Complete Streets Narrative for Susquehanna Township

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I. Introduction to the Proposed Complete Streets Ordinance

The current system of roadways caters to only one mode of transportation, motor vehicles. Pedestrian foot traffic or bicycle usage is a mere side thought, if considered at all. In some cases, even traveling short, easily walked distances requires driving because there are no accommodations for anything but vehicles. This proposed ordinance is an update to the Susquehanna Township Streets and Sidewalks Ordinance. It proposes to update current roadways, transforming them into complete streets. This is accomplished by amending the current Streets and Sidewalk Ordinance to include requirements for the construction of new roadways to include any applicable complete streets amenities such as bicycle lanes and sidewalks. Additional complete streets features include stormwater management systems, ecofriendly lighting, and abundant crossings for both bicycles and foot traffic. This proposed ordinance also applies to current roadways. When current roadways are receiving maintenance, they are to be updated to include complete streets provisions. This proposed ordinance does not demand a total overhaul overnight. Instead, the goal of this proposed ordinance is a slow yet steady progression away from the vehicle-centric roadways of old and into a new age dominated by complete streets.

Complete streets are designed with all modes of transportation in mind. They cater to everything from motor vehicles to bicycles to pedestrian foot traffic. Complete streets are not simply a one-size-fits-all system. Consideration must be given to the community and surrounding area of the street to determine what that individual street needs. This, of course, must be done for each and every street in the Township. This proposed ordinance will modernize

current roadway designs to bring them out of the stone age and promote clean, efficient, and alternative transportation in Susquehanna Township. Streets will no longer be useful for only motor vehicles, but instead will be inclusive for all modes of transportation. With the inclusion of sidewalks and bicycle lanes, the citizens in the Township will be encouraged to engage in more outdoor physical activity. The addition of sidewalks and bicycle lanes can also connect areas that would otherwise be inaccessible on foot or bicycle. An example of this would be access under a highway overpass like I-81 which currently only allows traversal via motor vehicle. For persons who do not have a vehicle readily accessible, complete streets provide an easier way to get to work, school, or wherever life brings them. The proposed ordinance also encourages the lessening of motor vehicle usage. Fewer vehicles on the road means less emissions spewing into the atmosphere. On a more personal note, complete streets can save the citizens of Susquehanna Township money on gas and wear and tear of their vehicles while also providing exercise and fresh air. Generally speaking, complete streets are an all-around positive step forward in the right direction. Section II explains the problem at issue, starting with a brief history of roadways in the United States. Section III will discuss why the current ordinance is suboptimal and would greatly benefit from a complete streets policy. Section IV explores solutions implemented by other jurisdictions. Section V explains recommendations for implementing a complete streets policy. Section VI concludes and summarizes all the points made herein.

II. Problems with the Current Roadway System

This section discusses the problem to be redressed by the proposed ordinance. It explores a short history of the roadway network and how it has progressed through the years. This section

will then demonstrate how the proposed ordinance will revolutionize the way citizens use roadways.

Looking back before the inception of motor vehicles in modern society, a roadway system had already been established.[1] The design, fairly standard for that time period, consisted of narrow dirt or gravel roads that followed the flow of the land.[2] Very few roads were paved prior to the 1900s.[3] Advancements in roadway design can be separated into distinct eras, each influenced by different factors of ideals, supplies, and policy.[4] Simply put, the roadway designs of the past were shaped by what was valuable and necessary at the time. As times change, so too have roadway designs. In colonial America, roadway only needed to facilitate wagons and were designed as a compliment to transportation via waterway, which was already established.[5] The purpose of these roads was to connect places outside the reach of waterways.[6]

Jumping ahead in time, the introduction of the postal service became a driving force for increased roadway construction.[7] Land purchases generated funding for the federal government to continue construction of even more roadways.[8] The construction of the "National Road," which was built to span the distance between the Potomac River and the Ohio River, marked another turning point in U.S. roadway construction.[9] The year was 1806, and it saw the end of federal government roadway construction, but issued in a new age of state funded roadway

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[1] National Research Council et al., Assessing and Managing the Ecological Impacts of Paved Roads 38 (2005).
[2] Id.
[3] Id.
[4] Id.
[5] Id.
[6] Id. at 38-39.
[7] Id. at 39.
[8] Id.
[9] Id.

construction.[10] Local governments oversaw most of the construction "from the 1830s to the 1920s."[11] Improvements to the roadways began in the late 1800s due to an increase in bicycle and vehicle usage.[12] These first improvements involved "oiling of the naturally surfaced roads" which was followed by paving.[13] Paving was done sparsely prior to World War I, but afterward such improvements became much more prolific. With the introduction of the Federal-Aid Highway Program, the U.S. government became reinvested in roadway construction.[14] Note that this program still supports highways today. However, local governments have played a leading role since the 1960s.[15] Intercity highways saw limited construction from the 1930s to the 1950s, but it was not until 1956 that a national freeway system plan was put into motion.[16] The purpose was to serve the needs of everything from standard motor vehicles to the transportation of tanks.[17] The system was deemed completed in 1990, only to be expanded if a state were to build a roadway themselves and petition to have it added to the interstate highway system.[18] In 1991 the Intermodal Surface Transportation Efficiency Act sought to revitalize investment in roadways and improve the efficiency and interconnectedness.[19]

Today, there are approximately over four million miles of roadways stretching all across the United States.[20] The majority of roadways consists of two-lane highways and the remainder

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[10] Id.
[11] Id.
[12] Id.
[13] Id.
[14] Id. at 39-40.
[15] Id. at 40.
[16] Id.
[17] Id.
[18] Id.
[19] Id. at 40, 119.
[20] Id. at 41.

contain urban and rural roads.[21] Between 1987 and 1997, roadways expanded very slowly at only a 0.2% increase per year.[22] The vast majority of expansion has come from a widening of the roads.[23] The dominant mode of transportation for the everyday citizen is the motor vehicle in its various forms.[24] Data from 2015 shows that nearly 3.1 trillion vehicles miles were traveled.[25] For reference, a vehicle traveling one mile equals one vehicle mile.[26]

Recall that the construction and maintenance of current roadways are handled by local governments. To that end, many local governments have taken it upon themselves to consider the very problem addressed by this proposed ordinance. A few of those propositions from other jurisdictions will be considered later in this writing. For now, it is enough to keep in mind that while the United States as a whole is entwined in a vast system of interconnected roadways, the majority of those roadways are managed by local governments. It is those local governments, just like Susquehanna Township, that hold the key to challenging current roadway designs. By each local government doing its part to solve this problem, what could be seen as a nationwide conundrum becomes a small, manageable issue.

Susquehanna Township is estimated to have approximately 25,000 residents as of 2018.[27] Like many United States residents, they travel the roadways that have been designed primarily for use by motor vehicles. There are 132 miles of roadway in Susquehanna Township which

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[21] Id.
[22] Id.
[23] Id.
[24] Scope of the U.S. Highway Network, Am. Road & Transp. Builders Ass'n, https://www.artba.org/government-affairs/policy-statements/highways-policy/ (last visited Oct. 10, 2019).
[25] Id.
[26] National Research Council et al., *supra* note 1 at 39 n.1.
[27] United States Census Bureau, https://www.census.gov/quickfacts/susquehannatownshipdauphincountypennsylvania, (last visited Nov. 17, 2019).

includes 23.4 miles of state roadways.[28] On those roads from 2012 to 2016, there have been 1,151 accidents resulting in 514 injuries and nine fatalities.[29] Areas with higher levels of traffic saw the most accidents.[30] Linglestown Road and Progress Avenue have both seen an uptick in bicycle and foot traffic for nearby residential areas.[31]

