



WATER LOG

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Fifth Circuit Upholds Dismissal of Private Angler Challenge to Amendment 40

Also,

Louisiana District Court Upholds EPA's Denial of Numeric Nutrient Criteria Rulemaking Petition

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Cover photograph of red snappers; courtesy of Steve Harwood.

Contents photograph of a sunset over the Gulf of Mexico; courtesy of Donald Kennedy.

• UPCOMING EVENTS •

State of the Gulf of Mexico 2017 One Gulf Summit

March 26-30, 2017
Houston, TX

<http://www.sgmsummit.org>

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Gulf of Mexico Alliance: 2017 All Hands Meeting

March 26-31, 2017
Houston, TX

<http://bit.ly/2017allhands>

.....

Climate and Resilience CoP Meeting 2017

May 16-18, 2017
Covington, LA

<http://bit.ly/2017climate>

Fifth Circuit Upholds Dismissal of Private Angler Challenge to Amendment 40

Stephanie Otts and Kimberly Russell

Red snapper management in the Gulf of Mexico has been controversial for over 30 years. Tensions have risen so high at times that it can seem as if there is practically a war between the commercial sector and recreational fishermen. Adding fuel to the fire is a new amendment to the fishery management plan governing red snapper harvest in the Gulf of Mexico. In 2013, the Gulf of Mexico Fishery Management Council (Gulf Council) proposed, through Amendment 40, the division of the recreational sector of the red snapper fishery into two components, one for charter boats operating in federal waters and one for private anglers. The Coastal Conservation Association (CCA), a group representing private anglers, challenged National Oceanic and Atmospheric Administration (NOAA) regulations implementing Amendment 40. In January, the Fifth Circuit Court of Appeals upheld the dismissal of the lawsuit by a Louisiana district court.

Background

The Magnuson-Stevens Conservation and Management Act of 1976 (MSA) is the primary federal authority governing fishing in U.S. waters. The goal of the MSA is the conservation and protection of fish populations from multiple threats including overfishing. The MSA established eight Regional Fishery Management Councils to develop fishery management plans for stocks under their respective authorities. The Gulf Council manages red snapper stocks through the Reef Fish Fishery Management Plan (FMP).



Photo of a red snapper; courtesy of Jon Connell.

Prior to Amendment 40, red snapper fishing quotas were divided into two categories: commercial and recreational anglers, which included both charter boats and private anglers. The recreational sector has exceeded its allocated quota almost every year since 1991. The Gulf Council had traditionally responded to these overages by shortening the recreational season.

The Gulf Council only has management authority over federal waters. States exercise independent fisheries management jurisdiction in state waters. As the Gulf

Council shorted the season in federal waters, the five Gulf states lengthened the season in state waters. In 2014, the fishing season for red snapper in federal waters was nine days. The red snapper seasons in state waters ranged from 21 days in Alabama and Mississippi to almost year-round in Louisiana (286 days). In Texas, the red snapper seasons never closed. The fishery was open for 365 days.

NOAA regulations require federally licensed charter boats operating in the Gulf of Mexico reef fishery to comply with the more restrictive federal regulations regardless of where the fish are harvested. Charter boat operators are therefore unable to take advantage of the longer seasons in state waters. The charter boat industry is further limited by a moratorium on the issuance of new charter vessel permits for the fishery that has been in place since 2003. Although there are bag limits for private anglers, there is no restriction on the number of anglers that may fish from private recreational boats. Critics of the current management regime argue that it unfairly benefits private anglers at the expense of the charter industry.

Amendment 40 was the Gulf Council's attempt to address the disparities that had arisen within the recreational sector and provide a mechanism for developing management regimes tailored to the individual components. Amendment 40 breaks the recreational sector into two components: federal charter boats and private anglers. Amendment 40 allocates the red snapper recreational quota between these two sectors and establishes separate season closure provisions for the 2015, 2016, and 2017 seasons.

CCA's Challenge

The CCA filed a lawsuit challenging the regulations issued by NOAA to implement Amendment 40. In January 2016, the U.S. District Court for the Eastern District of Louisiana granted NOAA's motion for summary judgment and dismissed the case. The CCA appealed. On appeal, the CCA asserted that Amendment 40 was improper for three reasons. First, the CCA argued that the MSA prohibits the Gulf Council from regulating charter fishing separately from other recreational fishing. Second, the CCA asserted that the Gulf Council and NOAA failed to adequately assess the economic and

Photo of a red snapper; courtesy of Daniel Kwok.



social effects of Amendment 40 as required by the MSA. Finally, the CCA claimed the date ranges used to calculate quota allocations was arbitrary and capricious.

