Denver sits along rail lines important for the transport of petroleum products, ethanol for fuel blending, and other hazardous material. Three active heavy rail lines exist along active rail lines:

- There are 1,465 household units within 150’ of rail, 22,163 within 1,000’;
- There are 4 public assembly locations within a mile radius. This includes Mile High Stadium, Pepsi Center, Elitch Gardens, etc.;
- Major redevelopments are planned near active rail lines including Fox Park, Sun Valley, Broncos Stadium, River Mile, Broadway Market, Gates, Burnham Yards and the National Western Complex.
Hazardous to Citizens

Mirroring national trends, Denver has seen a dramatic increase in rail shipments of flammable liquids, principally crude oil, related liquids, and ethanol. Denver’s Office of Emergency Management and Homeland Security has reported:

• Up to over 80,000 hazmat rail car shipments per year through Denver.
• Up to over 200 hazmat rail car shipments on average per day through Denver.
• Flammable liquids account for over half of hazmat shipments through Denver by rail.
DOT projects 278 mainline derailments of crude oil or ethanol-carrying trains (not including derailments of other hazmat, other derailments or other rail hazmat incidents), including:

- 93 (33%) in densely populated areas;
- 85 (30.4%) with at least 1 carload of released flammable liquid igniting and causing fire;
- 12 (13%) with at least 230,000 gallons of released flammable liquid (7-8 tank carloads) and large fires;
- 2 derailments projected to be high consequence events (range estimate 1-5).

Responsibility to Protect

1. FEMA Comprehensive Preparedness Guide, November 2010, 1st Sentence of 1st Chapter:

“The elected and appointed leaders in each jurisdiction are responsible for ensuring that necessary and appropriate actions are taken to protect people and property from any threat or hazard”.

2. The 2019 Colorado Local Emergency Planning Committee Annual Conference was hosted by Colorado Division of Homeland Security and Emergency Response. An attorney who counsels Colorado’s Emergency Planning Committee advised attendees that, in a post-Hurricane Katrina environment, elected officials are legally responsible to ensure actions are taken to protect people and property and he directed attendees to review the above-referenced FEMA Guide.
Models for Regulating Development Near Rail to Mitigate Risks

1 Federation of Canadian Municipalities/Railway Association of Canada “Guidelines for New Development in Proximity to Railway Operations” (FCM/RAC). Developed through comprehensive project involving municipalities, railroads and consultant experts.

2 Calgary Baseline Risk Assessment, “Development next to Freight Rail Corridors Policy & Implementation Guide.” It was developed in collaboration with stakeholders including rail companies, developers and community associations and with public information sessions.

Emergency Risk Management: Mitigate – Prepare – Respond - Recover
Standard Mitigation for New Residential Development Proximate to Main Line Railway

- 30 meter setback for main lines from rail property line to residential building (a distance longer than most rail freight cars);
- 1.83 meter chain link security fence at rail property line (trespass mitigation);
- 2.5 meter earthen berm between rail line and building;
- 3-meter high acoustical fence atop earthen berm;
- Suggested by Railway Association of Canada members.

Alternate Residential Setbacks for Different Types of Rail Lines

- Freight Rail Yard: 300 meters;

 Adopted By:

- Local governments across Canada and within the Montreal region by the Montreal Agglomeration Council;
- Recommended as standard mitigation for City of Toronto – also provides for alternative measures.
City of Calgary – Based on Risk Management Principles and Guidelines

Risk Analysis Based on Key Information (similar to US DOT rail analysis)
- Rail type, length and locations, type of rail crossing, track geometry and elevation;
- Railway train speeds and location of crossings, switches and other infra;
- Daily train traffic data past 5 years (minimum) for analysis of average and upper percentile traffic volume;
- Type and apportionment of freight by Hazmat Class (with non-disclosure considerations);
- Rail accident statistics for study area from Transportation Safety Board of Canada;
- Trespassing reports last 10 years;
- Zoning, topography and geology;
- Risk factors: Derailment fatalities, train speed, derailment size, elevation differences;
- Major Industrial Accidents Council of Canada (MIACC) Risk Criteria for Public Fatality (≤1 or ≤0.3 x 10^-6 chance).

Regulates New Maximum Building & Sensitive Use Widths facing Rail
- Proximity (Inside the Rail Proximity Envelope 30m X 7m for Safety & 30m X 64m for Noise);
- Type of use (High Density Residential, Commercial and Campus/Sensitive Uses);
- Regulates building and use widths in each railway segment so as to meet MIACC risk criteria;
- Alternate compliance route – Site Specific Risk Assessment/3rd Party Review.

Development Next to Freight Rail Corridors Policy – 3 components
- Policy – adopted by City Council
- Implementation Guide
- Interactive Map
Next Steps

- Provide CPD (& other city agencies) Authority to Regulate Developments Close to Rail. Review draft ordinance with internal agencies

- Establish interim regulations
  - Interim setback from rail property line (define from which uses)
  - 1.8 meter chain link security fence, with consideration of emergency access needs

- Launch 12- Month Process to Review Canadian and any US mitigation models and Develop Policy & Procedures
Next Steps

✓ HNTB selected to do safety analysis of rail corridors
  • Internal & external stakeholder input on findings
  • Recommend mitigation measures for Rules and Regulations by city agencies

✓ Ordinance adoption – move concurrently with safety analysis

✓ Adoption of Rules and Regulations