To put it simply, the problem is that current roadways have been designed for motor vehicles without a second though for anything else. Foot traffic, non-motorized wheeled traffic, and other modes of transportation are disregarded entirely. Consider a scenario where a man named Franklin lives across the street and about a block or so over from the Giant grocery store on Linglestown Road and he needs more frozen pizza for him and his roommate to share. The current roadway system would require him to get in his car and drive less than a minute to the store, causing extra emissions and wasted gas. Of course, once the pizza has been purchased, he must drive all the way back again. With a Complete Street system, Franklin could walk on the sidewalk or ride his bicycle in the bike lane to and from the store before the oven finishes preheating. Not only has Franklin saved money on gas and avoided spewing unnecessary emissions, he has started to work off those frozen pizza calories. This example illustrates a problem with the current roadway system, namely that roads designed only for cars creates a system where traveling minute distances is an incredibly arduous task.[32] What could have been a short, zero emission walk or bike ride is currently a wasteful, pointless drive. Consider another scenario involving ten people who work in the same office building. Using the current roadway

[28] Susquehanna Township, Dauphin Cty, Sustainable Susquehanna 2030 Comprehensive Plan, 54 (2019).
[29] Id. at 55.
[30] Id.
[31] Id. at 21-22.
[32] Lancaster Cty. Planning Comm'n, Lancaster Cty. Transp. Coordinating Comm. with Lancaster Gen. Health & Lancaster Cty. Coal. for Smart Growth, Lancaster County Complete Streets Guidebook 3-4 (2015).

system, for each of these ten people the most convenient way to get to work is to drive themselves. This means ten individual cars of various sizes and emissions taking up space on an already busy road. Alternatively, with a public transportation system in place each of these ten people plus many others can call fit into one bus and ride to a bus stop close to their work together. Ten individual cars each causing their own emissions becomes one bus. Implementing a complete street system means a reduction in motor vehicles clogging the roadways, cleaner air due to a reduction in emissions, and better transportation alternatives for all users.[33]

Imagine a family who wants to go to the local park to engage in the timeless activity of duck feeding and bicycle riding. The weather is perfect for spending the day outside, but unfortunately for this family, the road to the park has no sidewalk and no bike lane. Since the road was not designed for bicyclists to ride, it is unlikely that the family would be able to get to the park safely. Unfortunately, the family has to drive their car with their bicycles strapped to the back to the park, even though the park would only be a short ride away. If this family lived on a complete street, they could have used the bike lane to ride to the park and enjoyed a terrific summer day instead of being cooped up in the car. A complete street would have been safe for bicycle and foot travel, inspired more physical activity, and kept another car off the road.[34]

III. Rationale as to Why the Current Ordinance Should be Revised

The problem with the current municipal ordinance is less about what is inside and more about what is missing. The construction requirements for streets and sidewalks can be found in Chapter 21 of the Susquehanna Township Municipal Code.[35] The regulations for streets and sidewalks include a permit application for anyone not working for the township to cut into or

[33] Id.
[34] Id. at 4.
[35] Township of Susquehanna, Pa., Code § 21.

excavate a public street, the erection of utility poles, and the manner in which work is to be completed.[36] There are also sections on snow and ice removal, sidewalk maintenance requirements, and a statement of appropriate safety measures to be taken when working on roadways.[37] Also included is a section discussing street dedication.[38] However, even a cursory reading will show that there are no sections which mandate any specific street design requirements.[39] Design standards have been included in the Subdivision and Land Development section of the code, but these are for review purposes by the Board of Commissioners and Planning Commission when evaluating applications for subdivision and land development.[40] Furthermore, this section directs proposals to incorporate plans that have been adopted by Susquehanna Township as well as conform to transportation plans that have been implemented by law.[41] In short, any changes made to the Streets and Sidewalks ordinance will be reflected in the Subdivision and Land Development ordinance because the latter must conform with the former. Since no design elements can be found in Chapter 21 of the code, an update is required. The inclusion of a complete streets initiative in the Streets and Sidewalks ordinance would result in a shift from purely automobile centric street design to a more open system designed to accommodate all modes of transportation.

Why are the current laws not adequate to address the problem? Because they do not address the problem at all. The current Streets and Sidewalks ordinance does not make any mention of complete streets or their implementation. The ordinance does not require crosswalks and sidewalks for foot traffic. The ordinance does not require bicycle lanes. The ordinance does

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[36] Id.
[37] Id.
[38] Id.
[39] Id.
[40] Township of Susquehanna, Pa., Code § 22-501(1).
[41] Township of Susquehanna, Pa., Code § 22-502(1)(A).

not require roadways to be constructed with the needs of the community in mind. The current system is stuck in the old mindset of roadway construction. While it does not prevent the construction of complete streets, it does not promote their implementation either. This proposed ordinance will allow for the construction of the roadways of the future, designed to fit every need, and accessible by everyone with people from all walks of life.

Of course, not everyone is onboard with this new direction in street design. Glenn Orin, Deputy Director of Montgomery County in Washington D.C., has expressed his concerns.[42] He postures that complete streets should not be imposed in city environments and should instead be limited to urban environments.[43] Mr. Orin claims that areas with a high volume of traffic would be harmed by complete streets due to the focus shifting from motor vehicles to bicycles and foot traffic. He proposes that commercial areas would not benefit from complete streets in the way as urban areas would benefit because there are not the same needs for pedestrian amenities.[44] Mr. Orin also points to costs as a detracting factor.[45] "Executive staff" is estimating costs to be around $175.3 million for transportation improvements.[46] In an analysis piece about the proposed complete streets project, Mr. Orin has argued that if the road in question were to have a bridge built over it for pedestrians, the cost goes down by $11.2 million.[47] That is not a mistake. The argument really is that cost will go down if a walkway bridge was constructed instead of a pedestrian crossing. Another complaint is that travel time for motor vehicles will be slowed by as

[42] David Cranor, Complete streets are too expensive and too hard on drivers, a top Montgomery County Council staffer says, Greater Greater Washington (Mar. 4, 2019), https://ggwash.org/view/71137/moco-deputy-director-says-complete-streets-are-too-expensive-and-too-hard-on-drivers.
[43] Id.
[44] Id.
[45] Id.
[46] Id.
[47] Id.

much as an entire two minutes at certain points.[48] The counter to this point is that while travel time for motor vehicles might increase by an entire couple of minutes, safety for all travelers also increases.[49] Opponents of complete streets propose roadways designed for faster travel speeds with more and wider lanes.[50] The counter point to this idea is that deaths are occurring on a regular basis because of stubborn refusal to view these streets in a perspective that benefits non-motorized vehicle travel, effectively choosing speed instead of safety.[51]

On the other hand, there are those that believe complete streets are the way of the future. Counselor Darrell O'Quinn stated that the passage of a complete streets ordinance saw proclamations that this was "a historic moment for Birmingham."[52] He mentioned that "[g]reat neighborhoods are built on great relationships."[53] Since relationships are often formed on sidewalks, incorporating a complete streets policy would make the formation of relationships even easier.[54] Mr. O'Quinn also made note that while complete streets will be created in as many places as possible, not every single street will become a complete street.[55] Of course, this will take time since implementation will occur if the committee deems it appropriate when a street is receiving maintenance.[56] During a public hearing on the ordinance, one citizen mentioned how riding his bicycle will feel much safer.[57] Now he and his wife can ride together without

[48] Id.
[49] Id.
[50] Id.
[51] Id.
[52] Birmingham City Council, Birmingham City Council passes Complete Streets ordinance, Medium (Mar. 6, 2018), https://medium.com/@bhamcitycouncil/birmingham-city-council-passes-complete-streets-ordinance-e1699f743163.
[53] Id.
[54] Id.
[55] Id.
[56] Id.
[57] Id.

"'spending an hour trying to convince her she won't be run over.'"[58] Additional comments were made regarding the safety of those who walk or ride bicycles on a regular basis in their daily lives, stating that those who do not have a "collective voice" will benefit greatly from this ordinance.[59]

A small point to consider, while thinking about those who have spoken for or against complete streets, is that the people in places where these streets will be applied who actually walk or ride a bicycle on a regular basis are in favor of this new policy. People simply want to feel safe and secure when they travel. Increasing the speed limit and adding more lanes will not make such travel safer. Instead an impassible sea of wheeled demise will effectively cut off access for those on foot or bicycle from something as simple as the other side of the street. In such cases, a handful of yards may as well be miles of ocean. On the other hand, the inclusion of a complete streets policy will close that distance and create an interconnected network of transportation for everyone, the likes of which have never been seen before.