Section 407 of the MSA mandates that any fishery management plan for red snapper must “establish separate quotas for recreational fishing (which for the purposes of this subsection shall include charter fishing ... and commercial fishing...)”¹ The CCA claims this provision prohibits the Gulf Council from establishing separate quotas for charter boats and private anglers. The Fifth Circuit disagreed. According to the court, Amendment 40 established a sub-quota for charter fishing within the recreational sector – not a separate quota. The court found no language within § 407 that would prohibit the subdivision of recreational and commercial quotas.

Fishery management plans and all subsequent amendments to those plans must comply with ten national standards set forth in the MSA.² National Standard Eight requires regional fishery management councils to “take into account the importance of fishery resources to fishing communities by utilizing economic and social data.”³ In addition, FMPs must include a fishery impact statement that assesses the economic and social impacts of the proposed conservation and management measures on the participants of the fishery.⁴

The CCA argued that these provisions “impose an affirmative duty to collect and generate only quantitative, rather than qualitative, predictions of economic and social effects” and that the Gulf Council and NOAA failed to produce such data.⁵ The court disagreed. First, the court found no evidence that Congress intended to limit the analysis to quantitative data. Furthermore, National Standard 2 only requires that fishery conservation and management measures be “based upon the best scientific information *available*.”⁶ NOAA and the regional councils are not required to produce quantitative data beyond that which is currently available.

Finally, the CCA argued that the Gulf Council’s decision to allocate quotas based, in part, on historic catch data from as early as 1986 was arbitrary and capricious. The CCA asserted that the historic data did not reflect the “dramatic shift” in the red snapper recreational fishery away from charter boats to private angling. In developing Amendment 40, the Gulf Council

considered a number of alternative data sets covering different periods of time. The Gulf Council ultimately relied on two sets of data – one covering 2006-2013 and one covering 1986-2013 – determining that the use of both historic and more recent harvest information was necessary to achieve a fair and equitable allocation. The Fifth Circuit found that the record provided a rational justification for these decisions.

The CCA asserted that the historic data did not reflect the “dramatic shift” in the red snapper recreational fishery away from charter boats to private angling.

Conclusion

Although the Fifth Circuit’s ruling is a victory for the Gulf Council, it is unlikely to end the red snapper management controversies in the Gulf of Mexico. Amendment 40 will sunset after the 2017 fishing season unless the Gulf Council takes action to extend the provisions. If history is any indication, the path forward for 2018 and beyond will be fraught with controversy. 🐟

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Endnotes

- 16 U.S.C. § 1883(d).
- See id.* § 1851(a).
- Id.* § 1851(a)(8).
- Id.* § 1853(a)(9).
- Coastal Conservation Association v. U.S. Department of Commerce, 846 F.3d 99, 108-9 (5th Cir. 2017).
- 16 U.S.C. § 1851(a)(2) (emphasis added).

Louisiana District Court Upholds EPA's Denial of Numeric Nutrient Criteria Rulemaking Petition

Morgan Stringer



A view of the Gulf of Mexico; courtesy of Michael McCarthy.

In December 2016, a Louisiana district court upheld the Environmental Protection Agency's (EPA) decision not to engage in a rulemaking process to establish numeric water quality standards for phosphorus and nitrogen in the Mississippi River Basin. This decision brings to a close, for the time being at least, the Gulf Restoration Network's efforts to force federal action under the Clean Water Act to address the dead zone in the Gulf of Mexico.

Background

In 2008, the Gulf Restoration Network and several other environmental organizations (collectively "GRN") filed a rulemaking petition with the EPA requesting the agency establish numeric water quality standards for nutrients, specifically nitrogen and phosphorous, and Total Maximum Daily Loads (TMDL) for any waters not meeting such standards. The petitioners argued that numeric water quality

standards are necessary to address the high levels of nitrogen and phosphorous pollution in the Gulf of Mexico that contribute to the annual “dead zone” and are harmful to marine life. Although states have primary responsibility under the Clean Water Act (CWA) to address nutrient pollution, the petitioners claimed they have not done enough to address the problem. To address the perceived lack of action on the state level, the petition called on the EPA to set federal standards that the states would be required to follow.

