

DURHAM • CHAPEL HILL • CARRBORO

**DCHC**

METROPOLITAN PLANNING ORGANIZATION

PLANNING TOMORROW'S TRANSPORTATION

# 2050 Metropolitan Transportation Plan Preferred Option

Andy Henry, [andrew.henry@durhamnc.gov](mailto:andrew.henry@durhamnc.gov), November 10, 2021

# Preferred Option – Public Engagement


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- Preferred Option is the integral part (i.e., projects and financial plan) of the 2050 MTP
- Public comment period: October 27<sup>th</sup> through December 7<sup>th</sup>
- Public comment activities:
  - Publicity: MPO email list; public affair postings; newspaper ad; and social media
  - Provide comments to MPO staff
  - Public hearing
- Public hearing today


# Preferred Option – Presentation

- Preferred Option is presented in document format →
- Web page has public participation info, documents, interactive maps, performance measures ↘

**PREFERRED OPTION**



Highway Map




Major Transit

**How to Participate**

The DCHC MPO has released the Preferred Option for the 2050 Metropolitan Transportation Plan (MTP) for a 42-day public comment period that will run from October 27, 2021 through December 7, 2021. The public can provide input by:

**Public Hearing:** The MPO Board will conduct a public hearing on November 10, 2021, 9am, by an online meeting. The public can speak directly to the Board on the Preferred Option by sending a request to address the Board at the hearing to [andrew.henry@durhamnc.gov](mailto:andrew.henry@durhamnc.gov).

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## 2050 MTP –Preferred Option

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Send comments or request to speak at the hearing to:

Andy Henry  
 Planner, Durham-Chapel Hill  
[andrew.henry@durhamnc.gov](mailto:andrew.henry@durhamnc.gov)  
 (919) 560-4366, ext. 36419

Public input period is October 27, 2021 through December 7, 2021

[www.bit.ly/2050MTP](http://www.bit.ly/2050MTP)

### Land Use (Socioeconomic Data)

#### Background

The MPO forecasts socioeconomic data (SE Data), such as dwelling units, population and employment, to the year 2050 and uses that data as a key input into the travel demand model called the Triangle Regional Model, or TRM. The process starts with the 2050 guide totals, which are county-level population and employment projections for the year 2050, and proceeds to the Community Visualization (CommViz) model that distributes the dwelling units and employment to particular parcels based on land availability and suitability.

The following MPO Web maps and document links provide more detailed information:

- [Map](#) of population and employment distribution for the Opportunity Places development foundation used in the Preferred Option.
- [Document](#) that explains the methodology for creating the Opportunity Places foundation.

#### Guide Totals

The MPO establishes the 2050 county-level population and employment to calculate the growth that the CommViz model process will distribute. The population is based on estimates and projections from the N.C. Office of State Budget and Management, and the employment projection is based on a private service from Woods-and-Poole Economics. The current employment estimate is based on employer data from InfoUSA that is verified and updated by local planners. The following table provides the county-level guide totals:

Population				
County	2016	2050	2016-2050	% change
Chatham*	46,051	103,345	57,294	124%
Durham	300,939	458,906	157,967	52%
Orange	143,678	193,477	49,799	35%
<b>Total</b>	<b>490,668</b>	<b>755,729</b>	<b>265,061</b>	<b>54%</b>

Employment				
County	2016	2050	2016-2050	% change
Chatham*	11,358	24,426	13,068	115%
Durham	217,114	401,168	184,054	85%
Orange	71,516	116,769	45,253	63%
<b>Total</b>	<b>299,988</b>	<b>542,363</b>	<b>242,375</b>	<b>81%</b>

\* Only includes portion of Chatham County in modeling area.