IV. Solutions from Other Jurisdictions

One of the best ways to find solutions is to look to the works of others. Their successes to be replicated and their setbacks to be avoided. This section will explore the ordinances and policies passed in other jurisdictions to discover what works well and what does not in an effort to gain a better look at the big picture solutions that have already been implemented.

Kansas City Missouri enacted Resolution No. 110069 back in 2011.[60] This resolution was the introduction of "'Livable Streets'" and was designed to promote the use of walking or

[58] Id.
[59] Id.
[60] Kansas City, Mo., Res. No. 110069.

bicycle riding as alternative modes of transportation.[61] The goal was also to create an environment that would promote physical activity.[62] Safety was also an important point as the needs of everyone from walkers to bus riders to children to those of advanced age were considered.[63] Fast forward to 2017, Kansas City passed an ordinance known as the "Complete Streets Ordinance."[64] This ordinance was the complete package. It mandated the development of a transportation system that included complete streets features such as walking and bicycle riding, stormwater management, green infrastructure, and even lighting.[65] Sidewalks are required to be included on all city owned roadways.[66] The prioritized areas for this ordinance was "low and moderate-income neighborhoods, neighborhoods with poor health outcomes, and neighborhoods with diminished access to transportation options."[67] An emphasis was placed on incorporating design elements to promote walking or bicycle riding instead of driving.[68] Since this act is so new, there is very little data with which to gauge its success. However, Kansas City seems to be moving forward with further implementation of complete streets.[69] The city was able to fund projects in 40 areas via funding through a grant from the Mid-America Regional

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[61] Id.
[62] Id.
[63] Id.
[64] Complete Streets: Safe Access for All, City of Kansas City, Missouri, https://www.kcmo.gov/city-hall/departments/public-works/complete-streets-ordinance (last visited Oct. 6, 2019).
[65] Kansas City, Mo., Code § 64-41.
[66] Id.
[67] Id.
[68] Kansas City, Mo., Code § 64-46.
[69] Kera Mashek, Kansas City aiming to create more 'complete streets' in Midtown, fox14kc (Aug. 21, 2018, 5:32 PM), https://fox4kc.com/2018/08/21/kansas-city-aiming-to-create-more-complete-streets-in-midtown/.

Council.[70] There have been reports that local citizens are in favor of continued implementation of complete streets as a means to "help move the city forward."[71]

New Jersey has also seen the adoption of complete streets policies. In fact, the earliest municipality in New Jersey to enact a complete streets policy was the Township of Montclair in 2009.[72] In total, there have been 159 municipalities and 8 counties in New Jersey that have implemented complete streets policies.[73] For example, the Township of Meridian has incentivized the implementation of complete streets wherever possible.[74] The ordinance is a bit vague on what exactly it wants to create other than access to all modes of transportation in a safe environment.[75] There is also a lack of any form of enforcement measures should inclusion of complete streets fail to occur. Another example from The Township of Livingston has its main focus on walking and bicycle riding amenities.[76] Again there is passive language about encouraging and promoting complete streets, but no active requirements for actual implementation.[77]

Birmingham, Alabama, has recently passed its own complete streets ordinance.[78] In fact, the ordinance is so new that is has not yet been codified. When it is codified, it will be an amendment to Title 4, Chapter 5 which will see "a new article 'L'" included in the 'Streets and

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[70] Id.
[71] Id.
[72] Complete Streets In NJ, New Jersey Bicycle and Pedestrian Resource, http://njbikeped.org/complete-streets-2/ (last updated Aug. 5, 2019).
[73] Id.
[74] Township of Meridian, N.J., Code § 58-38.
[75] Township of Meridian, N.J., Code § 58-38(1).
[76] Township of Livingston, N.J., Code § 274-66(A).
[77] Township of Livingston, N.J., Code § 274-68.
[78] JHDaniel, Birmingham's Complete Streets ordinance passes, Bham Now (Mar. 9, 2018), https://bhamnow.com/2018/03/09/birmingham-complete-streets-ordinance/.

Sidewalks' portion of the city code.[79] The ordinance highlights "13% of households . . . do not have access to a car" as one if its main points as well as the need for an "improved public transportation system."[80] The city also plans to partner with a company to provide rentable bicycles across the city.[81] The plan is to include the complete streets design to all roadway projects.[82] Routine upkeep such as sweeping and pothole repair is not included in this requirement.[83] Note that these are requirements, not suggestions for consideration, for all city owned roadways. Privately owned roadways are not required to take part in this endeavor, but instead are encouraged to participate.[84] Certain streets are to be given a priority status and must be updated to Complete Street status without exception.[85] A "Complete Streets Advisory Committee" is to be formed consisting of at least 19 members from various disciplines to oversee the project.[86] Members will consist of those appointed by the Mayor and City Council as well as a representative from numerous interested committees and organizations.[87]

The City of Birmingham's complete streets policy is a much stronger ordinance than the previous ones considered. The active language, requiring the implementation of complete streets ensures that the project will be completed. The problem with the passive language of some ordinances, like the ones from New Jersey, is the lack of requirement. Mere suggestions are easily ignored, which has a limiting effect on the effectiveness of such ordinances. Birmingham's ordinance will see the successful implementation of complete streets because they

[79] Birmingham, Al., Ordinance incorporating a Complete Streets policy.
[80] Id.
[81] Id.
[82] Id.
[83] Id.
[84] Id.
[85] Id.
[86] Id.
[87] Id.

have laid out a specific, comprehensive plan to see it through. This is an excellent ordinance to use as a resource when creating a complete streets ordinance.

Ultimately, the most promising complete streets policies come from Los Angeles and New York City. Each has their own comprehensive guides for ease of readability and application. To begin, we consider Los Angeles. The policy behind the design is to create streets that are accommodating for all users.[88] Sidewalks are designed to enhance the experience of the user by allowing for a safe place to travel and providing a pleasing environment.[89] This is achieved in part through the use of trees and other foliage along with proper lighting.[90] Lighting also serves to provide safely and security at nighttime.[91] Stormwater management is also an important aspect of complete streets design in Los Angeles. Plants are used at strategic water runoff sites to reduce the load on the cities drainage system.[92] This has the added benefit of reducing the amount of pollution associated with urban areas that ends up in natural water sources.[93] Bicycle lanes are naturally an important addition as they provide a safe lane for bicycle travel.[94] Dedicated bicycle lanes also allow for riders to travel at a fitting rate of speed as opposed to trying to keep up with vehicle traffic.[95] Roads that have undergone dieting (a narrowing of the roadway) are excellent opportunities to install bicycle lanes.[96] Parking

[88] City of Los Angeles, Complete Streets Design Guide, 4.
[89] Id. at 57.
[90] Id. at 73, 97.
[91] Id. at 97.
[92] Id. at 78.
[93] Id.
[94] Id. at 120.
[95] Id.
[96] Id.

amenities for bicycles are included as a compliment to the bicycle lanes by providing riders a safe place to lock their bicycles when not in use.[97]

Turning to New York City, we find similarities in their complete streets design. The main focus was safety of all travelers.[98] Pedestrian crossings were added where they would be most effectively utilized.[99] Bicycle lanes were also included and clearly labeled so everyone would have a clear understanding of who belongs in what lane.[100] Road dieting was also employed where needed to make room for complete streets amenities without widening the road further.[101] Overall, the goal was to make bicyclists and pedestrians more visible to avoid accidents.[102] On the vehicle traffic side, the streets were redesigned to be more simple and easy to follow which also reduced the risk of accidents.[103] The results from this plan are a glowing example of success and are discussed a bit later in this writing.