The CWA permits EPA to establish water quality standards through federal regulations in two circumstances: (1) if the EPA determines a state-submitted standard is not consistent with the CWA or (2) “in any case where the Administrator determines that a revised or new standard is necessary to meet the requirements” of the CWA.¹ When exercising its authority in the second instance, the EPA must make what is known as a “necessity determination.”

To address the perceived lack of action on the state level, the petition called on the EPA to set federal standards that the states would be required to follow.

In 2011, the EPA denied GRN’s petition. Although the EPA agreed with GRN that nitrogen and phosphorous pollution “is a significant water quality problem,” the agency did not believe a federal rulemaking would be “the most effective or practical means of addressing these concerns at this time.”² In its formal response to the GRN’s petition, the EPA was silent with respect to whether a new or revised standard was or was not necessary. In other words, the agency declined to make a necessity determination.

GRN challenged the EPA’s denial of its rulemaking petition in 2012. In 2013, the U.S. District Court for the Eastern District of Louisiana ruled that the EPA had to make a “necessity determination.”³ The district court based this decision on the U.S. Supreme Court’s opinion in *Massachusetts v. EPA*. In that case, the Supreme Court held that the EPA had to give a reasoned explanation of its action or inaction in a rulemaking petition denial that

complied with the statutory text. The district court interpreted this holding as requiring the EPA to make a necessity determination, even when the statute does not explicitly require the EPA to do so.⁴

The EPA appealed the district court’s ruling. On appeal, the Fifth Circuit Court of Appeals disagreed with the district court. The Fifth Circuit interpreted the holding in *Massachusetts v. EPA* to mean that a necessity determination is not required, so long as the agency provided a “reasonable explanation” grounded in the statute for why it elected not to make the determination.⁵ The Fifth Circuit remanded the case to the district court for a determination of whether the EPA’s stated reasons for the petition denial were legally sufficient.

“Reasonable Explanation”

On remand, the district court held that the EPA’s explanation for its refusal to make a necessity determination was legally sufficient. In its denial, the EPA expressed its desire “to continue to work cooperatively with the states and tribes to strengthen nutrient management programs.”⁶ In addition, the EPA explained that the development of federal numeric nutrient criteria would require extensive staff time and impose significant regulatory and oversight burdens on the agency.

The plaintiffs claimed this explanation was simply “a laundry list of reasons not to regulate,” which the Supreme Court in *Massachusetts* found insufficient.⁷ Furthermore, the plaintiffs argued that the Fifth Circuit’s directive to provide a reasonable explanation “grounded in statute” required the EPA to reference specific requirements of the CWA.⁸ They argued the EPA’s explanation was deficient because it did not include any analysis of how the EPA reached its decision based on the statutory language.⁹

The district court disagreed, holding that a verbatim citation of the statute is not required for an explanation to be “grounded in statute.” The court stated that “the CWA is by design a states-in-the-first-instance regulatory scheme.”¹⁰ Under the CWA, states are required to establish water quality standards for their waters, with the EPA serving in an oversight role. Only when states demonstrate that they either cannot or will not adopt or enforce standards, may the EPA take more direct action. Because the CWA



A view of the Mississippi River; courtesy of Ken Lund.

establishes a preference for federal-state cooperation and EPA's refusal to make a necessity determination was based on its desire to continue working cooperatively with the states, the court held that the EPA had provided a reasonable explanation grounded in the CWA.

Conclusion

After years of litigation, the EPA has successfully defended its decision not to make a necessity determination regarding the need for numeric nutrient criteria to address water quality problems in the Gulf of Mexico. The district court, however, hinted at the possibility of future litigation if the EPA continues to rely on a states-first approach. The court concluded its opinion with this final thought: "Presumably, there is a point in time at which the agency will have abused its great discretion by refusing to concede that the current approach – albeit the one of first choice under the CWA – is simply not going to work."¹¹ 🐦

Morgan Stringer is a second-year law student at the University of Mississippi School of Law.

Endnotes

1. 33 U.S.C. § 1313(c)(4).
2. *Gulf Restoration Network v. Jackson*, 783 F.3d 227, 231 (5th Cir. 2015).
3. *See Gulf Restoration Network v. McCarthy*, No. 12-677, 2013 WL 5328547 (E.D. La. Sept. 20, 2013).
4. *Gulf Restoration Network v. Jackson*, 2016 WL 7241473 at *4 (E.D. La. Dec. 15, 2016).
5. *Id.* at *4.
6. *Id.*
7. *Id.* at *5.
8. *Id.*
9. *Id.*
10. *Id.*
11. *Id.* at *6.

