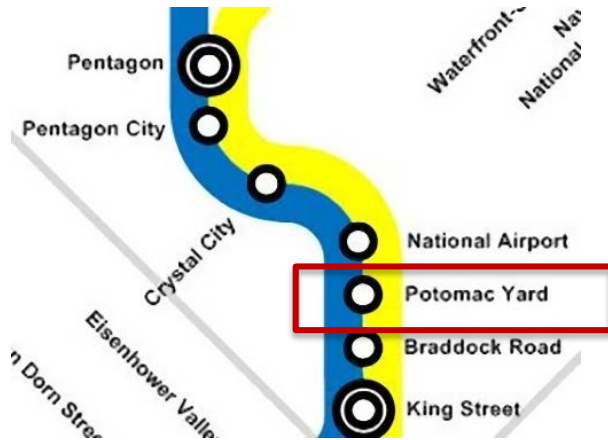
MD2, MD3, and MD4 should be PM2, PM3, and PM4
- Expected Result: No effects on the model outputs
- Status: On-going



# Station without parking lot coded incorrectly

- 0
- 1
- 2
- 3
- 4
- 5

- Issue:



Station.dbf

STAPARK	STAPCAP
Y	0

Extra attractive to auto access connections

- Expected Result: No effects on the model outputs
- Status: Will potentially be addressed by network QA/QC



# Experimental Version Control System to Manage the Model Development Work

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# Conclusion

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**1**

## **Model Testing**

No result change

**4**

## **Possible Updates/Fixes**

No result change

**1**

## **Possible Update**

that changes the model results



# Acknowledgements

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- Sanghyeon Ko, Feng Xie, Mark Moran, Dusan Vuksan (COG/TPB staff)



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