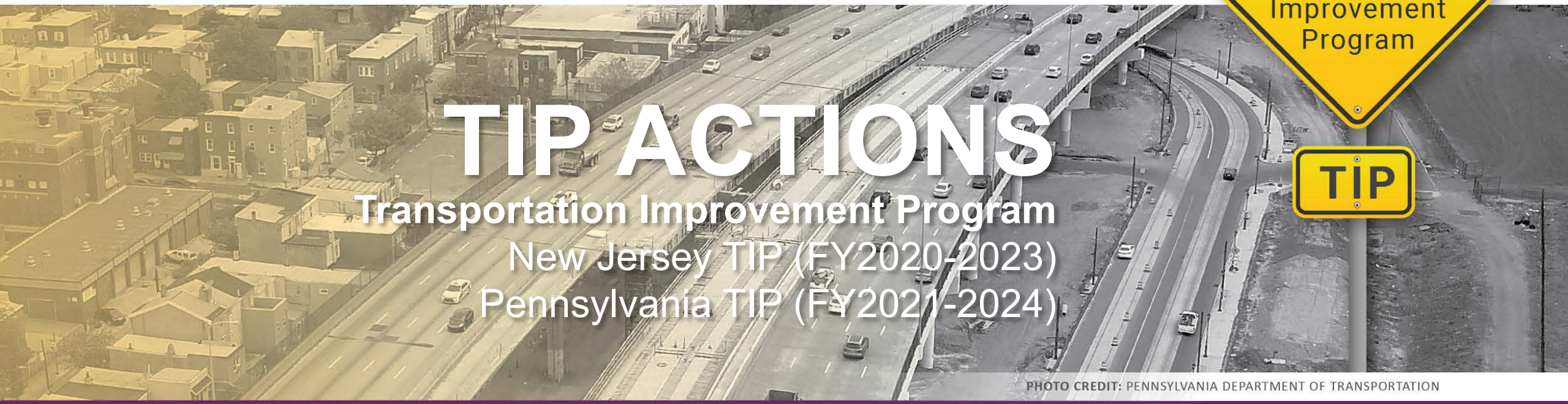


TIP ACTIONS

Transportation Improvement Program

New Jersey TIP (FY2020-2023)

Pennsylvania TIP (FY2021-2024)

PHOTO CREDIT: PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

DVRPC RTC | June 2021

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

ADA Ramps

Various Counties | Remove Funding

- **TIP Amendment**
- **Action:** Remove CON phases in amount of $15,382,000 STU/ Toll Credit from the TIP for 2 ADA projects.
- **Reason:** Projects were Let for construction, fully funded, and regularly authorized under previous FY2019 TIP. The FY2021 TIP programmed funding is no longer needed and will return to the region.
- **Background:**
  - *ADA Ramps 2020 Bucks and Montgomery Counties from $7,956,000 STU/ Toll Credit to $0*
  - *2019 Philadelphia ADA Ramps from $7,426,000 STU/ Toll Credit to $0*

dvrpc | TIP for PA

TIP ACTION | Proposed - PA

Request RTC Recommendation of TIP Amendment

- **ADA Ramps**
  Remove CON phases in amount of $15,382,000 STU/Toll Credit from the TIP for 2 ADA projects:
  - ADA Ramps 2020 Bucks and Montgomery Counties from $7,956,000 STU/Toll Credit to $0
  - 2019 Philadelphia ADA Ramps from $7,426,000 STU/ Toll Credit to $0

dvrpc

PA 309 Connector: Allentown Road to Souderton Pike (HT2)

Montgomery County | Increase CON Funding in 1st Four Years

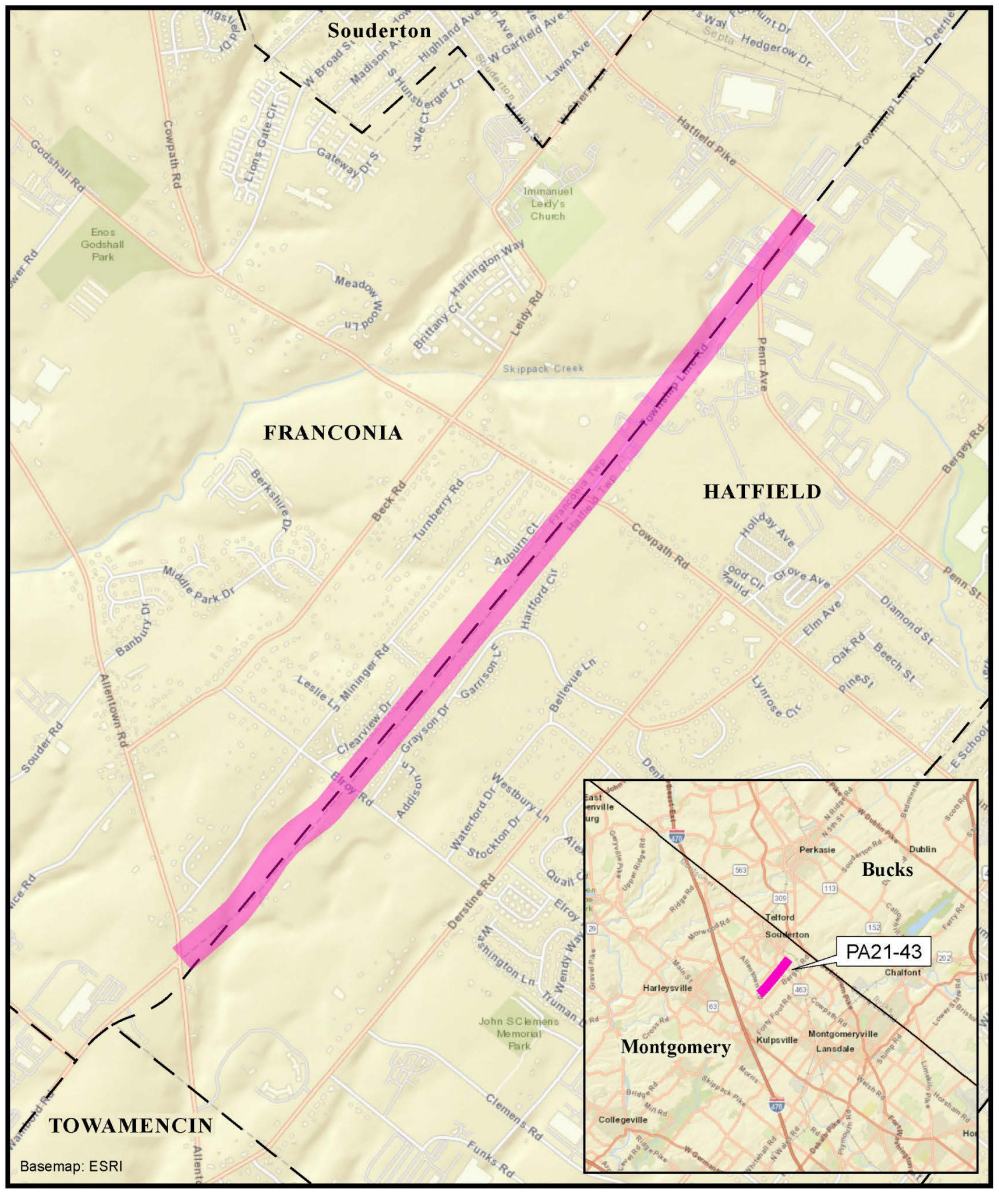
- **TIP Amendment**
- **Action:** Increase CON phase by $6,250,000 in 1st Four Years of TIP accordingly:

  FY21: Increase $6,200,000 STU/$1,550,000 State 581;
  FY22: Increase $1,200,000 STU/$300,000 State 581; and
  FY26: Decrease $2,400,000 STU/$600,000 State 581.

- **Action:** Replace ineligible NHPP funding with STU/STP/State 581 funding
- **Reason:** NHPP funding is not eligible for this project and the projects needs to be reprogrammed

dvrpc | TIP for PA

PA21-43: PA 309 Connector:
Allentown Road to Souderton Pike (HT2)



CON phase includes increased costs for:

- Noise walls
- Increased length of multi-use path
- Stormwater & soil management
- Retaining wall and culvert costs
- Add'l ITS facilities
- Temp signals along detour route

dvrpc | TIP for PA

PA 309 Connector: Allentown Road to Souderton Pike (HT2)

Montgomery County | Increase CON Funding in 1st Four Years

- **Background:**
  - *PA 309 Connector Project is intended to create an improved connection between PA 63 and PA 309*
  - *Phase 1 is complete.*
  - *Phase 2 (HT2) in final design and CON anticipated to begin late summer 2021.*
  - *Phase 3 (HT3) scheduled to be Let for CON in December 2026.*

dvrpc | TIP for PA

TIP ACTION | Proposed - PA

Request RTC Recommendation of TIP Amendment

PA 309 Connector: Allentown Road to Souderton Pike (HT2)

1) Increase CON phase by $6,250,000 in 1st Four Years
FY21: Increase $6,200,000 STU/$1,550,000 State 581;
FY22: Increase $1,200,000 STU/$300,000 State 581; and
FY26: Decrease $2,400,000 STU/$600,000 State 581.

2) Reprogram $9,662,000 of CON phase accordingly as project not eligible for NHPP funding:
FY22: Remove $1,442000 NHPP;
FY23: Remove $4,993,000 NHPP/$127,000 State 581;
FY24: Remove $2,993,000 NHPP; and
FY25: Remove $86,000 NHPP/$21,000 State 581.

And Adding $4,779,000 STP/$4,735,000 STU/$148,000 State 581:
FY22: Adding $1,949,000 STP/$86,000 STU/$148,000 State 581;
FY23: Adding $2,830,000 STP/$1,656,000 STU; and
FY24: Adding $2,993,000 STU.