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# Highway Project Selection

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# Highway Projects

**No changes** on this slide since October 13 Board meeting.

- **TIP** -- Match first 4 years of Transportation Improvement Program (TIP) (i.e., 2020 through 2023) ... so include highway projects in Vision that have ROW or construction from 2020 through 2023 in STIP

Project	From	To	Existing Lanes	Proposed Lanes	Improvement	Vision	Traditional	Modernization	Bus Advantage	Grid	Comments	Estimated Cost
East End Connector (EEC)	NC 147	north of NC 98 in Durham	0	4	New Location	Y	Y	N	N	N	Funded before 2020	\$ -
Fayetteville Rd	Barbee Rd	Cornwallis Rd	2	4	Widening	Y	Y	N	N	N	Under construction	\$ -
Lynn Rd/Pleasant Dr Connector	Lynn Rd	Pleasant Dr	0	2	New Location	Y	Y	N	N	Y	Part of East End Connector	\$ 5,111,400
NC 55 (Alston Ave)	Main St	NC 98	2	2	Modernization	Y	Y	Y	N	N	Funded before 2021	\$ -
NC 55 (Alston Ave)	NC 147	Main St	2	4	Widening	Y	Y	N	N	N	Funded before 2020	\$ -
I-40	Durham County line	NC 86	4	6	Widening	Y	Y	N	N	N	First four years of STIP	\$ 68,851,000
I-40	NC 86	I-85	4	6	Widening	Y	Y	N	N	N	First four years of STIP	\$ 107,290,000
Woodcroft Pkwy Ext	Garrett Rd	Hope Valley Rd	0	2	New Location	Y	Y	N	N	Y		\$ 3,793,000

# Highway Projects

Red font indicates changes since October 13 Board meeting.

- **Modernizations** – These projects don't add capacity, but they improve safety and/or bike, ped and bus infrastructure
  - Durham has brought several highway widening projects back into the Vision scenario as modernizations (e.g., Fayetteville, NC 54, US 70, US 15-501)
  - Some of these Durham projects in the Vision scenario are conversions to boulevards (e.g., US 15-501 and US 70)
  - Durham added modernization to one section of Northern Durham Parkway that will initially be constructed by developers.
  - Preferred Option text will state the current difficulty in getting modernizations and boulevards funded under STI
  - Preferred Option text will provide general boulevard description
  - Durham added one-way pair conversions to two-way in central Durham

# Highway Projects

- **Bus Advantage** –Managed lane projects add roadway capacity, but they also provide travel advantages to transit buses

Highway	From	To	Improvement	TIP
I-40 Managed Lane	NC 54	US 15-501	Widening	I-5702A
I-40 Managed Lanes	Wake County Line	NC 147	Widening	I-5702B
I-40 Managed Lanes	NC 147	NC 54	Widening	I-5702A
NC 147 (possible managed lanes)	Future I-885	I-40	Widening	U-5934

Managed lanes are not included in the Preferred Option.



# Highway Projects

Red font indicates changes since October 13 Board meeting.

## • Grid Streets—

These projects provide a grid to support bike, ped and transit trips and access, and reduce VMT. They are mostly developer built.

... so include these highway projects in Vision and Traditional

Added:

- Southwest Durham Drive in Leigh Village area
- Falconbridge Rd Extension
- Leesville Road Extension

