



## **NORTH CAROLINA** Department of Transportation



# **Direct, Indirect & Cumulative Effects for Division Managed Projects**

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# Overview

- Define direct, indirect and cumulative community impacts and effects
- Note why these effects are assessed
- Review the reports used to assess and document effects and when to use them
- Discuss ways PEFs, Public Involvement and Community Studies can assist you

# What are they?

- “*Impacts*” and “*effects*” are used interchangeably
- “*Community*” is the human environment
- **Direct effects** are caused by the project and occur at the same time and location
- **Indirect effects** are caused by the project and are later in time or farther away
- **Cumulative effects** result from the impacts of this project combined with past, present and reasonably foreseeable actions

# Direct Effects

- **Social:** Community cohesion, isolation, displacement, quality of life
- **Physical:** Barriers; ability of people to walk, bike and use transit; connectivity, accessibility
- **Economic:** Detours and access (short term), business and employment (long term)
- **Land Use:** Agriculture, local plan compatibility
- **Safety:** Emergency response, non-motorists concerns, crime

# Direct Effects – Key Issues

- **Title VI of the Civil Rights Act:** *includes EJ, LEP and ADA* – all projects
- **NEPA:** federally funded projects
- **SEPA:** state funded projects
- **Section 6(f):** all projects
- **Section 4(f):** federally funded projects
- **FPPA:** federally funded projects
- **NC EO 96:** state funded projects
- **VAD/EVAD:** all projects



# Indirect & Cumulative Effects

## Induced changes in

- development patterns
- development intensity
- population density
- population growth rate

Related to effects on air, water and other natural systems



# Indirect Effects – Key issues

- **NEPA:** federally funded projects
- **Permits/T&E Species:** these “federalize” state funded projects
  - **Clean Water Act:** merger process; permits and mitigation; water quality modeling
  - **Endangered Species Act:** biological opinion

# Effects Reports

- One screening tool, four reports
  - Direct & Indirect Screening (DIS)
  - Community Characteristics Report (CCR)
  - Community Impact Assessment (CIA)
  - Indirect & Cumulative Effects (ICE)
  - Land Use Scenario Assessment (LUSA)

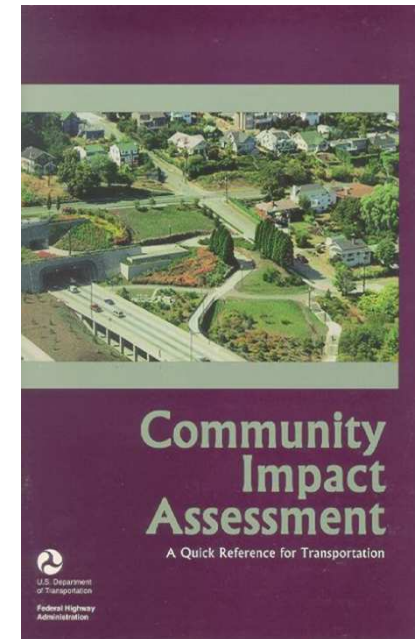


# Direct & Indirect Screening

- For CE, MCDC and SEA/FONSI projects
- By Division staff and contractors
- 10 “Yes/No” **Direct Effects** checkboxes
- 4 “Yes/No” **Indirect Effects** checkboxes

# Community Impact Assessment

- Combined CCR/CIA (*new*)
- Short form CCR & CIA
- Narrative CCR & CIA
  - Template Instructions (*in progress*)
  - CIA Guidance update (*in progress*)



## Combined CCR/CIA

- “Right-sized” for DMP, LAP, Bridge projects; linked with new CE process
- For Division staff and contractors
- When CCR not useful for decision making
- Demographics can be pulled separately to assist with public involvement

## Short Form CCR & CIA

- For simple NEPA EA / EIS, complex SEA, simple SEIS
- For Central / Division contractors
- Demographics provided up front to assist with public involvement



## Narrative CCR & CIA

- For complex NEPA EA / EIS, complex SEA / SEIS
- Allows project-specific flexibility
- For Central / Division contractors
- Used when additional data, analysis methods and graphics needed

# Instructions and Guidance

- Template-specific instructions to assist with report completion and review
- Consolidated guidance to provide consistency state-wide

# Indirect & Cumulative Effects

- Appendix ICE
- Checkbox ICE (*in progress*)
- Narrative ICE
- Land Use Scenario Assessment (LUSA)



# Appendix ICE

- Indirect Effects Matrix, explanatory paragraphs and summary

Table 1: Indirect Land Use Effects Matrix

Rating	Scope of Project	Travel Time Savings	Forecasted Population Growth	Forecasted Employment Growth	Available Land	Water/Sewer Availability	Market for Development	Public Policy	Notable Environmental Features	Result
<b>More Concern</b>	Major New Location	> 10 minute travel time savings	> 3% annual population growth	Substantial # of New Jobs Expected	5000+ Acres of Land	All services existing / available	Development activity abundant	Less stringent; no growth management	Targeted or Threatened Resource	
↑						X				
↔				X	X		X			
↓	X		X							
<b>Less Concern</b>	Very Limited Scope	No travel time savings	No population growth or decline	No new Jobs or Job Losses	Limited Land Available	No service available now or in future	Development activity lacking	More stringent; growth management	Features incorporated in local protection	Land Use Scenario Assessment Not Warranted

- For Central / Division contractors
- Used when permits require documentation of no effects