FDA Declines to Establish a Performance Standard for *Vibrio* in Raw Oysters

Stephanie Otts and Victoria Taravella



Photo of oyster traps; courtesy of Andrew Malone.

On November 30, 2016, the U.S. Food and Drug Administration (FDA) denied the petition of the Center for Science in the Public Interest (CSPI) to regulate *V. vulnificus* in shellfish. *V. vulnificus*, more commonly referred to as vibrio, is a naturally occurring bacteria in the marine environment that can cause infections through contact or ingestion. The bacteria blooms when water temperatures are warm for extended periods of time, such as during the summer months in the Gulf of Mexico. This bacterium can present a health risk throughout the year to individuals who consume raw oysters. In its petition, the CSPI requested the FDA take regulatory action to establish a performance standard of “non-detectable” in molluscan shellfish intended for raw consumption. The CSPI claims the enforcement of a performance standard would dramatically reduce the amount of deaths due to consumption of raw oysters containing *V. vulnificus*.

V. vulnificus can be found along all three coasts of the continental United States. The warm waters of the Gulf of Mexico promote the growth of the bacteria, especially during the summer months of May through September. A healthy person who comes into contact with vibrio may suffer symptoms similar to food poisoning that will usually pass in a few days’ time. Individuals whose immune systems are compromised due to health conditions, such as diabetes or cancer, can experience severe and life-threatening infections. According to the Centers for Disease Control and Prevention, vibrio infections cause an estimated 80,000 illnesses and 100 deaths in the United States every year.¹

The FDA works in partnership with the Interstate Shellfish Sanitation Conference (ISSC), a national organization of state shellfish regulatory officials, to provide guidance on standards and procedures for managing the safety of shellfish. The FDA and ISSC have

taken a number of non-regulatory steps to reduce the vibrio infection risks associated with the consumption of raw oysters. The ISSC members states, for example, are required to develop and implement vibrio management and control plans. States focus primarily on educating immunocompromised individuals regarding risks and enforcing strict post-harvest time-to-temperature controls. The FDA claims these efforts have resulted in a 30% reduction in illness reported nationwide and a 40% reduction in deaths in 2013 and 2014.²

Illness and deaths from the consumption of raw oysters, however, still unfortunately occur every year. The CSPI argued these state-led efforts are not enough to address the public health threat. The CSPI asserted in its petition that the control of vibrio should be a federal responsibility and wants the FDA to take regulatory action to eliminate the bacteria from oysters. The CSPI's petition called on the agency to establish a performance standard of non-detectable levels of *V. vulnificus* in molluscan shellfish intended for raw or processed raw consumption pursuant to § 104(b) of the Food Safety Modernization Act (FSMA). Section 104(b) authorizes the FDA to issue contaminant-specific guidance documents "when appropriate to reduce the risk of serious illness or death to humans."³

The CSPI asserted in its petition that the control of vibrio should be a federal responsibility and wants the FDA to take regulatory action to eliminate the bacteria from oysters.

On November 20, 2016, the FDA denied the CSPI's petition determining that a performance standard of non-detectable was not warranted at this time. The FDA acknowledged that they had the authority to issue contaminant-specific guidelines in certain circumstances but noted that nothing in the text of § 104(b) actually requires the agency to do so. In its denial letter, the FDA asserted that the significant reductions in oyster-related vibrio illnesses achieved in recent years was the result of increased industry compliance with state vibrio control



Photo of oysters, courtesy of Paul Asman and Jill Lenoble.

plan requirements. The FDA concluded that the most appropriate course of action at this time, given the agency's limited resources and competing priorities, was to continue to work cooperatively with the ISSC, states, and industry to implement risk reduction measures.

Despite the best efforts of the states and the oyster industry, some risk will always remain for consumers of raw shellfish. *Vibrio* is a naturally occurring bacteria that can never be entirely eliminated from the environment. Proper harvesting, handling, and processing techniques can reduce the levels of bacteria in raw oysters, but there is no legal standard. Individuals with compromised immune systems or other risk factors for vibrio infections should use caution when heading to a raw bar. 🦞

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Endnotes

1. *Vibrio* species causing vibriosis, [Centers for Disease Control and Prevention](#) (last visited 2/16/17).
2. Letter from Nega Beru, Director, Office of Food Safety, Food and Drug Administration, to Michael Jacobson, Executive Director, Center for Science in the Public Interest, at 6 (Nov. 20, 2016).
3. 21 U.S.C. § 2201(b).