dvrpc

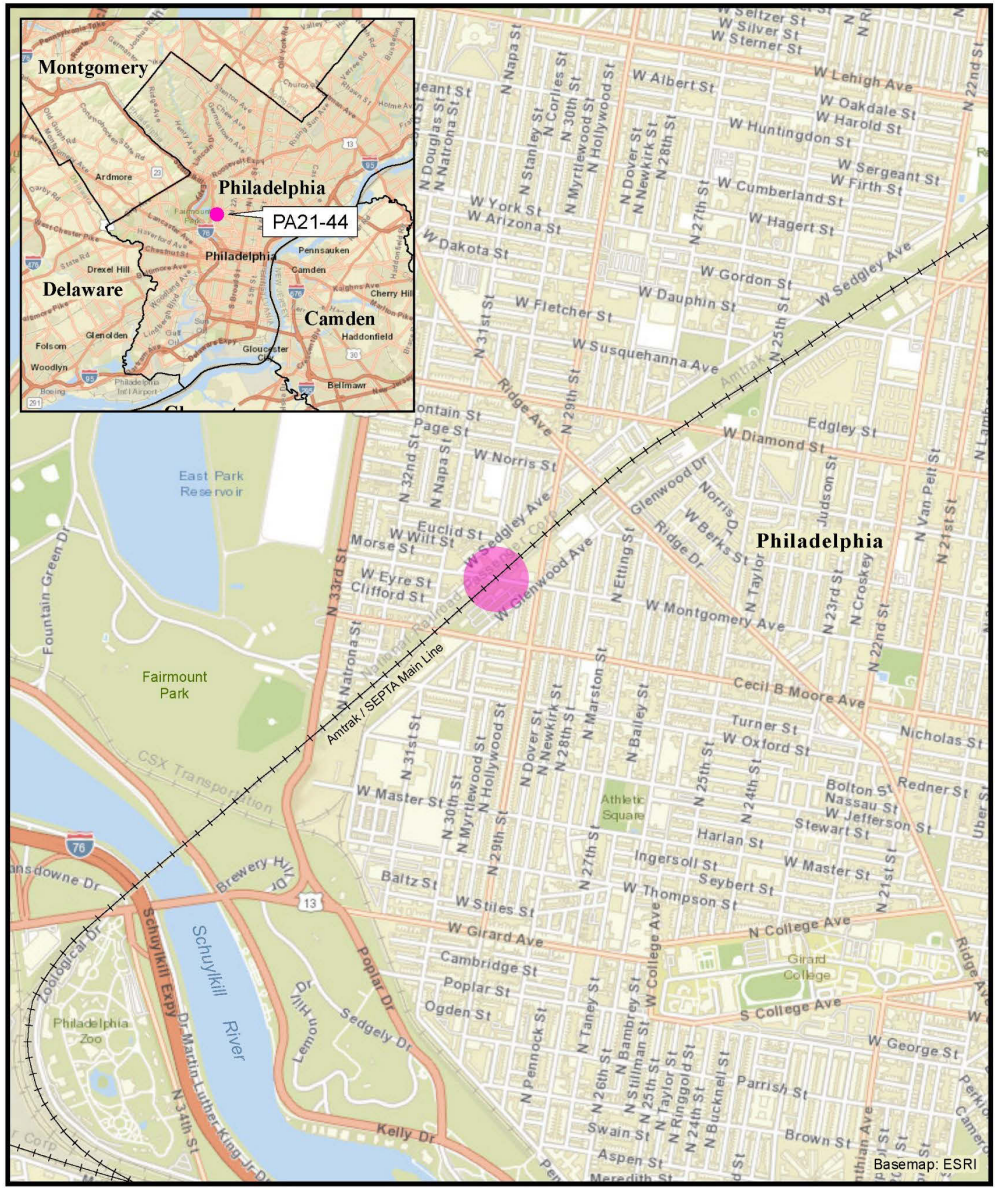
Montgomery Avenue Bridge over Amtrak at 30th Street (CB)

City of Philadelphia | Increase CON Funding in 1st Four Years

- **TIP Amendment**
- **Action:** Increase CON phase in 1st Four Years of TIP by advancing CON funding in FY21 and FY22 by $4,900,000, and add a prev. obligated UTL phase back into TIP in amount of $980,000. CON phase will be reduced by $4,900,000 in LFY25.
- **Reason:** The project's PS&E came in and project is scheduled to Let July 2021
- **Background:**
  - *Overall cost increase is $980,000*

dvrpc | TIP for PA

PA21-44: Montgomery Avenue Bridge over Amtrak at 30th Street (CB)



For complete reconstruction of five-span bridge over Amtrak's Northeast Corridor to a single-span bridge.

dvrpc | TIP for PA

TIP ACTION | Proposed - PA

Request RTC Recommendation of TIP Amendment

- **Montgomery Avenue Bridge over Amtrak at 30th Street (CB)**

  Increase CON phase by $4,900,000:
  FY21: Adding $1,098,000 STU/$862,000 BOF/
  $368,000 State 183/$122,000 Local;
  FY22: Adding $1,075,000 STU/$885,000 BOF/
  $368,000 State 183/$122,000 LOC;

  Add previously obligated UTL phase back into TIP in the amount of $980,000 ($784,000 BOF/$147,000 State 183/$49,000 LOC) in FY21; and

  Reduce CON phase by $4,900,000 ($3,887,000 STU/ $33,000 BOF/ $735,000 State 183/$245,000 LOC) in LFY25.

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Mattson Road over the West Branch of the Chester Creek