Project	From	To	Existing Lanes	Proposed Lanes	Improvement	Vision	Traditional	Comments
Angier Av Ext	US 70	Northern Durham Pkwy	0	2	New Location	Y	Y	To be built by developer; in dev't review in 2021
Angier/Glover Connector	Ellis Rd	Glover Rd	0	2	New Location	N	Y	Durham deleted from Vision
Crown Pkwy/Roche Dr	Page Rd	T.W. Alexander Dr	0	2	New Location	Y	Y	
Danziger Dr Extension	Mt Moriah Rd	E Lakewood Dr	0	2	New Location	Y	Y	
Eno Mountain Rd realignment	Mayo St	Eno Mountain Rd	2	2	New Location	Y	Y	
Freeland Memorial Extension	S Churton St	New Collector Rd	0	2	New Location	Y	Y	
Glover Rd	Angier	US 70	0	2	New Location	Y	Y	
Hebron Rd Extension	Hebron Rd	Roxboro Rd (501 N)	0	2	New Location	Y	Y	
Hopson Rd	Davis Dr	S Miami Blvd (NC 54)	2	4	Widening	Y	Y	Built by developer in 2021
Lake Hogan Farms Rd	Eubanks Rd	Legends Way	0	2	New Location	Y	Y	
Legion Rd Ext	Legion Rd	Fordham Blvd	0	2	New Location	Y	Y	
Lynn Rd Extension	US 70	Existing Lynn Rd	0	2	New Location	Y	Y	
Lynn Rd/Pleasant Dr Connector	Lynn Rd	Pleasant Dr	0	2	New Location	Y	Y	Part of East End Connector
Marriott Way	Friday Center Dr	Barbree Chapel Rd	0	2	New Location	Y	Y	
New Collector Rd	Orange Grove Rd Ext	Becketts Ridge Rd	0	2	New Location	Y	Y	
New Hope Commons Dr Extension	Eastowne Dr	New Hope Commons Dr	0	2	New Location	Y	Y	
Orange Grove Connector	Orange Grove Rd	NC 86	0	2	New Location	Y	Y	
Patriot Dr Extension	S Miami Blvd	Page Rd	0	2	New Location	Y	Y	
Purefoy Rd Ext	Sandberg Ln	Weaver Dairy Rd	0	2	New Location	Y	Y	
Roxboro St	Cornwallis Rd	MLK Pkwy	0	4	New Location	N	Y	Durham deleted from Vision; environmental concerns
S Elliot Rd Ext	Fordham Blvd	Ephesus Church Rd	0	2	New Location	Y	Y	
Southwest Durham Dr	US 15-501 Business	Mt Moriah Rd	0	4	New Location	Y	Y	
Woodcroft Pkwy Ext	Garrett Rd	Hope Valley Rd	0	2	New Location	Y	Y	
Yates Store Rd Extension	Yates Store Rd	Wake Rd	0	2	New Location	Y	Y	



# Highway Projects -- Vision

Red font indicates changes since October 13 Board meeting.

- These projects are not included:

- Orange County has added the following back into the Vision and/or Traditional
  - I-85 (in Orange County)
  - ~~NC 54 (I-40 to Barbee Ch Rd)~~
  - Old NC 86 (I-40 to Eno River)
  - NC 86 (Old NC 10/US 70 Bus)
  - NC 86 (US 70 Bypass to NC 57)

Project	From	To	Existing Lane	Proposed Lanes	Improvement	Visi	Traditi	Comments
Angier/Glover Connector	Ellis Rd	Glover Rd	0	2	New Location	N	Y	Durham deleted from Vision
I-40 (westbound auxiliary lane)	NC 147	NC 55	6	7	Widening	N	Y	
NC 147 (operational improvements)		East End						
US 70 (freeway)	Hopson Rd	Louis Stephens Dr						
US 70 (freeway)		Davis Dr			2	4	Widening	N N
NC 147 (possible managed lanes)	I-40 Managed Lane	NC 54			US 15-501	6	8	Widening N Y Durham deleted from Vision
Fayetteville Rd	I-40 Managed Lanes	NC 147			NC 54	6	10	Widening N Y Durham deleted from Vision
I-85	I-40 Managed Lanes	Wake County Line			NC 147	8	10	Widening N Y Durham deleted from Vision
NC 54 (widening; superstreet)	I-40/ NC 54 ramp	Farrington Rd			I-40	0	1	New Location N N
US 15-501 (expressway conversion)	Leesville Rd Ext	US 70/Page Rd Ext			Leesville Rd	0	2	New Location N Y Built as part of US 70 (U-5720)
NC 54		Southpoint						Some sections complete, but mostly still two-lane
NC 54	NC 751	NC 54			Auto Park Blvd	2	4	Widening N N
NC 54	Northern Durham Pkwy	I 85 North			Old Oxford Hwy	0	4	New Location N N
NC 54		S Mineral						
	Sherron Rd	Springs Rd			Stallings Rd	2	4	Widening N N
NC 751	Southwest Durham Dr	NC 54			I-40	0	2	New Location N N
Falconbridge Rd Connect					Old Chapel Hill			
Falconbridge Rd Extensio	Southwest Durham Dr	Sawyer Dr			Rd	2	4	Widening N N
Garrett Rd	US 15-501 Bypass	MLK Parkway			I-85	4	6	Widening N N
Garrett Rd					Wake County Line	2	4	Widening N N
Hope Valley Rd (NC 751)	Wake Forest Hwy (NC 98)	Nichols Farm Dr						
	Eubanks Rd	Millhouse Rd			Rex Rd/Kousa trail	2	4	Widening N N
	Roxboro St	Cornwallis Rd			MLK Pkwy	0	4	New Location N Y Durham deleted from Vision; environmental concerns

# Transit, Bike-Ped, and Complete Streets

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# Transit

**No changes** on this slide since October 13 Board meeting.

CRT, BRT and express bus are on interactive map on web page.