All this planning of updating roadways for the modern era comes with concerns of the use of eminent domain. Understandably, property owners might not feel thrilled at the idea of losing any portion of their land under any circumstance. This question was raised regarding the expansion of certain streets in Massachusetts.[104] The road in question was planned to be widened by eight feet which would encroach upon lands with houses already situated close to the road.[105]

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[97] Id. at 87.
[98] New York Department of Transportation, Making Safer Streets, 8 (2013).
[99] Id. at 11.
[100] Id. at 13.
[101] Id. at 25.
[102] Id. at 8.
[103] Id.
[104] Kristin Palpini, Egremont eyes 'complete streets' roadwork to widen 23/41, add sidewalks, bike lanes, The Berkshire Eagle (June 25, 2018, 5:30 PM), https://www.berkshireeagle.com/stories/egremont-eyes-complete-streets-roadwork-to-widen-2341-add-sidewalks-bike-lanes,543138.
[105] Id.

MassDOT was asked if eminent domain would be used to complete this project.[106] The response from a civil engineer working on the project was that the "goal [was] not to invoke eminent domain" because such actions slow the work down considerably.[107] Naturally, it baffles the mind where these designers plan to come up with eight extra feet to widen the road without the use of eminent domain. Nevertheless, the designer's intention was to avoid the use of eminent domain if possible. A New Jersey redevelopment plan was able to find 17 lots that could be updated without the use of eminent domain.[108] While it might not be off the table, so to speak, it would seem that several jurisdictions that have already begun to construct complete streets have done so without using eminent domain.

All this talk about how great complete streets are is nice, but are they as beneficial in real life as they are on paper? Fret not, for there is compelling data that shows the resounding success of complete streets policies. More than 1,500 policies implementing complete streets have been enacted nationwide.[109] This number includes policies adopted by the Commonwealth of Puerto Rico, the District of Columbia, as well as 33 state governments.[110] On a more detailed note, New York City has exciting data from 2013 regarding their complete streets.[111] Since 2001, a decline of 30% fatalities has been realized due to the implementation of complete streets.[112] In fact, it has

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[106] Id.
[107] Id.
[108] Michael Olohan, Hillsdale Council Moves on Zone Study; DMR Architects Looking at Redevelopment of 17 Lots, Pascack Press (Nov. 15, 2019), https://thepressgroup.net/hillsdale-council-moves-on-zone-study-dmr-architects-looking-at-redevelopment-of-17-lots/.
[109] Complete Streets policies nationwide, Smart Growth America, https://smartgrowthamerica.org/program/national-complete-streets-coalition/publications/policy-development/policy-atlas/ (last visited Oct. 18, 2019).
[110] Id.
[111] New York Department of Transportation, supra note 98, at 4.
[112] Id.

been estimated that 1,000 lives have been saved due to the improved street design.[113] This figure includes motorists, pedestrians, bicyclists.[114] A more detailed look at the data shows a range of between 12% and 88% percent reduction in accidents with injuries by considering each street individually.[115] This data was compiled by comparing the number of accidents with injuries from three year prior to the new street design with the number of accidents with injuries from two to three years after the street design was implemented.[116] According to the report, the streets with the most expensive redesigns saw the greatest reductions.[117] These streets were also the ones "most susceptible to safety reengineering" and had the higher accident rates generally.[118] Specific to bicyclists, there has been a decrease of 72% in risk.[119] Over 470 miles of bicycle lanes have been added, and the usage of bicycle travel has tripled.[120] On the opposite coast, Seattle Washington has its own complete street success story.[121] The road in question was deemed one of Seattle's most dangerous streets with 1,243 accidents which included 630 injuries plus two deaths in the three years prior to its redevelopment.[122] As a result of a road dieting upgrade, this street has seen a reduction in speeding by 95%, traveling time increased by one and a half minutes, a reduction in collisions by 14%, and injuries from walkers and bicyclists

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[113] Id.
[114] Id.
[115] Id. at 4, 6.
[116] Id. at 4.
[117] Id. at 7.
[118] Id,
[119] Id.
[120] Id.
[121] Cathy Tuttle, Rainier Safety Project Is a Home Run!, Seattle Neighborhood Greenways (May 9, 2016), http://seattlegreenways.org/blog/2016/05/09/rainier-safety-project-is-a-home-run/.
[122] Id.

decreased by 40%.[123] It truly is amazing that such fantastic results can come from something as small as redesigning roadways.

V. Recommendations for this Proposed Ordinance for Susquehanna Township

This section will discuss recommendations in an update to the current Streets and Sidewalks ordinance. It will also explore policy rationale as well as social, environmental, and economic benefits that spring from the adoption of a complete streets ordinance. To put it plainly, this proposal advises updating the current Streets and Sidewalks Ordinance to include a Part 4, which will contain a complete streets policy. The policy rational of this ordinance update is to design roads in a way that facilitates all viable transportation options, increase safety for all road users, and take environmental impact into consideration when conducting road maintenance or constructing new roads.

This proposal suggests that this ordinance be applied to new roads being constructed and current roads receiving maintenance or otherwise being worked on. The purpose for this is simple, to avoid excess and unnecessary costs. Roadways are already vast and expansive in today's modern society. Attempting to redesign the entire system in one fell swoop would be outrageously difficult at best.

One of the most important policy aspects of this complete streets proposal is safety. Mirroring the policies from New York City and Los Angeles, every update that increases safety is recommended. Examples of safety choices are dedicated bicycle lanes so bicyclists can stay off the vehicle lanes and travel at their own pace. Additionally, sidewalks should include crossing to allow easier traversal for pedestrians. Furthermore, proper lighting increases visibility

[123] Id.

and therefore safety for all travelers. Each of these recommendations are further elaborated on later in this writing.

The inclusion of complete streets in Susquehanna Township also comes with the benefit of increased promotion of outdoor physical activity as well as a reduction in emissions and less traffic. Recall that New York City saw bicycle travel triple through their implementation of complete streets. Walking or riding a bicycle to a desired destination is much harder to do when there is no sidewalk or bicycle lane to use. Giving citizens viable options to leave their vehicles at home is necessarily the first step to an active society. Short errands that once required driving distances well within walking or bicycle riding range can finally be traversed without such harsh measures. More walking and bicycle riding necessarily results in fewer vehicles spewing emissions on the street. Fewer vehicles on the road results in less traffic overall. To put it simply, a societal shift from driving everywhere to walking or bicycle riding has all the benefits of a more physically active society and fewer emissions from excess use of vehicles.

Naturally, the needs of the community must be considered when planning the adoption of a Complete Street. Complete streets can accommodate everything including vehicles, busses, bicycles, and foot traffic. However, if a particular area does not require all those amenities, there is no need to include them in the design for that particular street. Community feedback is recommended in this proposed ordinance to ascertain the exact needs of each individual area. Community involvement was an important component in both the New York and Los Angeles complete streets policies as well. There would be little reason in including bus lanes, for example, in a community where they are not needed. The idea is to get people excited about complete streets, thus including citizens in the decision-making process is a great way to promote involvement and enthusiasm in the project.