Delaware County | Accept New Project into TIP

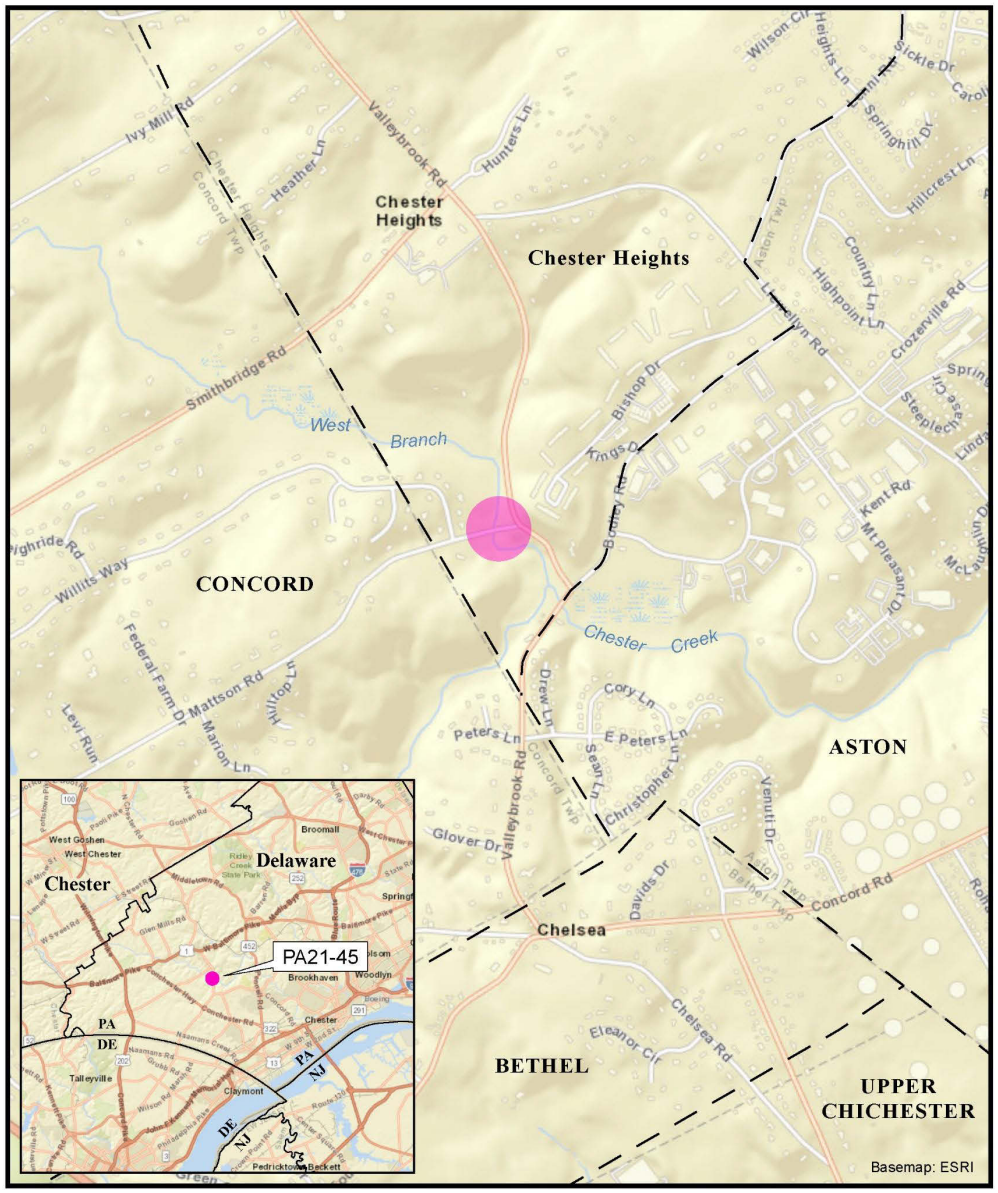
- **TIP Amendment**
- **Action:** Accept new $2,000,000 sSTP project into TIP for FY21 by programming the following phases:

  PE ($350,000 sSTP) in FY21;
  FD ($300,000 sSTP) in FY22;
  ROW ($20,000 sSTP) in FY22;
  UTL ($15,000 sSTP) in FY22; and
  CON ($1,112,000 sSTP) in FY22 and ($203,000 sSTP) in FY23.

- **Reason:** Replace Mattson Road over the West Branch of the Chester Creek bridge using discretionary sSTP funds from $5 Registration Fee revenues
- **Background:**
  - *These are add'l funds to region made available by PennDOT to PA Counties that implemented $5 registration fee that was a component of the PA Act 89 funding structure*
  - *This funding opportunity is no longer available due to funds now being spent out on this program*

dvrpc | TIP for PA

PA21-45: Mattson Road over the
West Branch of the Chester Creek



Bridge rehabilitation or replacement of Mattson Road bridge over West Branch of the Chester Creek in Chester Heights Borough, Delaware County.

dvrpc | TIP for PA

TIP ACTION | Proposed - PA

Request RTC Recommendation of TIP Amendment

- **Mattson Road over the West Branch of the Chester Creek**
  Accept new $2,000,000 sSTP project

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Moredon Road Bridge (CB #44) (Act 13)