The Urban Transect: One of the Planning Profession's Most Powerful Tools

Stephen Deal

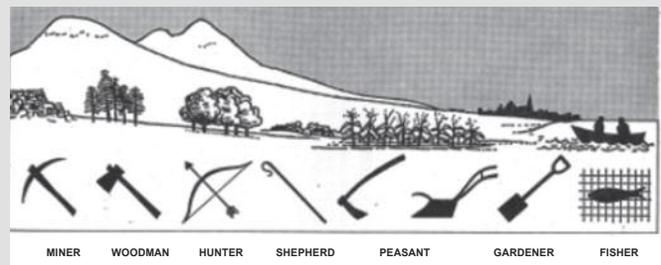
At its core, zoning is a method for allocating economic and social value. In traditional zoning this value allocation process is shaped through the use of color-coded districts, which generally denote the land use and intensity of an area. These categories, and the standards associated with them, are generally assigned to individual parcels. However, by attempting to control for multiple variables at such a discrete level it is easy to forget about how property value correlates to urban context. So, what if instead of classifying individual parcels one were to broaden the scope and allocate value according to neighborhood context instead? Such a classification method could also take into account the different types of urban connectivity and resource pooling that occur as one moves up and down the urban density gradient.

Such a system does exist. It is known as the transect. The transect has a storied history in planning as it has been used as a tool to study the intersections between nature and the built environment. Over the years the tool has been reimagined as a regulatory apparatus that can provide a systematic methodology to the evaluation of local policy decisions.

A Planning Tool with a Rich History

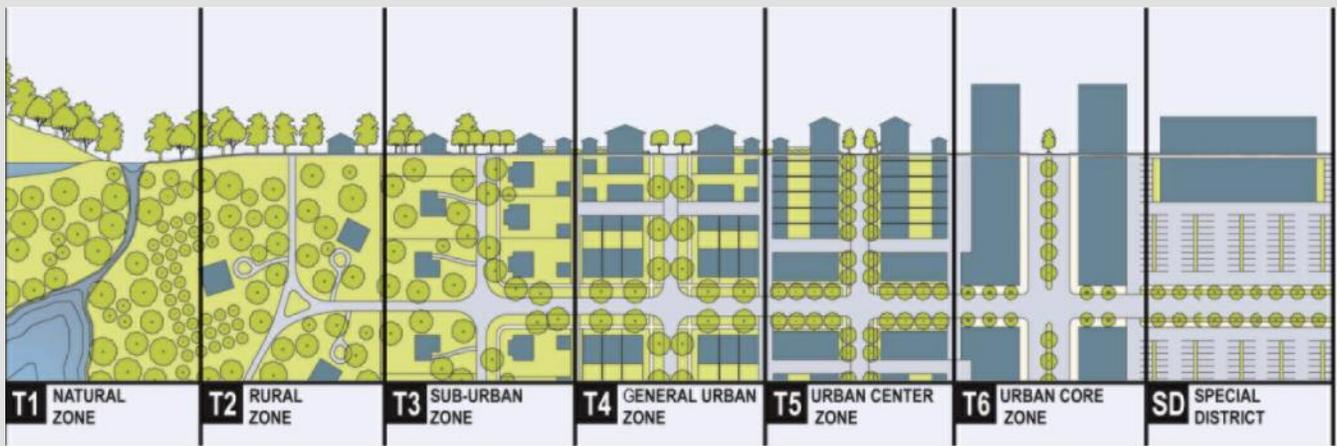
So what is a transect? A transect is a cut or path through a given environment, which essentially provides a snapshot of a range of different habitats. Although the transect has been popularized over the past 15-20 years by New Urbanist architects and developers, its history spans more than 200 years first emerging when a Prussian geographer by the name of Alexander von

Humboldt used a transect to diagram Patagonia from ocean to ocean. In the modern era this technique was further refined by Scottish planner Patrick Geddes who used a transect to show how ways of life emerged from their geographical context. The transect was also brought further into the realm of architecture and design when landscape architect Ian McHarg used the transect as an analytical tool in his seminal book *Design with Nature*.



