

The Development Approval Process in BC

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Overview

- Background
- Process
- Technical Issues
- Discussion
- Examples... if time available...



MoT Jurisdiction

- Rural
 - Outside Municipalities MoT has jurisdiction over Access, but not Land Use (Regional Districts, aka “Counties”), for all roads
- Within Municipalities
 - All Roads except Provincial Highways are under Municipal Jurisdiction as the Road Authority
 - Provincial Highways are under MoT Jurisdiction within Municipalities
 - MoT has Input if within 800m (1/2 mile) of a “Controlled Access” Highway
 - Municipality Responsible for Land Use (Zoning)



Getting Approval for a Development on a Provincial Highway in BC

- Rezoning and Subdivision
 - Application to Municipality or Regional District
 - Referred to MoT
- Building Permit
 - Application to Municipality or Regional District
 - Referred to MoT
- Access
 - Permit Lapses on Change of Use or Ownership (not rigorously enforced)
 - Apply to District Office for “Access Permit” – all roads under MoT jurisdiction



What is Important

- BC Site Impact Analysis Manual
 - Describes Process and Technical Requirements
- Uniform Approach by all Offices
- Compatibility with Municipal Processes
- Technically Justifiable
- Economically Feasible
- Permits Development
- Preserves the Road System



Manual Update

- Originally produced in 1997 – 2 volumes
- Technically dated (out of date HCM material etc.)
- Focus on “Impact” analysis
- Focus on MoT requirements only
- Refocused on “Road Authorities” – MoT and Municipal
- Refocused on “Integrated Transportation Design”
 - from “Day 1” of projects
 - Get it right first time



Technical Update

- New Issues
 - Design Domain
 - Ambient Standards
 - TAC not MoT's own Manual
 - ITE not MoT's data for parking and trip generation
- Roundabouts
- Transportation Demand Management (TDM)
- Bikes Pedestrians and Transit
- Synchro requirements
- Sensitivity Analysis
- New Land Uses - procedure



Technical Update Additions

- “Municipal” Issues
 - “Highest and Best Use” – Sensitivity Analysis
 - Expanded Ped/Bike/Transit/TDM – planned
 - How much detail is needed in the ToR/Review Form
 - Brochure for Distribution



Chapters....

1. Introduction
2. Things you must Do (New)
3. Policy Statements (New)
4. Parking and Trip Generation Rates
(Parking and Trip Gen Manual included)
5. Traffic Analysis (2 sections combined)
6. Important Design Issues - Off-site
7. Important Design Issues - On-Site

Appendices



Things you must Do

- Qualified Persons
- Determine Jurisdiction
- Determine Process (Full or Simplified)
- Define Terms of Reference
- Comply with “Good Practice” and Standards
- Comprehensive Reporting of Assumptions, Process, Options and Recommendations



What's Reviewed

- Traffic Impact
- Road Design
- Access
- On Site Design
- Other issues



The Process

- Submission
- What's Reviewed



When?

- The Earlier the Better!
- Early Contact – Before Site Plan Developed
- Maximise Access Potential
- Minimise Access Restrictions
- Best Access = Best Value for Developer
- Find Out What is Required Before You Start....



What's Reviewed

- Big Projects vs Little Projects
- Study ToR - Key Issues
- Small Projects
- Larger Projects



Study ToR - Key Issues

- Study Area
 - All Accesses and Intersections impacted by development
- Site Specific Issues
 - Safety
 - Known Problem Intersections/Accesses
 - “Committed” Upgrading Projects
- Methodology: Analysis and Traffic Projections
 - Approval of Non-Standard Methods, Assumptions or Criteria



Study ToR - Key Issues

- Background
 - Data Sources
 - Previous Studies, including Other Developments
 - Regional Plans, Official Comm. Plan/
Off. Settlement Plan etc.
 - Corridor and Access Management Plans
- Access Options
 - Reasonable Range of Feasible Options
 - including “No Direct Access”