Montgomery County | Add New Project to TIP

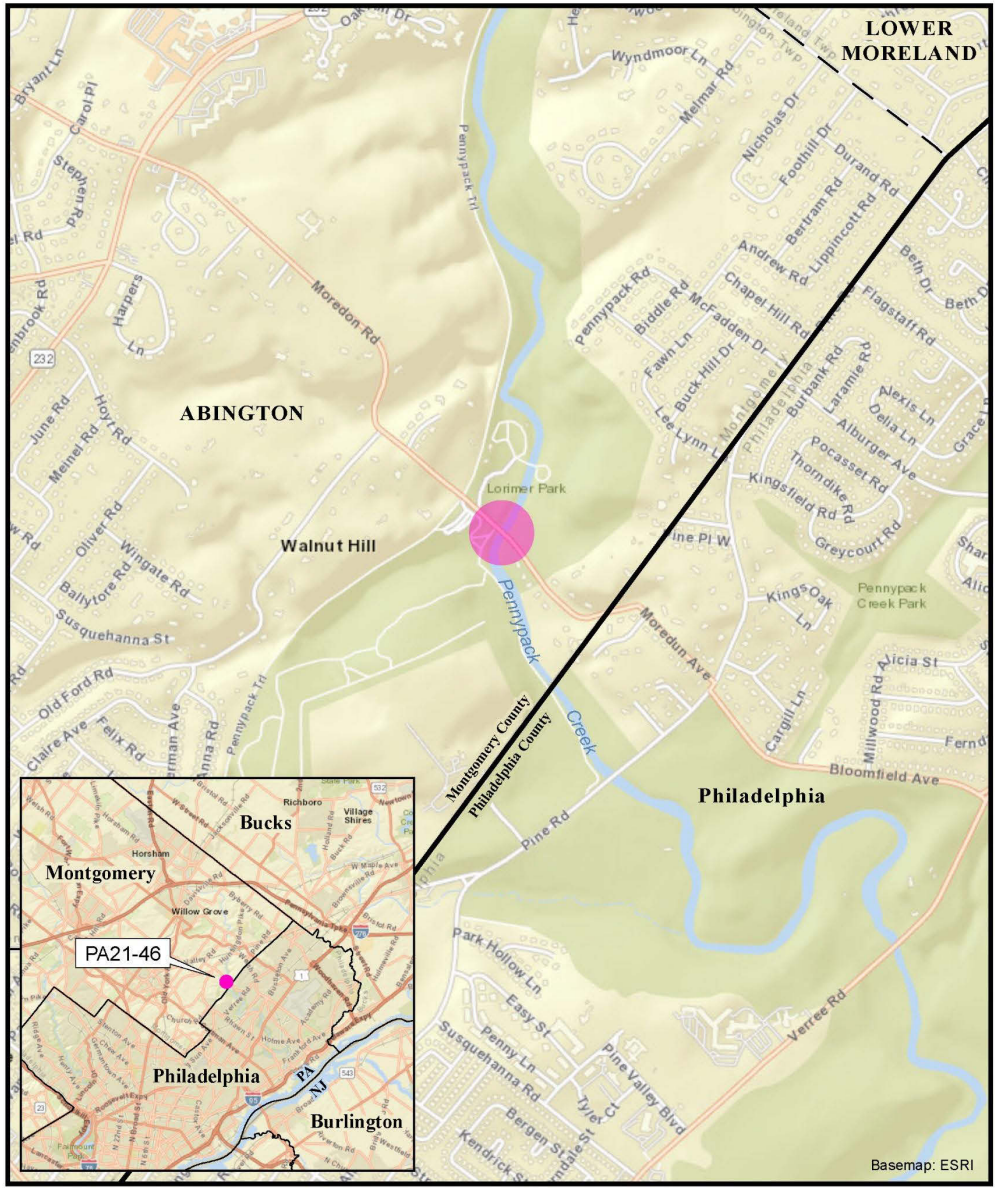
- **TIP Amendment**
- **Action:** Add new $3,870,000 Act 13 project to TIP, using county's remaining Act 13 balance from previous years' allocations and using county's $5 vehicle registration fee revenue to fully fund project, and by programming the following phases:

  PE ($200,000 Act 13) in FY21;
  FD ($200,000 Act 13) in FY22;
  ROW ($20,000 Act 13) in FY23;
  UTL ($50,000 Act 13) in FY24; and
  CON ($1,030,000 Act 13) in FY24 and ($2,370,000 LOC ($5 Fee)) in FY23.

- **Reason:** Use remaining Act 13 balance from previous years' allocations and using $5 vehicle registration fee to fully fund project
- **Background:**
  - *These are additional funds to the region*

dvrpc | TIP for PA

PA21-46: Moredon Road Bridge (CB #44) (Act 13)



- Moredon Road Bridge in Abington Township, Montgomery County
- Built in 1932
- “Structurally Deficient”
- Superstructure, substructure, and deck given “4 - Poor” condition rating.

dvrpc | TIP for PA

Regional Rail RRX Safety Enhancements Program

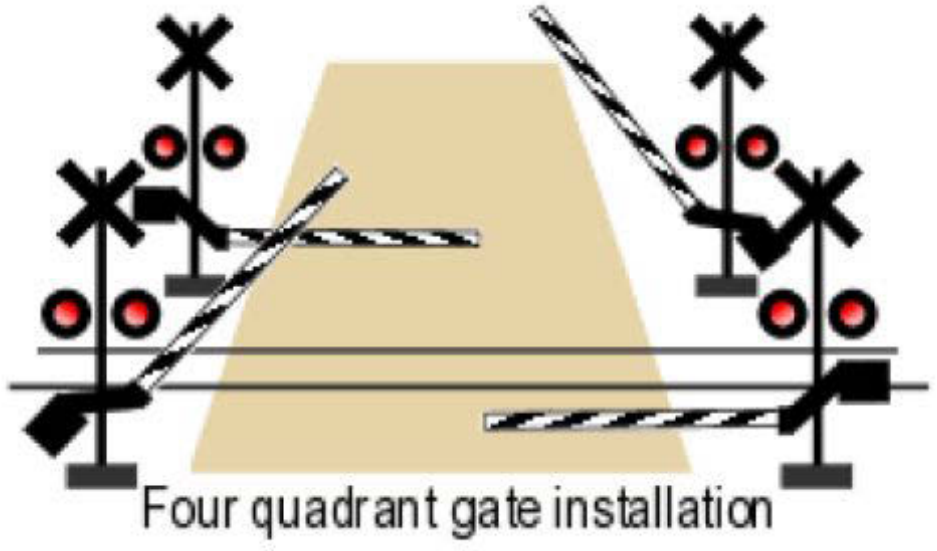
Various Counties | Add New Project to TIP

- **TIP Amendment**
- **Action:** Add new project to TIP in amount of $5,000,000 ($3,335,000 CARSI/$1,611,000 State 1514/$54,000 LOC) for FY21 CON
- **Reason:** Adding new rail safety improvement project/ program to TIP
- **Background:**
  - *CARSI funds are additional to the region*