Road dieting is recommended in the proposed ordinance for a variety of reasons. First, a road diet is an option to increase safety. Fewer lanes means a decrease in the density of motor vehicles in a particular area. Second, a road diet may be necessary to facilitate the inclusion of sidewalks and bicycle lanes where needed. For example, if there is simply no room to expand a street outward for any number of reasons, a reduction in lanes for vehicles results in a positive space available for whatever complete streets amenity is needed for that street. Road dieting was a component in both the New York City and Los Angeles policies, and it seems to have benefitted them greatly. Therefore, it logically follows that for streets in Susquehanna Township that have excess space dedicated to vehicles lanes, road dieting would allow for the inclusion of the many complete streets amenities mentioned here without widening the road further. Naturally, this raises the question of adding additional lanes to accommodate more vehicles, would that not result in reduced traffic and shorter commute times? The simple answer is a resounding no. This illustrates the concept of "induced demand" which can be explained by the simple phrase: if you build it, they will come.[124] A research paper, published by the Transportation Research Record, explored this effect by examining various studies on the subject.[125] In short, the studies indicate that more lanes means in an increase in traffic, not a reduction.[126] Extra lanes do not create more room for current users. Instead they serve to invite new users to fill the space, thus resulting in more traffic than ever before. Another example can be seen in the Katy Freeway located in Houston, Texas.[127] This is a highway with "26 lanes at its

[124] Angie Schmitt, The Science Is Clear: More Highways Equals More Traffic. Why Are DOTs Still Ignoring It?, Streetsblog (June 21, 2017), https://usa.streetsblog.org/2017/06/21/the-science-is-clear-more-highways-equals-more-traffic-why-are-dots-still-ignoring-it/.
[125] Id.
[126] Id.
[127] Benjamin Schneider, CityLab University: Induced Demand, CityLab (Sept. 6, 2018), https://www.citylab.com/transportation/2018/09/citylab-university-induced-demand/569455/.

widest point."[128] Did this absurd example of road bloating result in less congestion? The answer is a resounding no.[129] In fact, all those extra lanes may have done more harm than good.[130] The trend seems to be thinking of vehicles like liquid, flowing in a street river.[131] However, a more accurate analogy would be in thinking of traffic like a gas which fills whatever container it inhabits.[132] Since adding so many extra lanes did nothing to limit traffic congestion, a slight reduction in lanes is unlikely to have adverse effects. Recall that lanes would not simply be reduced. Those former lanes would be turned into sidewalks, bicycle lanes, or bus lanes as alternative modes of transportation which encourage a reduction in vehicle usage from the outset.

In addition to adding space for various modes of transportation, there are environmental recommendations as well. This proposed ordinance suggests the use of a raingarden which serve to collect rainwater. These were also recommended in the Los Angeles complete streets policy. The purpose is to collect storm water is to take on part of the role played by drainage systems. The initial inch of rainfall is collected here and can either be absorbed into the ground, evaporated, or collected in storage units. This serves to both beautify the area with greenery and reduce strain on stormwater drains. Instead of relying on concrete and pipes to remove water from hazardous areas, the natural processes of plants will serve as an aid to stormwater management. To assist the local ecosystem, native plants should be used. This small addition will also create a haven for wildlife in the city. It is proposed that these raingardens be included in areas where stormwater is a safety hazard. The people of Susquehanna Township share the environment will all manner of animal and insect. Therefore, raingardens will have the additional

[128] Id.
[129] Id.
[130] Id.
[131] Id.
[132] Id.

benefit of providing a more natural environment for the citizens of the township to enjoy because of the natural beauty on display. Of course, providing a haven for the critters of the Susquehanna Township is a benefit as well.

Of course, no street could be complete without crosswalks. Nearly every current complete streets policy considered includes sections about crosswalks. The purpose is to allow the pedestrians of Susquehanna Township to cross the street and continue their journey. However, crosswalks are not as mundane and uninteresting as one might think. Consideration must be given to exactly how a crosswalk will be designed in any given setting. For example, in some places the crosswalk should be raised much like a speed bump. The purpose is identical to the speed bump, to reduce the speed of vehicles. This greatly increases safety because drivers will know to, at minimum, slow down in that section of the road to avoid the unpleasant experience of rocketing over a speed hump at an unruly rate of speed. Obviously, it is hoped that drivers will be paying attention to persons in the crosswalk, but if the worst happens, the vehicle should already be traveling at a much lower rate of speed, thus reducing injuries to the poor pedestrian. Other safety features can also be included to increase pedestrian safety including intersection signalization, overhead flashing beacons, and high intensity crosswalk signals. Curb ramps and tactile warnings should also be included as usual per federal accessibility guidelines.[133] Adequate lighting at the crosswalk is another point to consider. Specifics on lighting will be discussed in the following paragraph. It is important to remember that not all crosswalks need all the features listed. Some areas may greatly benefit from a raised crosswalk,

[133] Source lists specific requirements for new construction and alterations to ensure access by people covered by the ADA. Page 1-3 of U.S. Department of Justice, 2010 ADA Standards for Accessible Design (Sept. 15, 2010).

for example near a school, while others would not. It is up to the planners to decide what is best for every location.

Traveling anywhere can be extraordinarily difficult when visibility is hindered, that is why lighting is another important aspect to consider. Both New York City and Los Angeles considered lighting, and ecofriendly lighting, to be a significant factor to complete streets. This proposed ordinance recommends adequate lighting to be included at intersections and crosswalks where necessary. In order to save money on supplies and to further the eco-friendly design, it is recommended that lighting be motion activated where necessary and energy efficient lightbulbs must be used. In lieu of lighting in intersections or crosswalks where the pedestrian traffic is much lower, reflectors may be used instead. Regardless of which option is used, it is absolutely vital that crosswalks have at least some indication included in their design to warn drivers to be alert and avoid unnecessary injuries.

Parking needs are to include both on-street vehicle and bicycle parking. Regarding vehicles, in some areas parking may be exactly the same as it is now which is immediately adjacent to the curb. On streets where the speed limit is such that safety concerns are raised regarding bicyclists, the parking spots for vehicles should be pushed back from the curb to allow bicyclists to ride between the vehicles and the curb, thus increasing safety.

The question could be asked of enforcement policies. Namely, how is Susquehanna Township going to ensure motorists do not merely park their vehicles over the bike lane, blocking it entirely? The answer is simple, give them a parking ticket. The rules about adequate parking do not change with this ordinance, so enforcement measures should be conducted in the exact same manner as they have been. Ensuring adequate parking and safety for bicyclists go hand in hand.

A public awareness campaign is recommended in this proposed ordinance to keep the community informed and up to date on these new and exciting roadway designs. New Yok City and Los Angeles both considered community involvement to be an important inclusion in their respective policies. The concept of a Complete Street, while simple enough to understand for some, may be brand new to others. The goal is to encourage the public to use the new features of the Complete Street and generate excitement about the project as a whole. The good people of Susquehanna Township should be informed about the cost saving, health benefits, and social benefits that these new complete streets will enable.

The public awareness campaign might also include incentives to further facilitate public involvement. The public may participate in road modifications by providing feed back to the Township on what is needed for their communities. Community members who wish to sponsor a particular roadway modification or construction may receive a certificate of appreciation for their valued assistance in making the dream of complete streets a reality.

No plan of this magnitude would be complete without a method to pay for it. Thankfully, this complete streets policy should be considerably less expensive than others. In some areas, a simple repainting of the roadway lanes will suffice. Regular funds the Township has designated for roadway construction and modification purposes should be used for this project as well. It is important to only develop new and current streets as funding allows. Responsible finance decisions will keep progress steady, even if it is slow at times. Avoiding becoming overburdened by adopting too many projects at once is the goal. The roadways of Susquehanna Township are vast and numerous. Keep it simple, space it out.

The complete streets policies considered when crafting this proposed ordinance were remarkably similar regarding bicycle lanes, crossings, sidewalks, lighting, and just about

everything else. The only major policy difference between them was whether or not the ordinance was a requirement or a mere suggestion. Looking to areas like New York City which had fantastic data showing how successful complete streets are in increasing safety and usability for all, it seemed proper to strive to achieve similar goals as soon as possible. Therefore, this proposed ordinance is written as a requirement. It is believed that Susquehanna Township can see the same benefits that so many other municipalities have obtained through complete streets. Therefore, making this proposed ordinance a requirement will ensure that the transformative work of update the streets of the township will begin post haste. The sooner complete streets are brought to Susquehanna Township, the sooner its citizens can begin to enjoy them.