Small Projects

- Simplified Process – Checklist
- Trip Generation < 100 vph, no major issues, not on Major Facility
- Development Details
 - Land Use
 - Parking
 - Site Plan – Fully Detailed
 - Access Plan – Fully Detailed
 - Highway Plan
- Detailed Operational Analysis – Generally not Required
- Design Elements - Generally “Simple”



Larger Projects

- Trip Generation > 100 vph, and/or major issues, or on Major Facility
- Full ToR
 - Scope Development
 - Level of Detail
 - Acceptable Methodologies
 - “Formal” Review
- Full Traffic Analysis
- Full Design
- Staging



Technical Issues

Operations and Design

- Safety
- Capacity
- Intersections and Access
- On-Site



Safety

- Is proposed location “Safe”?
 - Resolution of Safety Issues
 - “Safety Conscious Design”
 - Sight Distance
 - “Logical” Traffic Patterns
 - Minimize Conflicts
 - Can’t Expect Developer to Fix Existing Problems
- ... but can Decline Access if Unsafe



Safety

- Is Proposed Location “Safe”?
 - Sight Distance – Decision Sight Distance is Generally Required
 - Turning Sight Distance Requirements
 - Minimise Number of Conflict Points
 - Adequate Intersection Spacing
 - Minimize “Weaving”
 - Turn Storage Lengths – Critical on Higher Speed Facilities



Capacity

- Trip Generation
 - ITE Rates
- Design Years
 - Opening Day, Phased Developments, Model Horizon and/or 20 Years
- Capacity Analysis
 - Synchro for Signals
 - Signal Progression
 - HCM only for Freeways, Rural Roads or Isolated Unsignalised Intersections
- Mitigation
 - Maintain Minimum LoS



Intersections and Access Point

- Access Capacity
 - Mitigation
- Impact on Roadway Capacity
 - Mitigation
- Access Management
 - Few Approved Access Management Projects
 - Consider “Site” in Relation to AM Concepts
 - Flexibility to Develop AM Around Site Access



On-site

- Does it Impact the Highway?
 - Magazine Storage
 - First Intersection
 - Circulation
 - Adequate Parking Provision
 - ITE Rates
- If “Yes” – it’s an issue
- If “No” – it’s only an issue for business owners/customers
- Issues....



Summary

- Defined Process
 - Do it Early – and Get it Right, First Time
- Identify Key Issues
 - “Does it Impact Highway Operations”
- Thorough and Consistent Analysis
 - Compatible with Municipal Processes
- Develop Acceptable Mitigation
- Approve Safe Access with Minimum Traffic Impact



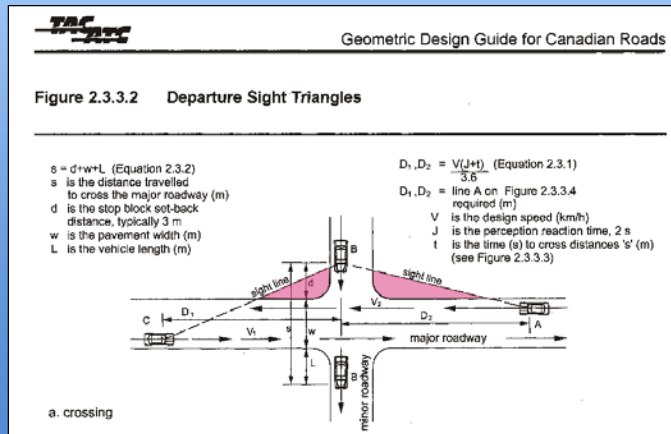
Details.....

Some examples of what's important, good or ugly...