dvrpc | TIP for PA

IMAGE 2- SEPTA DYNAMIC ENVELOPE PAVEMENT MARKINGS – CHERRY STREET CONSHOHOCKEN, PA

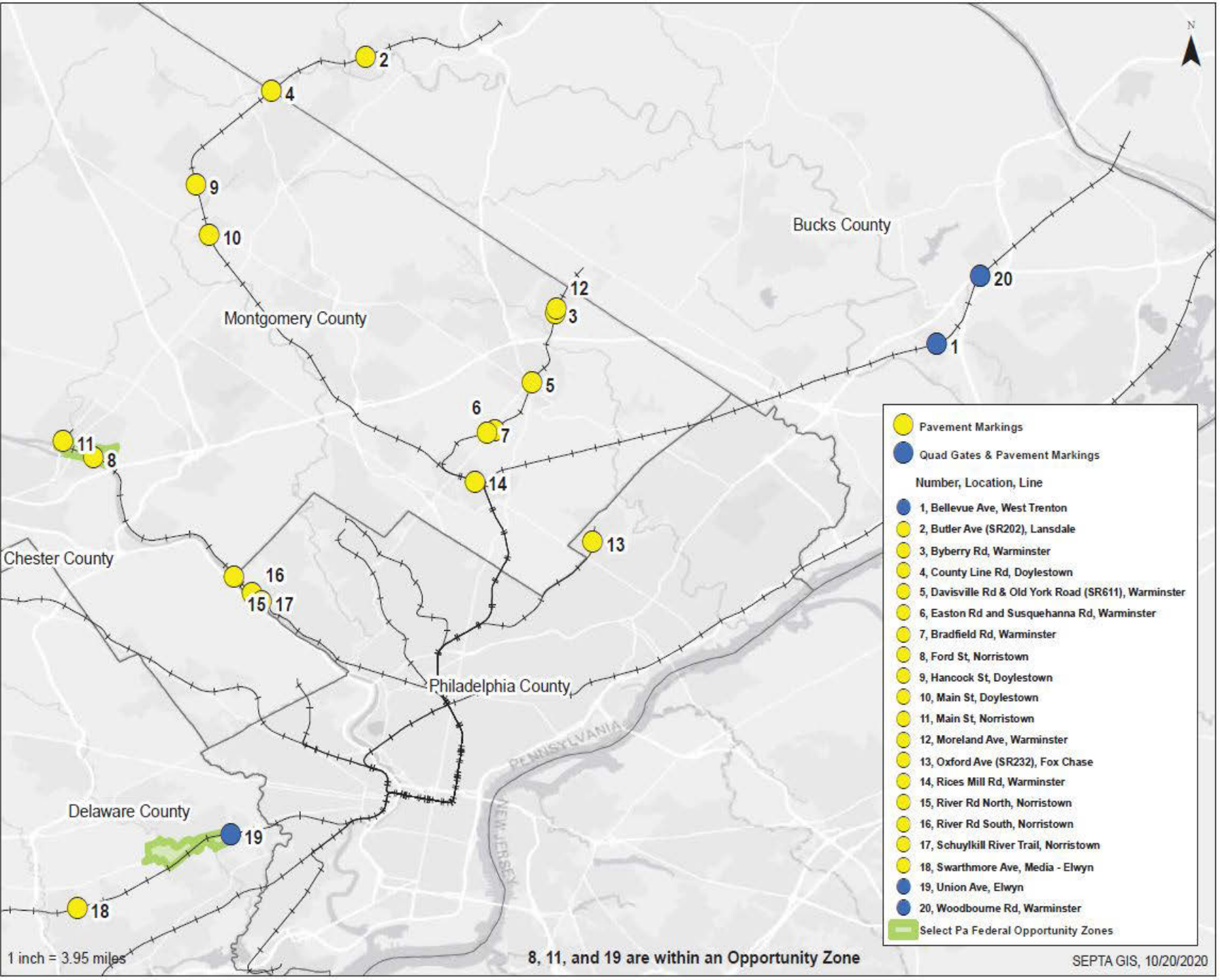
Photo and Graphic Credit: SEPTA



Project includes

- Dynamic Envelope Marking at 20 grade crossings
- Four quadrant gates at 3 locations

dvrpc | TIP for PA



Map of Project Locations

SEPTA Regional Rail Grade Crossing Safety Enhancements Program

Map Credit: SEPTA

dvrpc | TIP for PA

TIP ACTION | Proposed - PA

Request RTC Recommendation of TIP Amendment

- **Moredon Road Bridge (CB #44) (Act 13)**
  Add new $3,870,000 Act 13/LOC project
- **Regional Rail RRX Safety Enhancements Program**
  Add new $5,000,000 CARSI/State 1514/LOC project

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Vehicle Overhaul Program

SEPTA | Reduce Funding

- **TIP Amendment**
- **Action:** Reduce funding by $21,777,000 from $104,453,000 to $86,676,000
- **Reason:** Due to COVID-19 pandemic, SEPTA realized decreased Vehicle Overhaul program costs in FY20 and FY21; therefore, less FY21 funding is needed to support program
- **Background:**
  - *The VOH program allows SEPTA to continue overhaul of rolling stock*
  - *Program includes $6,000,000 (FY21-FY22) to support APCs*

dvrpc | TIP for PA

TIP ACTION | Proposed - PA

Request RTC Recommendation of TIP Amendment

- **Vehicle Overhaul Program**
  Reduce funding by $21,777,000 from $104,453,000 to $86,676,000

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THANK YOU!

