



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

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Go over the basics of impact type
Highlight a few legalities behind the effort
Discuss the tools CS has and is developing
Finally propose some ways that GECs, other consultants, central PI and CS can function together in this framework

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

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Positive or negative

Direct – relocations or providing a median refuge for pedestrians

Indirect – causing owner to renter, making an area attractive for industry or commercial development

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

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Some are objective

Some are subjective

Many are relative to the local context

Detours for example

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



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The legal whys. Community input through the community effects process and PI creates effective transportation decision-making and provides important information to NCDOT

Title VI of the Civil Rights Act includes Environmental Justice, Limited English Proficiency and Americans with Disability Act

Language includes disparate effects, disproportionately high and adverse impacts, to low income, disabled, elderly and others

With different accessibility needs, as well as minorities and ethnic groups

Section 4(f) here is recreational uses only – not historic

VAD only matters with involuntary condemnation so its usually just a heads up

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

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Basically ICE involves looking for a notable difference between build and no build development populations and patterns

CS looks at roof tops so NES can estimate runoff for permits

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

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Federally funded projects usually must complete an ICE as part of NEPA

SEPA does not require ICE unless something federalizes the project

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)

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“Effects” not included in name to avoid the acronym DIES. The DIS tool is in progress and will be field tested next month.

This may look like a lot of reports but these are scaled to reflect potential project impacts. Our right sizing effort over the past year plus Has aimed at eliminating unnecessary effort while still assessing and documenting what matters to our customers, meaning both Citizens and regulatory agencies. Our goal for DMP reports is news you can use.

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

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“No” documents effort; done

“Yes” = complete applicable CIA questions

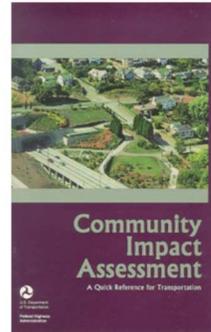
Local input forms when detours proposed

“Yes” to any = ICE if federally funded to federalized by a permit

Our beta tests with DMPs leads us to believe that the majority of small, simple projects will be fully assessed and documented by this screening tool alone.

Community Impact Assessment

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



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The combined CCR/CIA template – and we are working on a more catchy name – not only put the CCR and CIA together

But combined the existing Bridge CIA template with our recently developed DMP CIA.

The different types of reports are aimed at being a best fit for projects with different levels of complexity – not based on

The document type but specific to the human environment. Some rural projects may have a lot of natural environment concerns that drive the document type to be used, but the human side may be fairly simple and straightforward.

**Conversely, a very
Urban project may have no creeks or critters but very
notable human impacts.**

**Overall the presumption at this time is that the majority
of DMP projects that go past screening will use the
combined, that the
Majority of narrative CCRs & CIAs will be done by Central,
and that short forms will be the norm for the average
NEPA/SEPA project
That is likely to have some impacts.**

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

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As needed based on screening - may be done as in whole or in part, depending on project needs. Farm operations impact only, that’s the only section needed. Relocations look at specific questions and demographic data because Title VI may be involved. The CIA process has been reversed for simple projects, meaning resources and demographics are documented only AFTER potential impacts have been identified.

Several checkboxes in CIA directly answer checkboxes in new CE form and also document that a project meets state minimum criteria.

Developed based on the idea that for very small or very

simple projects, where minimal impacts are expected, and where design options are limited, documenting community resources and characteristics pre-design will not help with selecting the preferred alternative

This is likely to become the most common CIA template for DMP projects when documentation of assessment is needed for the document but impacts are expected to be low or absent.

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



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Used when CCR will be useful for decision making

Assess the community value of resources

From a ROW standpoint there may be a church or store on both sides of the road and these appear to be the same but the value of each to the community may be different

Aids in PI efforts

Helps determine whether relocations are simply ROW effects mitigated through the regular acquisition process or that they rise to the level of community

impacts that might require additional avoidance, minimization or mitigation measures.

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

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Very rarely used for DMPs – aimed at the most complex projects for the human environment, not the natural

Complete 540, Kinston Bypass, US 401 widening, I-26, Bus 40

The flexible format helps compare apples to oranges alternatives when community resources and potential impacts vary greatly from alternative to alternative

Instructions and Guidance

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

Instructions - How-to “desk reference” – this is something the analyst will keep beside them as each report is prepared.

Statewide consistency is important from a legal standpoint

Guidance - Greater depth and more detail covering all levels of reports.