VI. Closing Thoughts on Complete Streets for Susquehanna Township

The current roadway system in Susquehanna Township, much like many other townships and cities across the United States, is outdated and counter intuitive for the needs of citizens. The current system largely ignores accommodations for bicycle riders and only incudes sidewalks as a bare minimum for those who are lucky enough to live near them. In many places, despite many desired destinations being well within walking or bicycle range, citizens must choose to either risk it on the edge of the road or drive the incredibly short distance. This, of course, assumes they have access to a vehicle in the first place. The needs of these people have been ignored for far too long. This proposed ordinance represents the next step in infrastructure excellence. With the inclusion of bicycle lanes and proper sidewalks, complimented by crosswalks, traveling by foot or bicycle becomes a much safer experience. Entire sections of land, such as those north and south of I-81, will no longer be cut off due to uncrossable roads. Implementation of complete streets should be included in regular roadway maintenance. Specific projects should be reasonably spaced out to avoid incurring too much expense too quickly. This is not a project that

can be completed overnight. The roadways all across the Township stretch far and wide. Converting them into complete streets will take time, effort, and expense. That is why this proposed ordinance should be enacted. The sooner the change is implemented, the sooner the positive benefits can be realized. The future of transportation is right around the corner. Will Susquehanna Township be ready?

Complete Streets Ordinance for Susquehanna Township

Complete Street Policy

ORDINANCE NO._____

AN ORDINANCE OF THE SUSQUEHANNA TOWNSHIP OF DAUPHIN COUNTY, PENNSYLVANIA, TO UPDATE CHAPTER 21 STREETS AND SIDEWALKS ORDINANCE TO BE NAMED THE COMPLETE STREET POLICY.

WHEREAS, This ordinance will update Susquehanna Township's Chapter 21 Streets and Sidewalks Ordinance to include a Part 4 Complete Street Policy; and

WHEREAS, The general purpose of this ordinance is to increase the comfort, safety, and access to non-motorized transportation options; and

WHEREAS, This ordinance will strengthen neighborhoods through proactive investments in multimodal connectivity[134] and create connected sidewalks throughout the township; and

WHEREAS, This ordinance will help protect our natural environment through a continued commitment to sustainable practices;[135] and

WHEREAS, This ordinance will reduce speeding and increase safety, for everyone using a roadway, by increasing signage, pavement markings, speed bumps/tables, road dieting; and

[134] Susquehanna Township, Dauphin Cty, Sustainable Susquehanna 2030 Comprehensive Plan, 7 (2019).
[135] Id at 7.

WHEREAS, This ordinance will improve road conditions by updating lighting, and reduce storm water on roads using raingardens; and

WHEREAS, This ordinance encourage residents to use non-motorized transportation, such as bicycling or walking to reduce emissions and air pollution; and

WHEREAS, This ordinance considers the environmental impact, short term and long term, of any and all construction work on the streets and sidewalks of this township in regard to materials and methods employed to complete any and all construction work; and

WHEREAS, This ordinance will be an example for other Government entities to observe and learn from to better create new Complete Street Policies; and

WHEREAS, This ordinance encourages communication and collaboration efforts with the surrounding townships and boroughs[136]; and

WHEREAS, This ordinance calls for Susquehanna Township to work with and listen to the community before, during and after implementation of the provisions contained in this ordinance to meet the needs of Susquehanna Township's residents.

NOW, THEREFORE, BE IT ENACTED AND ORDAINED by the authority of the BOARD of SUSQUEHANNA TOWNSHIP of DAUPHIN County, Pennsylvania.

Part 4 Complete Street Ordinance.

§ 23-400 Short Title.

1. This Part shall be known and may be cited as the Susquehanna Township Complete Street Policy Ordinance of 2019.[137]

[136] Idea from page 33 of Complete Streets local policy workbook. Smart Growth America. National Complete Streets Coalition.

§ 23-401 Legal Authority.

1. The Pennsylvania Municipalities Planning Code authorizes this ordinance under Article 1, Section 105,[138] Article 3, Section 301 a2,[139] 3,[140] and Section 302 a.[141]

§ 23-402 Definitions.

1. Arterial street – a major street or highway with fast or heavy traffic volumes of considerable continuity and used primarily as a traffic artery for intercommunications among large areas.[142]
2. Bicycle rack – an item of any shape used solely to secure a bicycle.
3. Board of Commissioners – the board of commissioners for Susquehanna Township, Dauphin County Pennsylvania.
4. Buffered Bicycle Lanes – conventional bicycle lanes paired with a designated buffer space separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane.[143]

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[137] Using formatting for entire ordinance including section number construction (23-400) from Susquehanna Township, Pa., Chapter 21 § 21-101-§ 21-307 (May 11, 1967).
[138] "to guide uses of land and structures, type and location of streets, public grounds and other facilitates . . . ." Pennsylvania Municipalities Planning Code Act of 1968, P.L. 805, No. 247 (17th ed. 2003).
[139] *Id.* "A plan for land use, which may include provisions for the amount, intensity, character and timing of land use proposed for . . . transit facilities . . . ."
[140] *Id*. "A plan for movement of people and goods, which may include expressways, highways, local street systems, parking facilities, pedestrian and bikeway systems, public transit routes . . . and other similar facilities or uses."
[141] *Id*. "The governing body may adopt and amend the comprehensive plan as a whole or in part."
[142] Township of Susquehanna, PA Municipal Code § 22-301.
[143] National Association of City Transportation Officials, Bike Lanes, NACTO, https://nacto.org/publication/urban-bikeway-design-guide/bike-lanes/

5. Collector street – a major street or highway which carries traffic from minor streets to the major system of arterial streets, including principal entrance streets of a residential, commercial or industrial development and streets for major circulation within such developments.[144]
6. Complete street – a street to be planned, designed, operated and maintained to safely accommodate users of all modes of transportation of all ages and abilities, including pedestrians, cyclists, transit users, and drivers.[145]
7. Contra-Flow Bicycle lane – a bicycle lane flowing in the opposite direction of motor vehicle traffic and is appropriate with one way streets.
8. Conventional Bicycle Lane – an exclusive space for bicyclists through the use of pavement markings and signage, located adjacent to motor vehicle travel lanes and flows in the same direction as motor vehicle traffic.[146]
9. Cul-de-sac – a minor street open at one end for vehicular and pedestrian access with the opposite end terminating in a vehicular turnaround.[147]
10. Curb cuts – the opening along the curb line at which point vehicles, pedestrians or bicycles may enter or leave the roadway or paved areas.[148]
11. FEMA – Federal Emergency Management Agency.
12. Left-Side Bicycle Lanes – conventional bicycle lanes placed on the left side of one-way streets or two-way median divided streets.[149]

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[144] Township of Susquehanna, PA Municipal Code § 22-301.
[145] Environmental Law Institute, Legal Pathways to Deep Decarbonization in the United States, 346 (Michael B. Gerrard & John C. Dernbach eds., 2019).
[146] National Association of City Transportation Officials, Bike Lanes, NACTO, https://nacto.org/publication/urban-bikeway-design-guide/bike-lanes/
[147] Township of Susquehanna, PA Municipal Code § 22-301.
[148] Id.

13. Limited access highway – a major street or highway which carries large volumes of traffic at comparatively high speed with access at designated points and not from abutting properties.[150]
14. Marginal access street – a minor street which is parallel and adjacent to limited access highways or arterial streets and which provides access to abutting properties and protection from through traffic.[151]
15. NACTO – the National Association of City Transportation Officials.[152]
16. Opened – indicates pavement or the road surface was cut or removed to access the ground or object beneath.
17. Priority Corridors – Include North Front Street, Linglestown Road, North 6th Street, Progress Avenue, Walnut Street and Union Deposit Road.[153]
18. Raingarden – An area in which storm water drains are elevated and indigenous plants are planted with porous materials, such as earth or small grade stone to collect the first inch of rainwater to be absorbed by the material and plants before the water level rises to the point where it spills into the storm water drain.
19. Refuge island – a waiting area on a street median that provides a safe space for pedestrians while crossing a wide street. [154]

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[149] National Association of City Transportation Officials, Bike Lanes, NACTO, https://nacto.org/publication/urban-bikeway-design-guide/bike-lanes/
[150] Township of Susquehanna, PA Municipal Code § 22-301.
[151] Id.
[152] National Association of City Transportation Officials, NACTO, NACTO, https://nacto.org/.
[153] Susquehanna Township, Dauphin Cty, Sustainable Susquehanna 2030 Comprehensive Plan, 18 (2019).
[154] City of Los Angeles, Complete Streets Design Guide https://planning.lacity.org/odocument/c9596f05-0f3a-4ada-93aa-e70bbde68b0b/Complete_Street_Design_Guide.pdf (last visited Oct. 9, 2019).