PHOTO CREDIT: PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

DELAWARE VALLEY
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REGIONAL
PLANNING COMMISSION

June 8, 2021 RTC

Open Public Comment Period for

- **Draft *Connections 2050* Long-Range Plan**
- **Draft FY2022 TIP for NJ**
- **Draft Conformity Determination** for the Draft *Connections 2050* Long-Range Plan, Draft FY2022 NJ TIP, and FY2021 PA TIP

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Anticipated Public Comment Periods

- **Draft *Connections 2050* Long-Range Plan**
  - July 28 - August 30
- **Draft FY2020 NJ TIP**
  - July 21 - August 23
- **Draft Conformity Determination**
  - August 6 - September 8

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Two (2) *Virtual* Public Meetings

- Wed. August 11 at 2 pm
- Wed. August 18 at 7 pm

Action Proposed

That the RTC recommends Board approval of staff request to open a public comment period for the purpose of gathering public and agency comments on the

- Draft *Connections 2050* Long-Range Plan
- Draft FY2022 TIP for NJ
- Draft Conformity Determination for the
  - Draft *Connections 2050* Long-Range Plan
  - Draft FY2022 TIP for NJ and
  - FY2021 TIP for PA

with proper public notification, as well as to

- publish the Draft LRP, Draft TIP, and Draft Conformity Finding documents
- post them on the Internet
- make copies available at certain public libraries (as appropriate), and
- hold public meetings, which will likely be held online.

Thank you!

Questions?

REGIONAL TECHNICAL COMMITTEE

2050 Population & Employment Forecasts

Ben Gruswitz, AICP
Manager, Socioeconomic
& Land Use Analytics

June 8, 2021

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2050 Population & Employment Forecasts

- Updated every four years with long-range plan (LRP)
- Must maintain 20 year horizon or horizon year of LRP
- Required for two items due for Board review in September
  - *Connections 2050*
  - 2022 NJ TIP air quality conformity analysis

Presentation Overview

- Improvements to forecasting process & methods
  - New committee for collaborations with member counties
  - Land use model: UrbanSim
- Forecast assumptions & results
- Proposed action

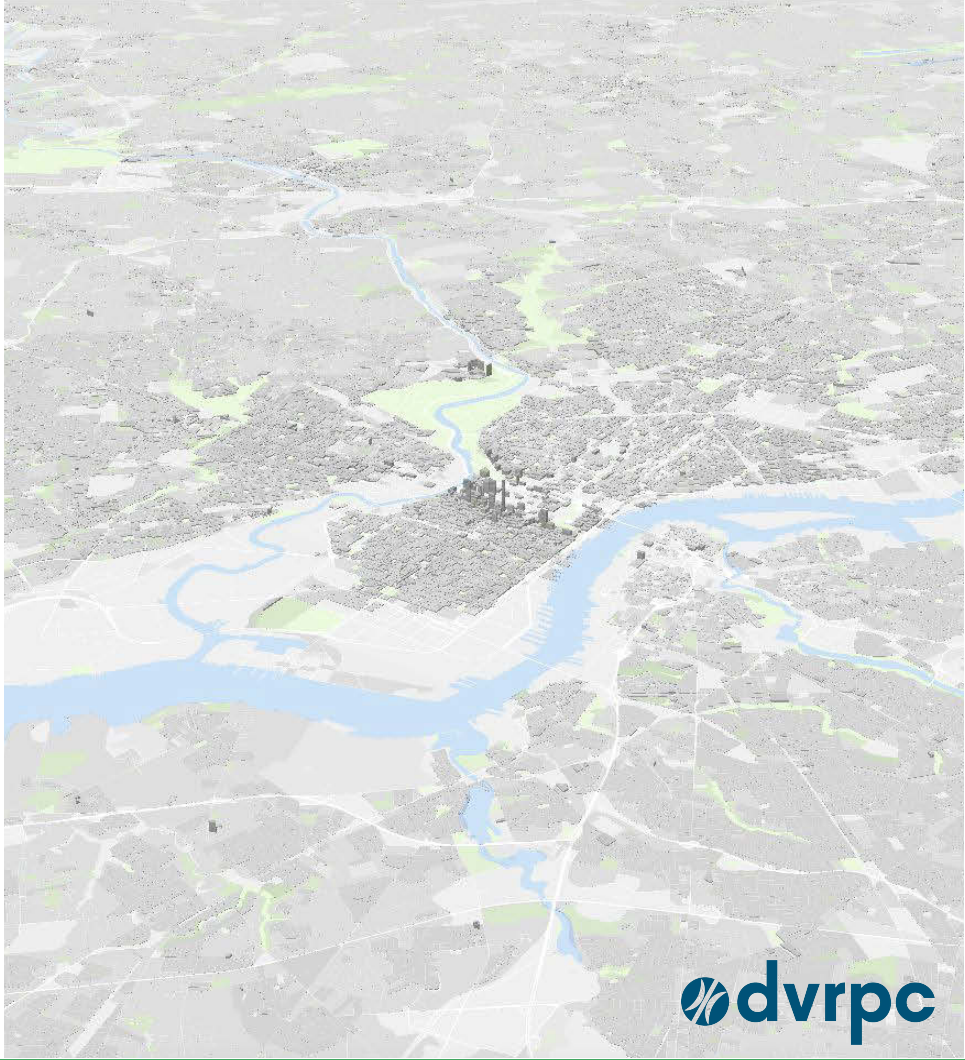
Improvements to Process & Methods

Socioeconomic & Land Use Analytics Committee (SLUAC)

- New group formed for collective tasks requiring local expertise & data review
- Comprised of county planning staff doing demographic, economic, and/or development analysis
- First project: 2050 forecasting collaboration
    - Review point-level base year employment data [2015 National Establishments Time Series (NETS)]
    - County trends & growth assumptions
    - Identifying real estate development projects for forecast inclusion
    - Other data collection
    - Feedback on model results

UrbanSim

- A “disaggregate micro-simulation” model
  - Simulates each year allocating from regional growth assumptions for households & employment
  - Allocates to the census block level
  - Attempts to replicate individual decisions & causation
    - Market behavior
    - Developer behavior
    - Household behavior
    - Employment sector behavior