Textbook for training

Encyclopedia for practitioners

Additional tools are available on our Connect site including a

Demographic tool

Growth estimator
Local input forms

Indirect & Cumulative Effects

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

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The first three ICE templates align with the three types of CIA, based on level of analysis and documentation required based on project complexity

A LUSA is a special report that is usually not needed but may be required for some permits

Appendix ICE

- Indirect Effects Matrix, explanatory paragraphs and summary

Table 1: Indirect Land Use Effects Matrix

Setting	Scope of Project	Travel Time Service	Forecasted Population Growth	Forecasted Employment Growth	Available Land	Water Service Availability	Market for Development	Public Policy	Reliable Developmental Features	Result	
Urban Context	High Density	20-30 min	+ 2% annual population growth	Substantial of the Urban District	200+ Acres of Land	All services being available	Development activity medium	Development of 200+ acres	To be used for future development	Land Use Service Assessed for Standards	
Urban Context	Medium Density	20-30 min	+ 2% annual population growth	No new jobs or activities	Limited Land Available	No service available for 100+ acres	Development activity being	Development of 200+ acres	To be used for future development	Land Use Service Assessed for Standards	

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

Roughly 10 to 12 paragraphs explaining matrix

This is likely to become the most common ICE template for DMP projects when documentation of assessment is needed for the document but no further work should be needed for a permit

Checkbox ICE

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

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**Guide completion - “No” stop, go to next section
“Yes” complete this section**

**We expect this new template to become the norm
for projects where a permit is anticipated, replacing
the longer narrative ICE**

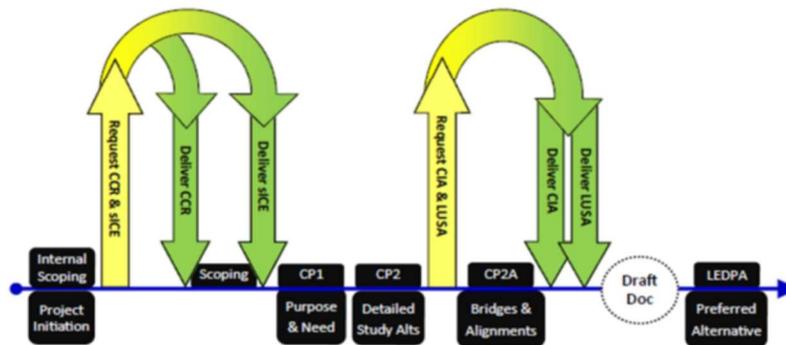
Narrative ICE

- 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

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Much like the narrative CIA, a narrative ICE offers more detail and greater format flexibility for larger, very complex projects like Complete 540, Kinston, Carolina Bays, etc.

Impacts and Merger Process



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This slide is included only to show how CS reports fit in with the overall Merger process.

We like to start the CCR and ICE at the same time, and on the rare occasion a LUSA is needed it should be initiated with the CIA

While they feed different decision points, they can be reviewed and delivered together.

Doing this allows for combined field work, stakeholder contacts, local plan reviews, etc. so overall it is more efficient when started together.

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

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Compared with an ICE assessment of a large study area as a whole, a LUSA is more quantitative and focused on small areas where the most development is anticipated

This allows NES and permitting agencies to determine where development may impact sensitive resources

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

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The first bullet mostly applies to GECs

The second bullet applies to both GECs and on-calls

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



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For the past several months we've been steadily shrinking the size of study areas as part of right sizing efforts

Currently we use a combination of our contractors and staff to review reports but we will adjust as needed if you decide to use your GEC + CS staff – your call

There will always be some projects that don't cleanly fit in a category so please do not hesitate to loop us in to discuss the best approach

Working with HES

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

HES Census Data and Calculations Training Manual
February 2013

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%
DSA	7,911	83	1.2%	7,828	98.8%
Watauga County	49,705	1,509	3.0%	48,196	97.0%

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

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
HES - Community Studies
1000 North Tryon Street, Suite 400
Raleigh, NC 27601
www.ncdot.gov

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

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Scope reviews – CS can help right size report types and the documentation effort needed, and we’re very flexible. Update memos, different kinds of PI

Always have your contractors go to the Connect site to download the latest and greatest tools, templates, guidances, etc.

Our new Demographic tool came in yesterday and should be uploaded to Connect in the near future once we’ve had a chance to test drive it

Working with HES

Questions?