



**Portland Case Study
Track and Civil Design**

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Design Approach

- Designed for in-street operations
- Retrofit; not reconstruct
- Minimize loss of parking
- Minimize impacts during construction
- Avoid utilities
- Keep it simple/inexpensive

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Designed for In-Street Operations



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Designed for In-Street Operations



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Retrofit; Not Reconstruct



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Retrofit; Not Reconstruct



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Maintain Parking



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Minimize Impacts:
(Minimize Construction Footprint)



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Minimize Impacts:
(Shallower Track Construction)



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Minimize Impacts:
(Maintain Traffic and Access)



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Minimize Impacts:
(Expedited Construction Process)



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Minimize Impacts:
(Expedited Construction Process)



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Minimize Impacts:
(Minimize Construction Footprint)



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Minimize Impacts: (Minimize Construction Footprint)



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Avoid Utilities



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Streetcar Stops



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Streetcar Stops

Simple Design Approach



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Streetcar Stops

Simple Design Approach



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Streetcar Stops

Level Boarding



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Streetcar Stops

Some Share with Buses



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Questions?

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