The Valley Section, devised by Patrick Geddes, is an early example of the transect applied to human settlement patterns.

The visual power of the transect, in which complex ecological systems are broken down to their core, component parts, seems like a natural fit in a profession which arose out of a similar concern, namely breaking down the city into basic urban forms and typologies. Prior to the transect's use in city regulations, architect Christopher Alexander in his book *A Pattern Language* cataloged the entire built environment and broke them down into a collection of 253 discrete patterns. Traditional zoning was concerned about discerning urban patterns as well, but as the number of categories ballooned and land use become more rigid and



The Urban to Rural Transect is the dominant example of the transect approach applied to urban policymaking; courtesy of Duany Plater-Zyberk & Company.

separated, many urban planning professionals started becoming interested in alternative models, which could more fully capture the basic patterns and design principles cities needed to thrive. A new model could also signify a kind of “back to the basics” approach where city zoning regulations could harken back to the earliest zoning plans, which generally centered on a few broad and easily definable categories. Emily Talen, a professor at Arizona State University, has studied many of the earliest zoning codes in the nation and found that the general framework and guiding assumptions that went behind these early plans strongly resembled the modern codes that the transect framework produces today. The calls by some for a more simple and transparent land use coding process resulted in the first transect that was meant for use by local government officials: the rural to urban transect.

The SmartCode: The Transect as Land Use

The transect that planners are probably most familiar with is the rural to urban transect developed by Andrés Duany and his design firm DPZ. The rural to urban transect is generally split into six different zones, each zone representing one part of a larger urban continuum. The natural zone, classified as T1, is basically open wilderness with minimal human intrusion. In the T2 zone nature gives way to settled pastureland. Farmhouses, agricultural operations and country crossroads communities are generally the types of human development in this section. Zones T3 through T6 generally represent the range of development

opportunities available within the average city. The T3 zone is primarily low density residential with some mixed use adjacent to higher zones, whereas T4 is predominately mixed use, but the overall character of the neighborhood is still defined by residential properties. A number of commercial businesses will occur in the T4 zone, but they will primarily be local businesses, which serve the immediate neighborhood. The commercial main street of a small city or town would generally fall under the T5 zone and the T6 zone is basically the peak urban condition, the area of the city where density is at its highest. In short, a T5 district might be considered downtown Ocean Springs, Mississippi, whereas T6 is Canal Street in New Orleans.

The calls by some for a more simple and transparent land use coding process resulted in the first transect that was meant for use by local government officials: the rural to urban transect.

The classification schemes embodied within the rural to urban transect serve as the foundation for what is known as the Smartcode, a model municipal development ordinance created by DPZ. Developed in 2003, the Smartcode has been through several iterations over the course of its lifespan. As opposed to the use-based regulation model most cities follow, the Smartcode



Stormwater drainage pipe; courtesy of the Chesapeake Bay Program.