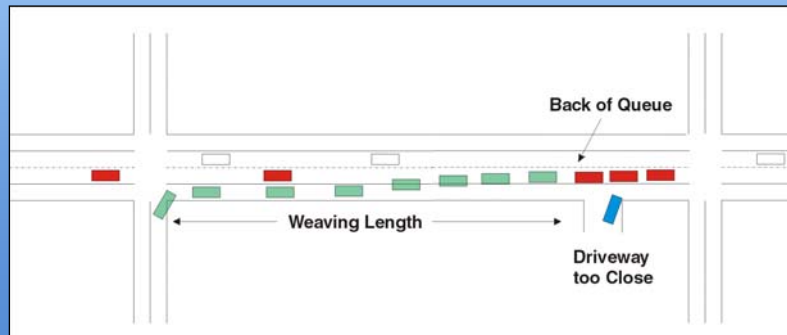
Safety

- Is Proposed Location “Safe”?
- Turning Sight Distance Requirements



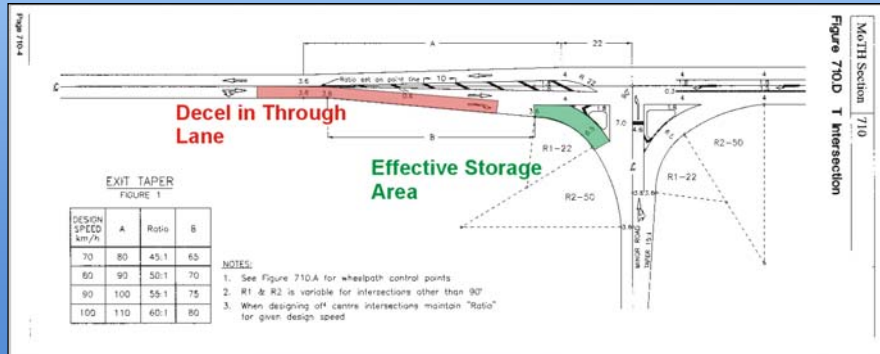
Safety

- Is Proposed Location “Safe”?
- Minimize “Weaving”



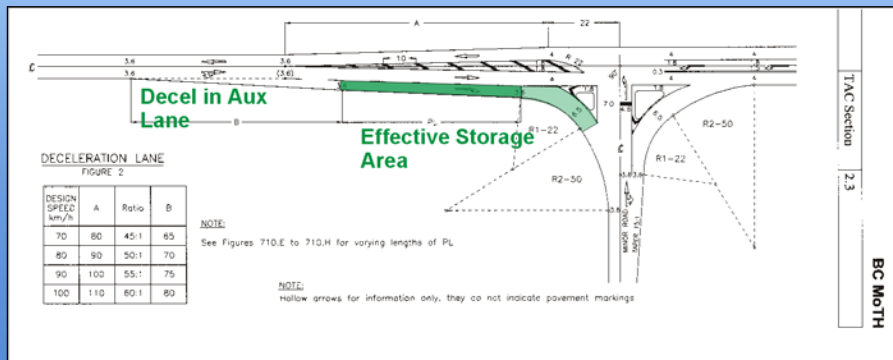
Safety

- Is Proposed Location “Safe”?
- Turn Storage Lengths – Critical on Higher Speed Facilities
 - Poor Layout



Safety

- Is Proposed Location “Safe”?
- Turn Storage Lengths – Critical on Higher Speed Facilities
 - Better Layout



Capacity

- Trip Generation
 - ITE Rates
 - Statistical Reliability
 - Range – often 2:1 Ratio up and down
 - A Successful Development will have a Higher than Average Trip Generation!
 - Sensitivity Analysis is Important



Capacity

- Design Years
 - Opening Day, Phased Developments, Model year and/or 20 Years
 - Have to Assess Future Impacts
 - Site Traffic does not Change (assumption!)
 - Other Developments and “Regional Growth”



Capacity

- Capacity Analysis
 - Synchro or Other Approved
 - If Signalised, Progression (or Ability to) must be Addressed
 - Need to Use “Current Technology” Analysis



Capacity

- Mitigation
 - Maintain Minimum LoS
 - Intersection Improvements
 - Road Widening – Adjacent, Build or Protect
 - Off Site – Other Intersections Impacted
 - Transit/Bike/Ped Facilities
 - Transportation Demand Management (TDM)



Intersections and Access Point

- Access Capacity
 - Mitigation
- Impact on Roadway Capacity
 - Mitigation
- Access Management
 - Few Approved Access Management Projects
 - Consider “Site” in Relation to AM Concepts
 - Flexibility to Develop AM Around Site Access