Transit Element	2030	2040	2050
<b>CRT</b> –Triangle Commuter Rail	...	W. Durham to Clayton; 8-2-8-2	Hillsborough to Selma; 12-8-12-8
<b>BRT</b> - Chapel Hill North-South	BRT: Eubanks to Southern Village	no change	no change
<b>BRT</b> - Durham/Chapel Hill (via US 15-501): UNC Healthcare to downtown Durham to NCCU	...	BRT with bus-only lane	no change
<b>BRT</b> - Durham/RTP (via NC 147)	...	BRT using managed lane	...
<b>BRT</b> - Chapel Hill/RTP (via NC 54)	...	...	BRT with bus-only lane
<b>Bus</b> – frequency, coverage and connection improvements, especially major corridors	Yes	Yes	Yes
<b>Bus</b> - amenity and access improvements	Yes	Yes	Yes
<b>BOSS</b> – bus on shoulder improvements to highways	See highway plan	See highway plan	See highway plan
<b>Express Bus</b> - Durham/Butner (via I-85)	...	...	Enhanced bus service
<b>Express Bus</b> - White Cross/UNC	...	Enhanced bus service	...
<b>Express Bus</b> - Chapel Hill/Hillsborough	...	Enhanced bus service	...
<b>Express Bus</b> - Chapel Hill/ Pittsboro	...	Enhanced bus service	...

# Bicycle and Pedestrian

The level of bicycle and pedestrian facility investment is based on a review of the MPO's local government plans.

- 175 miles of sidewalk per decade
- 70 miles of shared use paths per decade
- 80 miles of protected bike lanes per decade
- 20 miles of bicycle boulevards per decade

**Note:**

- Bicycle and pedestrian projects are usually not listed or mapped in the MTP
- Report appendix will list regional routes. (because SPOT awards regional points)
- \$292m in costs in 2045 MTP

## Bike/Ped Costs to complete local plans

	Length (mi)	Unit Cost (ft)	Total Cost (\$millions)
Sidewalk	525	\$ 250	\$ 693
Shared Use Path/Sidepath	210	\$ 500	\$ 554
Protected bike lane (both sides)	240	\$ 1,200	\$ 1,521
Bicycle Boulevard	60	\$ 10	\$ 3
Total			\$ 2,771

Costs to complete local plans

Revenue available in 2050 MTP financial plan

Roadways & Alternative Transportation	2030	2040	2050	Total
Bicycle and Pedestrian	\$ 100	1,092	1,141	\$ 2,332

84% of local plan buildout



# Financial Plan

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# 2050 Metropolitan Transportation Plan

## Use *All Together* Investment Revenue

1. “Traditional” Revenues (2021-50)
  - ❖ State & federal funds based on current STIP, NC Moves report and STI framework
  - ❖ Continuation of county-level transit sales taxes
  - ❖ Past pattern for other sources (local bonds, developer projects)
2. NC First Commission Additional State Revenues (2031-50)
  - ❖ MPO “fair shares” of recommended amount
3. Additional Local/Regional Revenues (2031-50)
  - ❖ Based on “sales tax equivalent”