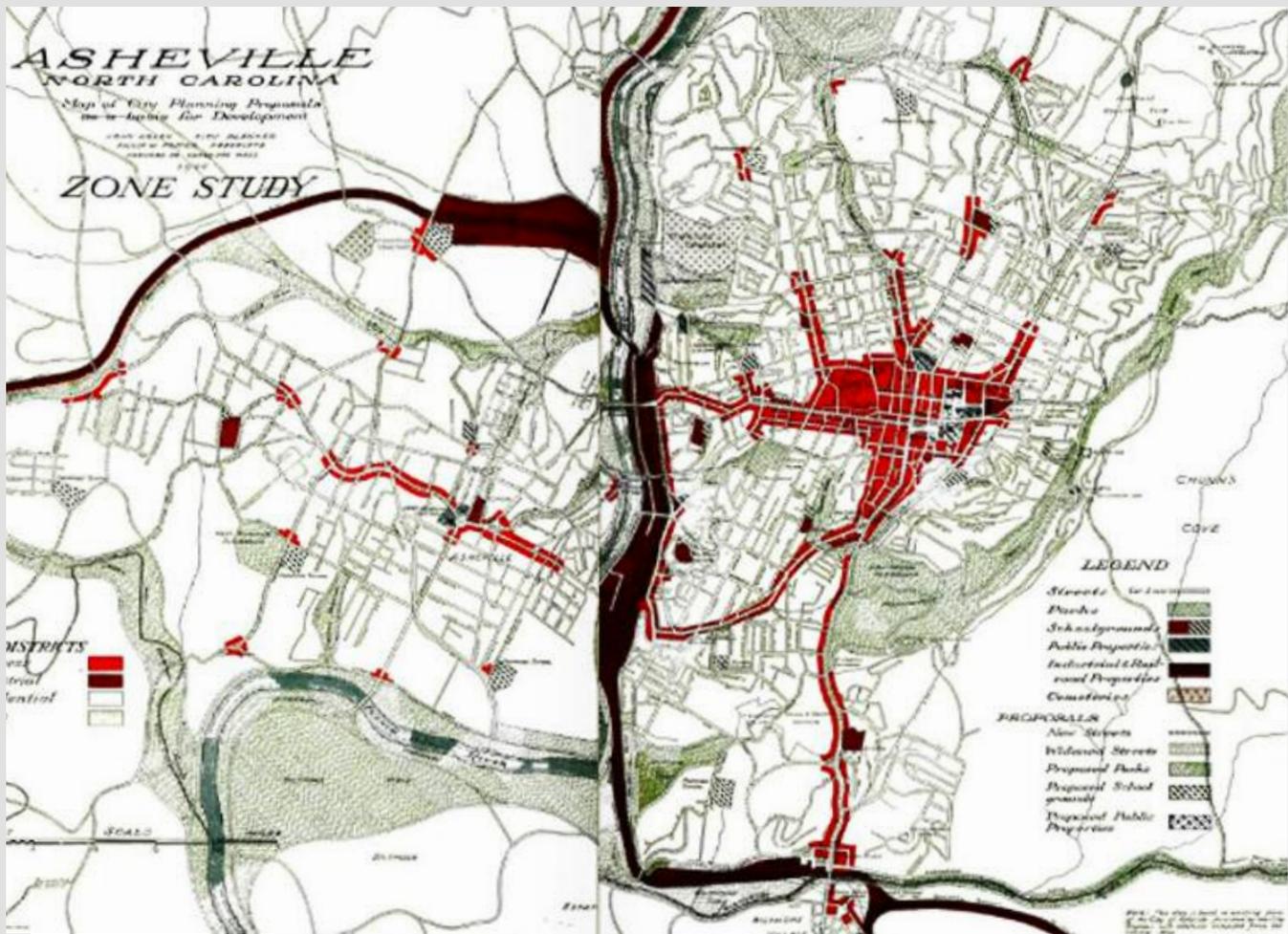
is centered on physical relationships and densities. Although city SmartCodes must be calibrated to reflect the unique architectural vernacular and historic character of an individual city, the basic T1 through T6 zone arrangement can be found throughout all SmartCodes. In some instances, the transect has been applied to smaller, neighborhood plans where cities can opt to apply smaller portions of the transect appropriate to that neighborhood's general composition.

The Applications of the Transect Beyond Planning

The transect is much more than another land use classification system. It is a mechanism that can be used to efficiently allocate resources according to basic urban thresholds and performance measures. An apt description of what the transect can achieve was given by Andrés Duany in the book *Landscape Urbanism and its Discontents*: “By integrating an environmental methodology for habitat assessment with a zoning methodology for urban,

the Transect breaks down the customary specialization, enabling environmentalists to consider the designs of the cultural habitats and urbanists to protect the natural ones.” In other words, it's a mechanism by which environmental policies in urban areas can recognize the cultural context in which they occur. There are many additional policy areas where a careful consideration of cultural resources must be given weight in order to give rise to the most optimal regulatory decisions. Take stormwater management, for example. In a dense urban area there may be no choice but to channelize a river, yet in a more rural area it becomes much more politically and economically feasible to preserve the natural riverway in its entirety.

Recognizing this, Tom Low, an architect with DPZ, created a Light Imprint Storm Drainage Matrix, which provides cities with a range of stormwater mitigation options that are grouped according to how appropriate they are for each portion of the Smartcode transect.



This image taken from John Nolan's City Plan for Asheville shows how early zoning plans generally opted for simple classification schemes of three or four different categories, which could come together to form large, contiguous districts; courtesy of the Cornell University Library Collections.