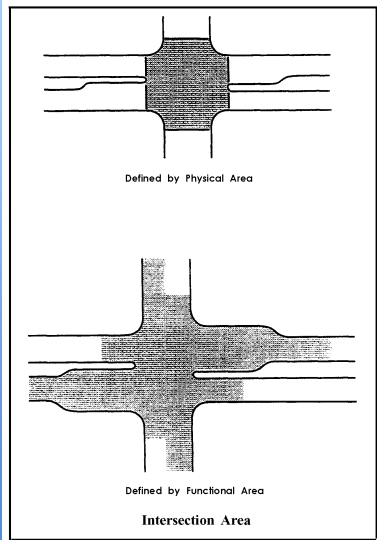


Intersections and Access Point

- Access Capacity
 - Mitigation – Improvements to Maintain Capacity
 - Number of Access Points – Balance between Capacity and Spacing
 - Location
 - Spacing
 - Intersection Functional Area
 - Configuration “T” or 4-Legs
 - Turn Restrictions
 - Laning



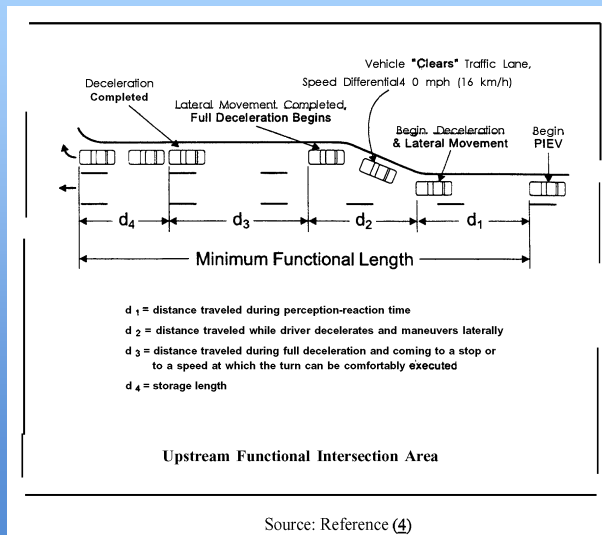
Intersection Functional Area



Source: Reference (7), Figure 4-16, p. 100

- Definition
 - “Area in which Traffic Operations are Affected by the Intersection”
- Importance
 - Area of Conflict
 - Avoid Additional Conflicts
- Effects on Access
 - Relocate Access
 - Restrict Turns (i.e. RT in Only)

Intersection Functional Area

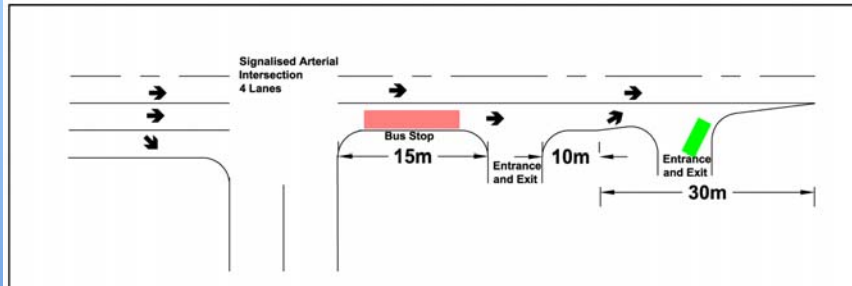


Source: Reference (4)

Minimum Lengths

- 40 kph
45-70m + storage
- 80 kph
140-210m + storage

Intersection Functional Area



- Bus Stop
- Driveway
- Lane Drop
- Driveway on Taper



Intersections and Access Point

- Impact on Roadway Capacity
 - Mitigation
 - **More Access = More Friction = Lower Capacity**
- Design Access Points to Minimize Conflicts
- Unsignalised
 - May be Restricted to Right In - Right Out
 - Location relative to Intersections
 - Deceleration Tapers, no Acceleration Lane
 - Safety
- Signalised
 - Must Look Like Public Road
 - Address Progression – spacing, timing



Intersections and Access Point

Before...