# Financial Plan – Roadway & Alt. Trans - **Costs**

## DCHC MPO - 2050 MTP Financial Plan

Preferred Option (in millions \$)				
Roadways & Alternative Transportation	2030	2040	2050	Total
<b>Costs</b> (millions \$)				
1 { Statewide (State/Federal Capital)	\$ 247	\$ 817	\$ -	\$ 1,065
2 { Regional (State/Federal Capital)	\$ 30	\$ 162	\$ 174	\$ 366
3 { Division (State/Federal Capital)	\$ 67	\$ 188	\$ 163	\$ 418
2 Roadway Maintenance and Operations	\$ 1,425	\$ 1,823	\$ 2,326	\$ 5,573
3 Bicycle and Pedestrian	\$ 100	\$ 1,092	\$ 1,141	\$ 2,332
4 { Transportation Demand Management	\$ 20	\$ 20	\$ 20	\$ 60
4 { Intelligent Transportation Systems	\$ 35	\$ 35	\$ 35	\$ 105
4 { Transportation System Management	\$ 45	\$ 45	\$ 45	\$ 135
4 { Bus On Shoulder (BOSS)	\$ 1.3	\$ 3.4	\$ 1.4	\$ 6.1
Roadways & Alternative Transportation <b>Cost</b> Total	<b>\$ 1,972</b>	<b>\$ 4,185</b>	<b>\$ 3,904</b>	<b>\$ 10,060</b>

# Financial Plan – Roadway & Alt. Trans - Revenues

Roadways & Alternative Transportation	2030	2040	2050	Total
<b>Revenue</b> (millions \$)				
Statewide (State/Federal Capital) - roadways	\$ 290	\$ 860	\$ 43	\$ 1,192
Regional (State/Federal Capital) - roadways	\$ 54	\$ 186	\$ 198	\$ 438
Division (State/Federal Capital) - roadways	\$ 101	\$ 221	\$ 196	\$ 519
Roadway Maintenance and Operations	\$ 1,425	\$ 1,823	\$ 2,326	\$ 5,573
Regional (State/Federal Capital) - non roadways	\$ 33	\$ 21	\$ 24	\$ 78
Division (State/Federal Capital) - non roadways	\$ 33	\$ 13	\$ 14	\$ 60
Local/private - Roadways	\$ 71	\$ 56	\$ 99	\$ 225
Local/private - Bicycle & Pedestrian	\$ 25	\$ 25	\$ 25	\$ 75
STBG-DA and CMAQ	\$ 80	\$ 80	\$ 80	\$ 240
NC First Commission	\$ -	\$ 1,100	\$ 1,100	
Roadways & Alternative Transportation <b>Revenue</b> Total	<b>\$ 2,113</b>	<b>\$ 4,384</b>	<b>\$ 4,104</b>	<b>\$ 10,601</b>
<b>Roadways and Alt. Transportation Balance</b>	<b>\$ 141</b>	<b>\$ 200</b>	<b>\$ 200</b>	<b>\$ 541</b>

Year	Amount
2030	\$3.4B
2040	\$2.1B
2050	\$2.4B

The table on the left is the amount available based on the current TIP and NCDOT revenue model. STI limits the use of state and federal funding for non highway uses, so revenue only reflects proposed roadway costs.

Staff suggest maintaining \$200 million positive balance in each decade to cover costs for amendments