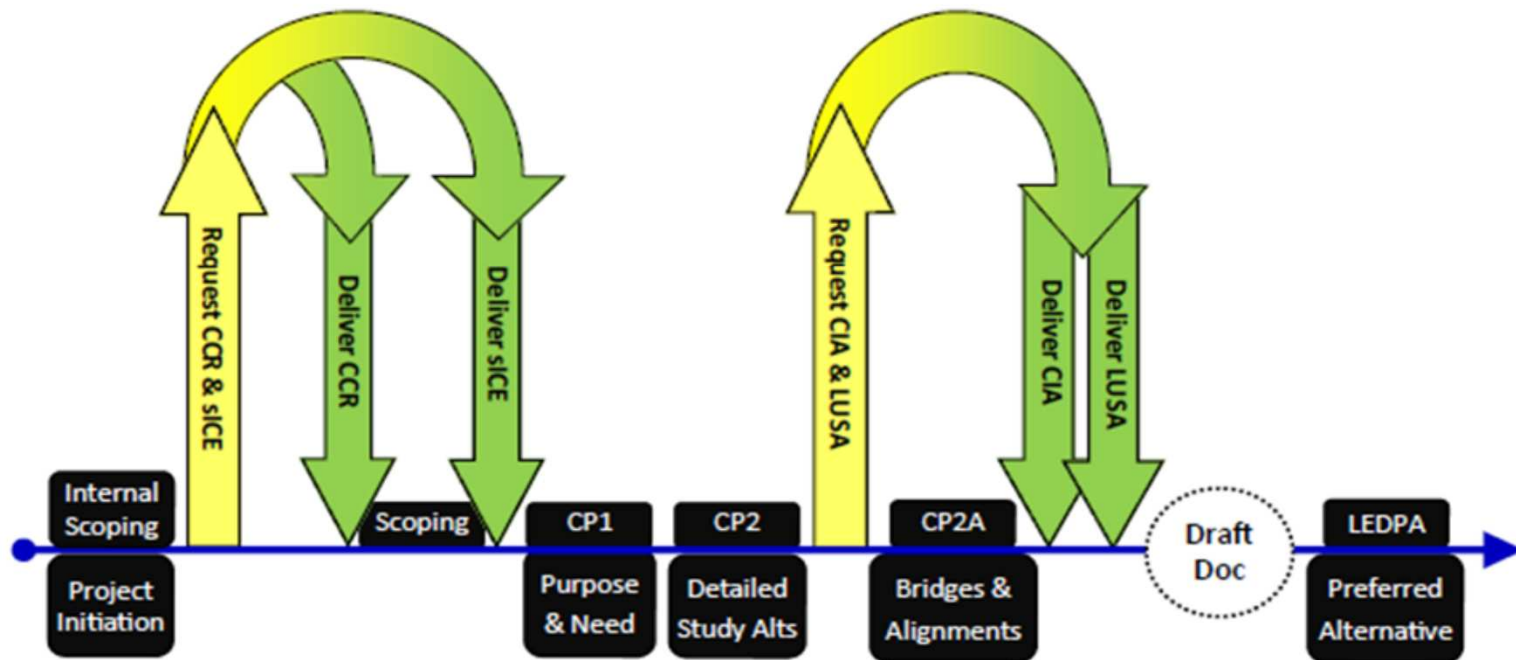
# Checkbox ICE

- Adds resource, market and trend data
- Checkbox format guides completion
- For Central / Division contractors
- Used to determine whether LUSA is warranted

# Narrative ICE

- Used when additional data, quantitative analysis methods and graphics needed
- Allows project-specific flexibility
- For Central / Division contractors
- For complex projects or sensitive areas where higher standard of study required for permits

# Impacts and Merger Process



# Land Use Scenario Assessment

- Used when recommended by the ICE or required by permitting agency
- Defines probable development areas and assesses induced growth potential
- Draws conclusions on water quality and natural resource impacts
- For Central / Division contractors

## Working with PEFs

- More simple reports (Direct and Indirect Screenings, Combined CCR/CIAs and Appendix ICEs) should be done on a Costs Plus basis, and should be batched or grouped to the extent possible
- More detailed reports may be costs plus or lump sum at Project Engineer's discretion

# Working with HES

- Project Engineers may request scope review and estimates through *Community Studies*
- Contractors may coordinate with *Community Studies* for study area boundaries and report reviews
- Project Engineers and contractors should coordinate with *Public Involvement* on outreach and meetings, especially when EJ and LEP are involved





# Working with HES

- CS on Connect
  - Templates
  - Guidance
  - Local input forms
  - Demographic tool
  - Standard language
  - Growth calculator

Hispanic or Latino Origin	Total Population	Hispanic		Not Hispanic	
		#	%	#	%
CT 9203, BG 2	1,034	0	0.0%	1,034	100.0%
CT 9209, BG 2	1,523	0	0.0%	1,523	100.0%
CT 9204, BG 3	3,047	73	2.4%	2,974	97.6%
CT 9206.02, BG 1	1,381	0	0.0%	1,381	100.0%
CT 9209, BG 4	926	20	2.2%	906	97.8%
<b>DSA</b>	<b>7,911</b>	<b>93</b>	<b>1.2%</b>	<b>7,818</b>	<b>98.8%</b>
<b>Watauga County</b>	<b>49,705</b>	<b>1,509</b>	<b>3.0%</b>	<b>48,196</b>	<b>97.0%</b>

Source: US Census Bureau, American Community Survey 5-year Estimates (2007-2011), Table B03002, "Hispanic or Latino Origin by Race."

## HES Census Data and Calculations Training Manual

February 2013

NC DOT  
NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
Community Studies  
PDES - Century Center Building 8  
200 Birch Ridge Drive  
Raleigh, NC 27610

*Connect > Resources > Environmental > Guidance and Procedures > More > Section: Community Studies*

# Working with HES

# Questions?