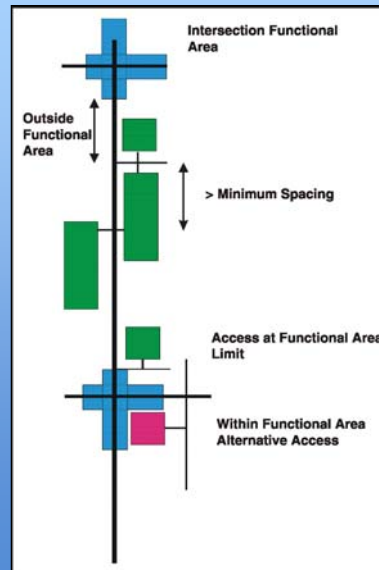
Intersections and Access Point

After...



Intersections and Access Point

- Access Management
 - Few Approved Access Management Projects
 - Generally Design Site as if an AM Plan was in Place
 - Consider “Site” in Relation to AM Concepts
 - Flexibility to Develop AM Around Site Access



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On-site

- Does it Impact the Highway?
 - Magazine Storage
 - First Intersection
 - Circulation
 - Adequate Parking Provision
 - ITE Rates
- If “Yes” – it’s an issue
- If “No” – it’s only an issue for business owners/customers
- Issues....

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On-Site Issues

- Key Issues
- Parking
 - # stalls
 - Sizes
- Circulation
- Truck Access
- Transit/Bike/Ped Access



On-Site Issues

- Parking
 - # stalls
 - Sizes
- Is site going to be successful? If so, will need more than average parking...
- Stall/Module size is function of:
 - type of use (high/low turnover)
 - vehicle mix (fewer small cars, more, larger SUV's, Pickups...)



On-Site Issues

- Circulation
 - Magazine is Critical – Must Have Adequate Length
 - Don't Use Street to Move Around Site
 - No Stalls on Main Circulation Aisles
 - Avoid dead end aisles (except residential/assigned parking)



On-Site Issues

Magazine is Critical – Must Have Adequate Length



On-Site Issues

Magazine is Critical – Inadequate Adequate Length



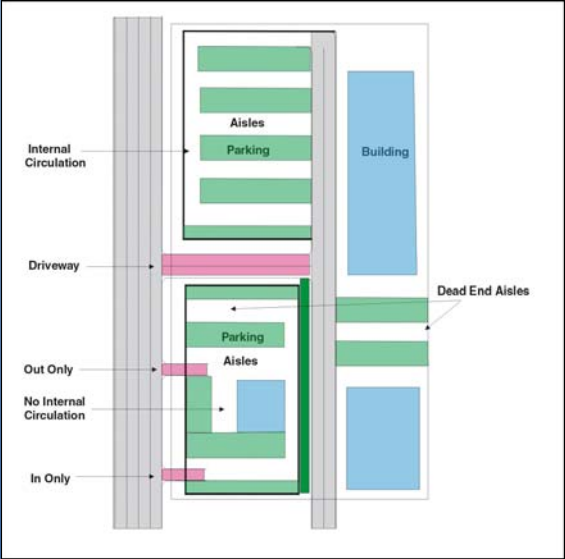
On-Site Issues

Magazine is Critical – Inadequate Adequate Length



On-Site Issues

- Circulation
- Don't Use Street to Move Around Site
- Avoid dead end aisles



On-Site Issues

No Stalls on Main Circulation Aisles



On-Site Issues

- Truck Access
- Loading Dock Location
- Adequate Access to Loading Docks
 - Turning Templates



On-Site Issues

- Truck Access
- Loading Dock Location
- Adequate Access to Loading Docks
 - Turning Templates



On-Site Issues

- Transit/Bike/Ped Access
- On-Site vs On Street Transit
 - Turning Templates



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On-Site Issues

- Sidewalks to Street
- Bike Facilities



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Summary

- **Defined Process**
 - Do it Early – and Get it Right, First Time
- **Identify Key Issues**
 - “Does it Impact Highway Operations”
- **Thorough and Consistent Analysis**
 - Compatible with Municipal Processes
- **Develop Acceptable Mitigation**
- **Approve Safe Access with Minimum Traffic Impact**