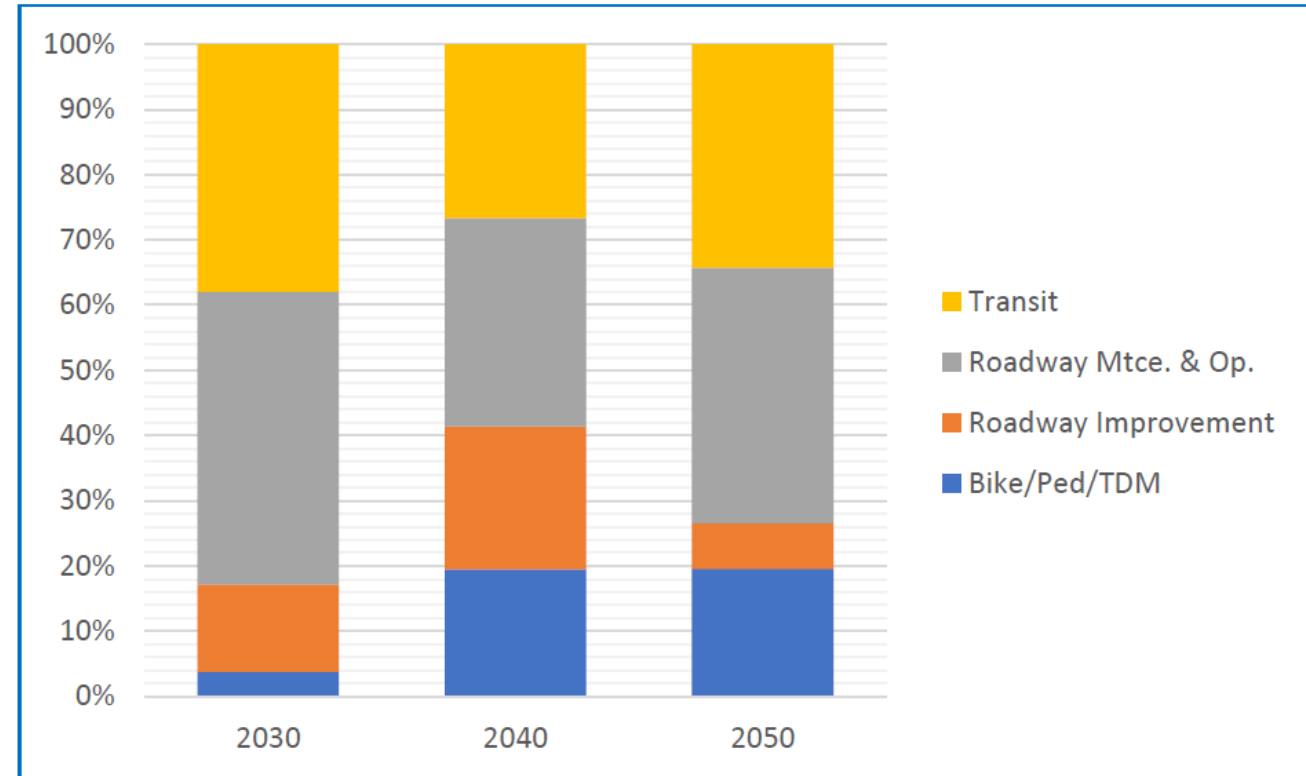
# Financial Plan – Transit

Preferred Option (in millions \$)				
Public Transportation - Pre Transit Plan	2030	2040	2050	Total
<b>Costs</b> (millions)				
Operations and Capital	\$ 562	\$ 562	\$ 562	\$ 1,686
<b>Revenues</b> (millions)				
Existing Revenues (non-transit plan)	\$ 562	\$ 562	\$ 562	\$ 1,686
<b>Pre Transit Plan Balance</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Public Transportation - New / Transit Plan</b>				
<b>Costs</b> (millions)				
Operations	\$ 233	\$ 463	\$ 512	\$ 1,208
Capital	\$ 408	\$ 488	\$ 958	\$ 1,854
Total	\$ 641	\$ 951	\$ 1,470	\$ 3,062
<b>Revenue</b> (millions)				
Current and Proposed Tax	\$ 550	\$ 1,046	\$ 1,260	\$ 2,856
Federal (CIG)	\$ 128	\$ 195	\$ 442	\$ 765
Total	\$ 678	\$ 1,241	\$ 1,702	\$ 3,621
<b>New / Transit Plan Balance</b>	<b>\$ 37</b>	<b>\$ 290</b>	<b>\$ 232</b>	<b>\$ 559</b>

# Financial Plan

This table and graph display the total investment by category.

Total MTP Investment	(\$ in billions)	% of Total
Bike/Ped/TDM	2.4	16%
Roadway Improvement	2.1	14%
Roadway Mtce. & Op.	5.6	38%
Transit	4.8	32%



# Schedule

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- Released Preferred Option -- October 27
- Conduct public hearing on Preferred Option -- November 10
- Approve Preferred Option for 2050 MTP;  
Release full 2050 MTP report, including SE Data and  
Triangle Regional Model -TRM;  
Release Air Quality Conformity Determination report --  
December 8
- Adopt by resolution the 2050 MTP (adoption includes SE  
Data and TRM), and Air Quality Conformity Determination --  
January 12 or February 9, 2022

The DCHC MPO Public Involvement Plan:

- minimum 42-day public comment period for major MTP decision points such as the Preferred Option;
- minimum 21-day public comment period for Air Quality Conformity Determination.