Within this stormwater management approach, there exists a sizable range of options available for mitigation in each urban district and many of the mitigation options are applicable in more than one district. This Matrix is just one example of the different supplementary modules available with the SmartCode. There are additional modules, which are calibrated to different areas of local policy expertise such as engineering, design, and environmental policy. There is even a module providing general guidance on local food systems and the types of food production that could be sustained in each transect zone. The value of such supplements is that they cut across the various departmental groupings and disciplines within city government in order to provide one guiding principle to all city decision making: that urban context is the fulcrum on which all city policy should rest.

A Transect for Green Infrastructure

The Smartcode does not represent the entirety of the transect approach. There are other examples of how this regulatory framework can be tweaked and modified to hone in on different policy concerns. An interesting example of the transect's potential for further modification is a model developed by two university professors known simply as the Green Infrastructure Transect. Building on previous models such as the rural to urban transect, the Green Infrastructure Transect is weighted more towards considering how urban context influences the optimal range of environmental solutions that cities can employ. The benefits of such an arrangement are summarized well from the following two points within Yaser Abunassr and Elizabeth Hamin's paper on the topic: "(2) the designation of urban zones as unique spatial contexts that may impact the adaptive capacity of communities within, and (3) the

explicit consideration that [green infrastructure] is an interconnected system that transcends administrative and political boundaries.”

Like the rural to urban transect, the model proposed here is divided into six distinct zones, which when taken together form a complete picture of the surrounding landscape. Unlike the rural to urban transect, density is not the primary sorting factor in the model. Rather, the model's categories are determined more by the region's natural surroundings. Since natural surroundings take higher precedence in the Green Infrastructure Transect, one of the zones that have been added to the equation is a coastal zone. For cities and counties where coastal concerns are an overriding factor in decision making, it makes sense to acknowledge this special relationship to the water by tweaking the transect to reflect the regulatory concerns that relate to development along an open shoreline. The other zones generally mirror those found in other transect-based documents such as the Smartcode. But again, the focus is on visual cues indicating the type of natural communities that are present, such as the existing configurations of pervious and impervious surfaces in the area and how they affect the shape and form natural open space takes. By understanding the natural connectivity that exists within and across different transect zones; policy officials are better able to prescribe variable green infrastructure policies and combinations that take advantage of environmental and cultural resources that exist within a particular neighborhood grouping.

While this model does have certain advantages over the Smartcode, its discussion here is intended more to show the transect's potential for further refinement and adaptation. If a transect zone can be logically connected to the larger urban geographies at play, it should be deemed worthy of inclusion in a transect-based policy document. Although it is important to build off of existing transect tools such as the Smartcode and Green Infrastructure Transect, planners who are considering utilizing this model should be mindful that the transect is not a deterministic model, but rather a kind of visual shorthand for understanding the complicated social and economic arrangements that make up a city.

Conclusion

By focusing on neighborhood context rather than specific parcel characteristics, a transect provides the

planning community with a broader framework for understanding how a city operates. This framework can also apply to other city agencies and departments who can use urban density and context as a way of properly allotting city services and infrastructure needs. As a regulatory apparatus, it also has the added benefit of adaptability, since it can be broken down into smaller components for inclusion into a small area master plan or it can incorporate new elements reflective of a unique geographic asset or feature, which has a direct impact on the urban form of the area.

While the SmartCode and its subsequent updates exert heavy influence on transect-based policy models it is clear that there are also thinkers who are continuing to refine the transect for other policy purposes, such as green infrastructure. With this in mind, the transect should not be viewed as a single, unitary tool but rather as a kind of programming language for planners, which can be calibrated to unique local circumstances and situations in the same way that zoning is applied today. 🦋

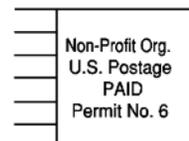
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Endnotes

1. Foundation For Louisiana, *The Citizen's Guide to Land Use*.
2. Center for Applied Transect Studies, *The Transect*.
3. Benjamin Grant, *Grand Reductions: 10 Diagrams That Changed City Planning*, *The Urbanist*, (Nov. 9, 2012).
4. Witold Rybczynski, *Do You See a Pattern?*, *Slate*, (Dec. 2, 2009).
5. Congress4NewUrbanism, *CNU 20 – The Misunderstood Transect: Theory vs., Practice in New Urbanist Codes*, Youtube, (May 30, 2012).
6. Glenn Pape, *Understanding the Urban Transect*, MSU Extension, (April 20, 2015).
7. David Moffat, *New Urbanism's Smart Code*, *Places Journal*, (2004).
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