20. Road diet – an action of removing travel lanes from a roadway and utilizing the space for other uses and travel modes. This term may include a narrowing of the road depending on road width.[155]
21. Road modification – any cut, opening or construction conducted to the roadway or immediate area relating to the roadway.
22. Roadway – all paved paths which cars, people or nonmotorized transportation use, includes, major streets, minor streets and principal corridors.[156]
23. Street, major – includes arterial street, collector street and limited access highway.[157]
24. Street, minor – A street used primarily for access to abutting properties, includes marginal access street and cul-de-sac.[158]
25. Special population – people who have limited access to automobiles, such as children, older adults, people with disabilities and low-income individuals.[159]
26. Swale – a low-lying stretch of land which gathers or carries surface water runoff.[160]
27. The Township – The Township of Susquehanna, Dauphin County Pennsylvania.
28. Zoning Hearing Board – of Susquehanna Township, Dauphin County Pennsylvania.

§ 23-403 Requirement for roadway upgrade.

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[155] Keith Knapps et. al., U.S. Dept. of Transportation Federal Highway Administration, Road Diet Informational Guide, 3 (Report No. FHWA-SA-14-028 2014).
[156] Conference Report, Urban Street Symposium Conference Proceedings: Urban Roadway Classification: Before the Design Begins, https://nacto.org/docs/usdg/urban_roadway_classification_before_the_design_begins_forbes.pdf.
[157] Township of Susquehanna, PA Municipal Code § 22-301.
[158] Id.
[159] American Planning Association, Complete Streets: Best Policy and Implementation Practices, 6 (Barbara McCann & Suzanne Rynne eds., PAS Report 559 2010).
[160] Township of Susquehanna, PA Municipal Code § 19-202.

1. This Ordinance shall apply to any roadway which shall be opened or designated for repaving or road modification performed after the effective date of this section including any:
    a. existing roadways;
    b. new roadways planned or being planned; or
    c. any time a permit is required under § 21-201.
2. Exceptions:
    a. Exception to (1) If a roadway is not covered by this section the roadway may be upgraded with any of the options in this ordinance.
    b. Exception to (1)(c) for when the work to be done under the permit is:
        i. is needed to be done expeditiously for an emergency; or
        ii. is of a small scale financially or physically that the burden would be unfair.
3. A complete upgrade of the Township's streets to complete streets shall be achieved through a series of smaller improvements or maintenance activities over time. The Township has deference when determining which non-required provisions from this ordinance will be implemented on any existing road.[161]
    a. The Township will actively look for opportunities to repurpose rights-of-way to enhance connectivity for pedestrians, bicyclists and transit.[162]
    b. Susquehanna will require large new developments and redevelopment projects to provide interconnected street networks with small blocks.[163]
    c. This policy includes privately built roads intended for public use.

[161] Idea from Smart Growth America & National Complete Streets Coalition, Complete Streets local policy workbook, 23 (Stefanie Seskin ed., Updated 2013).
[162] *Id*. at 31, taken verbatim.
[163] *Id*. at 31, taken verbatim.

d. Compliance with this ordinance may be factored into decisions related to The Township's participation in private projects and whether the Township will accept possession of privately built roads constructed after the passage of this ordinance.[164]

4. The Township shall consider environmental impact their work will have on the immediate area while performing road modification on roadways, sidewalks or structures abutting the roadway and as per the Township's best judgement act accordingly.
5. The Township shall evaluate a communities' needs and identify options in this ordinance to use that are necessary for the community before implementing any option in this ordinance through looking at the following factors and other factors which are not listed but necessary as determined by the Board of Commissioners:
    a. zoning requirements;
    b. gross house hold income;
    c. estimated future use of non-motorized transportation;
    d. average age of residents; and
    e. total number of residents.
6. The Township may hire or employ professionals as needed in the appropriate field to help in part or whole, to implement, design, engineer, poll, collect data, research or construct any or all that this ordinance requires or suggests.

§ 23-404 Requirements for roadway classification.

1. All roadways within § 23-403 not meeting a listed exception shall be classified into principal corridors, major streets and minor streets by the Board of Commissioners. If the

[164] *Id*. at 33, uses general idea and some language verbatim.

Board of Commissioners determines a roadway does not fall within these categories the roadway shall require a minimum of two options to be implemented. The Board of Commissioners shall determine if more options than the minimum number are required. Options shall be required and determined by roadway classification as follows:

a. Principal corridors shall have a minimum number of options determined by the Board of Commissioners.
b. Major streets:
    i. Arterial streets shall have a minimum of four options.
    ii. Collector streets shall have a minimum of five options.
    iii. Limited access highway shall have a minimum of three options.
c. Minor streets:
    i. Marginal access street shall have a minimum of five options.
    ii. Cul-de-sac shall have a minimum of five options.

§ 23-405 Options for a Complete Street.

1. Any roadway included in this ordinance may comply with the following provisions unless specified or required otherwise:
    a. Sidewalks. Sidewalks may meet standards set forth by NACTO or in Susquehanna Township Code Chapter 21 Part one and two and shall include:
        i. Sidewalks shall be a minimum width of five feet for pedestrian to travel on. The minimum width shall increase by at least three feet if a business building abuts the sidewalk. The minimum width shall increase by at least three feet if there will be features listed in paragraph ‘iii’. Where possible

sidewalks shall be on both sides of the streets. Sidewalks shall not have large gaps to impede wheel chairs or pedestrians. [165]

ii. Curb cuts shall be installed where deemed necessary upon planning the street.

iii. Sidewalks shall be permitted to have the following nonexhaustive list of items placed or installed by the Township and kept on or removed from the sidewalk at the Township's discretion:

1. lighting fixtures;
2. parking meters;
3. bus shelters;
4. trash can;
5. recycling container;
6. bus stop structure;
7. bicycle rack;
8. electric car charging station;
9. bicycle lane;
10. plants, trees, vegetation or a combination;
11. raingarden;
12. private property
13. benches.

[165] National Association of City Transportation Officials, Sidewalks, NACTO, https://nacto.org/publication/urban-street-design-guide/street-design-elements/sidewalks/#footnotes

b. Road dieting will be conducted on stretches of road that are to be deemed required by the Township. The following shall apply:

    1. A road diet will include a reduction of lanes. Typical reductions are from four lanes down to three lanes; or from three lanes down to two lanes.[166]
    2. The Township shall consider the following factors on when to implement a road diet:
        a. driveway density;
        b. transit routes;
        c. the number and design of intersections along the corridor;
        d. operational characteristics;
        e. roadway function;
        f. access control;
        g. turning volumes;
        h. crash type;
        i. crash patterns;
        j. pedestrian activity;
        k. bicycle activity;
        l. right-of-way availability; and
        m. cost.[167]

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[166] Keith Knapps et. al., U.S. Dept. of Transportation Federal Highway Administration, Road Diet Informational Guide, 7 (Report No. FHWA-SA-14-028 2014).
[167] *Id*.

3. If a road diet is implemented and a lane is removed, the removed lane shall be repurposed.

c. Intersections and crossings. Crosswalks shall comply with the Pennsylvania Department of Transportation requirements.[168] Intersections and crossings shall have two classifications with separate sets of requirements:

i. Intersections and crossings with at least one major street shall include:

1. Pedestrian crossings at intersections shall have the continental striping pattern and be as wide as required by Federal or State regulations.
2. Refuge islands or curb extensions shall be installed on a corner with a major street or if the street has three or more lanes.[169]
3. Pedestrian signalization may include simple walk or do not walk lights, overhead flashing beacons or high-intensity activated crosswalk signals.
4. Reflective pavement markings indicated a cross walk is ahead.

ii. Intersections and crossings of only minor streets shall include:

1. Pedestrian crossings at intersections shall have the continental striping pattern and be as wide as required by Federal or State regulations.

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[168] Wendy Kelley, PE, Pennoni, Inc. Crosswalk Pavement Marking Standards (PennDot LTAP technical Information Sheet #193 2019).

[169] Page 161-64 of the City of Los Angeles, Complete Streets Design Guide https://planning.lacity.org/odocument/c9596f05-0f3a-4ada-93aa-e70bbde68b0b/Complete_Street_Design_Guide.pdf (last visited Oct. 9, 2019).

2. Curb ramps or tactile warning strips per Federal accessibility guidelines.[170] The township may opt for advance yield markings which appear 50 feet in advance of cross walks.[171]
3. Raised crosswalks, a speed bump or speed table may be installed 10 feet before a crosswalk and painted white. If installed, a speed bump or table must be maximum height of five inches.
4. Accessible pedestrian signals shall be installed if a special population exists and is in need of a signal indicating through audible tones, or a vibrating surface.[172]

d. Permeable surfaces shall be installed on shoulders of roads or in parking lots above or immediately surrounding an area which is known to flood. Known flood areas will be determined by Susquehanna Township or through a FEMA flood insurance rate map.

e. Special population. In Susquehanna Township if there are any special populations that require a specific need for the specific population's neighborhood in which they reside, those needs will be considered when this ordinance is applicable. The community may be polled before any provision of this ordinance is enacted to receive feedback which may be considered by the Susquehanna Zoning Board or construction personnel working on a roadway.

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[170] Source lists specific requirements for new construction and alterations to ensure access by people covered by the ADA. Page 1-3 of U.S. Department of Justice, 2010 ADA Standards for Accessible Design (Sept. 15, 2010).
[171] Page 161-64 of the City of Los Angeles, Complete Streets Design Guide https://planning.lacity.org/odocument/c9596f05-0f3a-4ada-93aa-e70bbde68b0b/Complete_Street_Design_Guide.pdf (last visited Oct. 9, 2019).
[172] *Id*. at 200.

f. Pavement markers. The speed limit shall be painted onto the road surface where speeding is an issue. Old pavement markers shall be refreshed, cleaned or repainted during road modifications.

g. Bicycle lanes may be installed on roadways where space provides. Bicycle lanes may include conventional bicycle lanes, buffered bicycle lanes, contra-flow bicycle lanes or left-sided bicycle lanes. If a bicycle lane is on the street all grating shall be installed perpendicular to the direction the bicycle lane to prevent bicycle tires from entering the grating. Pavement markings, signage and specific details shall follow guidelines set by the NACTO, Federal or State regulations and:

    i. be adjusted as necessary by the Zoning Hearing Board or Board of Commissioners:
    ii. indicate the bicycle lane;
    iii. remind drivers to slow down;
    iv. indicate the bicycle lane is for bicycles only; and
    v. include direction of travel for the bicycle lane.

h. Parking. The Township may move on street parking appropriately to allow for the construction of bicycle lanes between parked cars and the sidewalk.

i. Storm water management. The Township shall include one or more of the following while satisfying Susquehanna Township Code Chapter 19:

    i. permeable surfaces under paragraph (d);
    ii. install swales;

iii. install raingardens to collect storm water to be absorbed into the ground, evaporate or collected in storage units;[173] and

iv. plant trees, vegetation or plants.

j. Lighting. The Township shall install light fixtures and replace light bulbs in existing light fixtures with the most energy efficient bulb the Township can reasonably acquire at intersections and crosswalks. Lighting may be motion activated.

k. Bus lanes. Bus lanes are required if the transit system is operating heavily on that roadway.[174] Transit-specific facilities, such as bus shelters, are not required in places where there is not an existing or planned transit service.[175]

§ 23-406 Administrative Agency oversight.

1. This Complete Street Policy shall be overseen by the Susquehanna Board of Commissioners.

§ 23-407 Public Awareness Campaign.

1. The Township shall include the community's needs while implementing this Ordinance by:

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[173] Stormwater Management, City of Lancaster, https://cityoflancasterpa.com/stormwater-management/ (last visited Oct. 9, 2019).
[174] Page 147 of City of Los Angeles, Complete Streets Design Guide https://planning.lacity.org/odocument/c9596f05-0f3a-4ada-93aa-e70bbde68b0b/Complete_Street_Design_Guide.pdf (last visited Oct. 9, 2019).
[175] Smart Growth America & National Complete Streets Coalition, Complete Streets local policy workbook, 24 (Stefanie Seskin ed., Updated 2013).

a. Displaying the plans for the roadway improvement in the Township building for a week; or

b. Discuss the roadway improvements at meeting of the Board of Commissioners which is open to the public and include notice in the local newspaper or on local radio.

2. Progress of each roadway project under this ordinance shall be documented and will be compiled by the Board of Commissioners, or to whomever they designate the task, to be released to the public. The Board of Commissioners shall determine how to measure and document progress of each roadway project.

3. Temporary signs and banners shall be placed before and after for at each project which implement this ordinance. The temporary signs and banners shall be placed at least two weeks before and remain after for a minimum for 30 days. The temporary signs and banners shall include information or a place to view the following information:

    a. state and recommend the options of walking, biking, and non-motorized transportation compared to driving;

    b. state the health benefits of subsection (a);

    c. state that this street is now a Complete Street;

    d. define, “Complete Street”;

    e. state that this is the public awareness campaign;

    f. state community participation is important;

    g. list other Complete Streets within The Township;

    h. state social benefits of a Complete Street; and

i. state financial benefits for the community and each individual of using alternative transportation.

§ 23-408 Progress.

1. To measure progress Susquehanna Township shall record and report the following data on a yearly basis:
    a. length of bicycle lanes installed;
    b. number of roadways updated under this ordinance;
    c. provide a map showing existing sidewalks and bicycle lanes;
    d. number of light fixtures replaced;
    e. number of energy efficient light bulbs installed;
    f. traffic count on roadways updated under this ordinance;
    g. number of bicycles using bicycle lanes installed in the previous year;
    h. other data Susquehanna Township deems important to track progress and inform the community of the work being completed.

§ 23-409 Financial.

1. The Complete Street Policy shall be paid for by Susquehanna Township using regular funds and liquid fuels money provided for roadway modification or construction.
2. The Township may seek Federal and State transportation funds in the form of grants or loans.
3. The Township may develop as many street projects as possible in an affordable, balanced, responsible and equitable way that accommodates and encourages travel by

motorists, bicyclists, public transit vehicles and their passengers, and pedestrians of all ages and abilities.[176]

§ 23-410 Disclaimer.

1. Any provision in this ordinance shall not be implemented if:
    a. The cost of providing accommodation are excessively disproportionate to the need or probable use;[177] or
    b. The existing and planned population, employment densities, traffic volumes, or level of transit service around a particular roadway as documented by the County Planning Department is so low that future expected users of the roadway will not include pedestrians, public transportation, freight vehicles, or bicyclists.[178]

§ 23-411 Severability.

1. It is declared to be the intention of the Board of Commissioners that the provisions of this ordinance are severable. If any provision of this ordinance is declared unconstitutional, illegal or otherwise invalid by the judgment or decree of a court of competent jurisdiction, that invalidity shall not affect any of the remaining provisions of this ordinance.[179]

§ 23-412 Repeals.

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[176] Language taken verbatim from Smart Growth America & National Complete Streets Coalition, Complete Streets local policy workbook, 21 (Stefanie Seskin ed., Updated 2013).
[177] *Id*. at 26, taken verbatim.
[178] *Id*. at 26, taken verbatim.
[179] Language taken almost verbatim (changed plurals and added word ordinance) from Susquehanna Township, Pa., Adopting Ordinance NO. 89-16 (Nov. 21, 1989).

1. This ordinance is to work in tangent with the rest of Susquehanna Township's code, however, if there is a conflict with Susquehanna Township Code, this ordinance will prevail and the code in conflict will be repealed or rendered void.

§ 23-413 Effective Date.

1. The Complete Street Policy shall take effect in 90 days after being passed.