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UrbanSim - Widely Used

UrbanSim - Data Integration

- 2015 NETS employment
- Census 2015-2019 Population Estimates
- American Community Survey (standard tables & Public Use Microdata)
- 2010 Census
- BLS, BEA, IHS Markit forecast
- Municipal zoning layers
- Points of interest of regional significance
- Land use inventory
- Protected open space inventory
- Floodplains
- Highway & transit network
- Accessibility changes from future projects in latest conformity analysis
- Survey of developers/planners
- Parcels
- Building permits

UrbanSim - Data Sources

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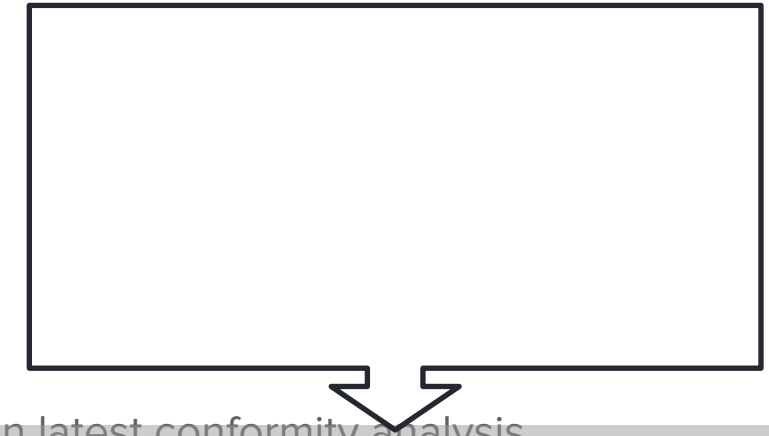


Regional real estate development pipeline

UrbanSim - Integration of Agency Processes

- Simultaneous forecasting of population & employment
  - Model understands the interplay of residential & non-residential growth
  - Example: employment growth spurring residential growth for proximity to jobs

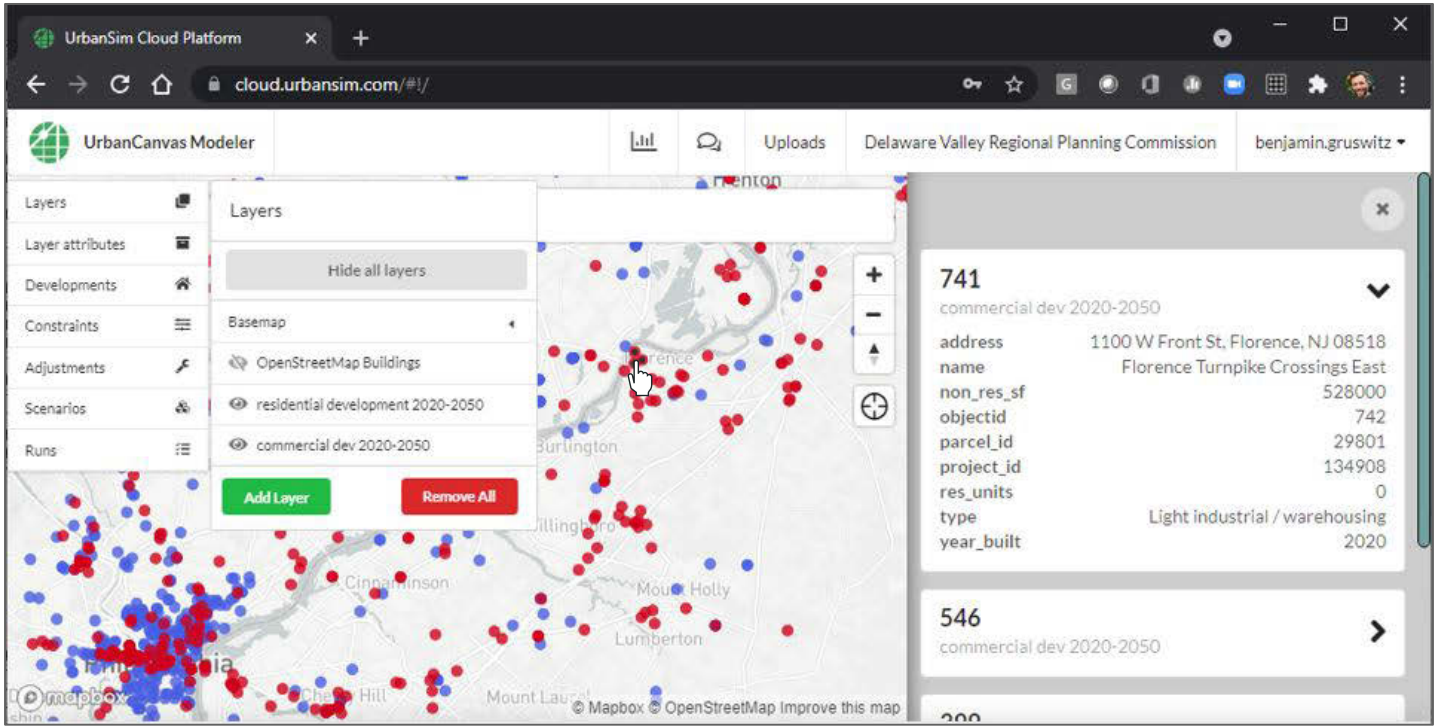
UrbanSim - Integration of Agency Processes

- Travel model integration
  - Accessibility changes from future infrastructure projects influences development
  - Simultaneous production of data needed
    - Municipal/district, county totals for population & employment
    - Detailed travel modeled inputs at the zonal level
      - Residential: household sizes, incomes, workers, vehicle counts
      - Non-residential: 14 main sectors, detailed manufacturing sectors (freight model)
  - Enables zonal allocation informed by
    - development capacity
    - attractiveness
    - pipeline projects
    - partner feedback

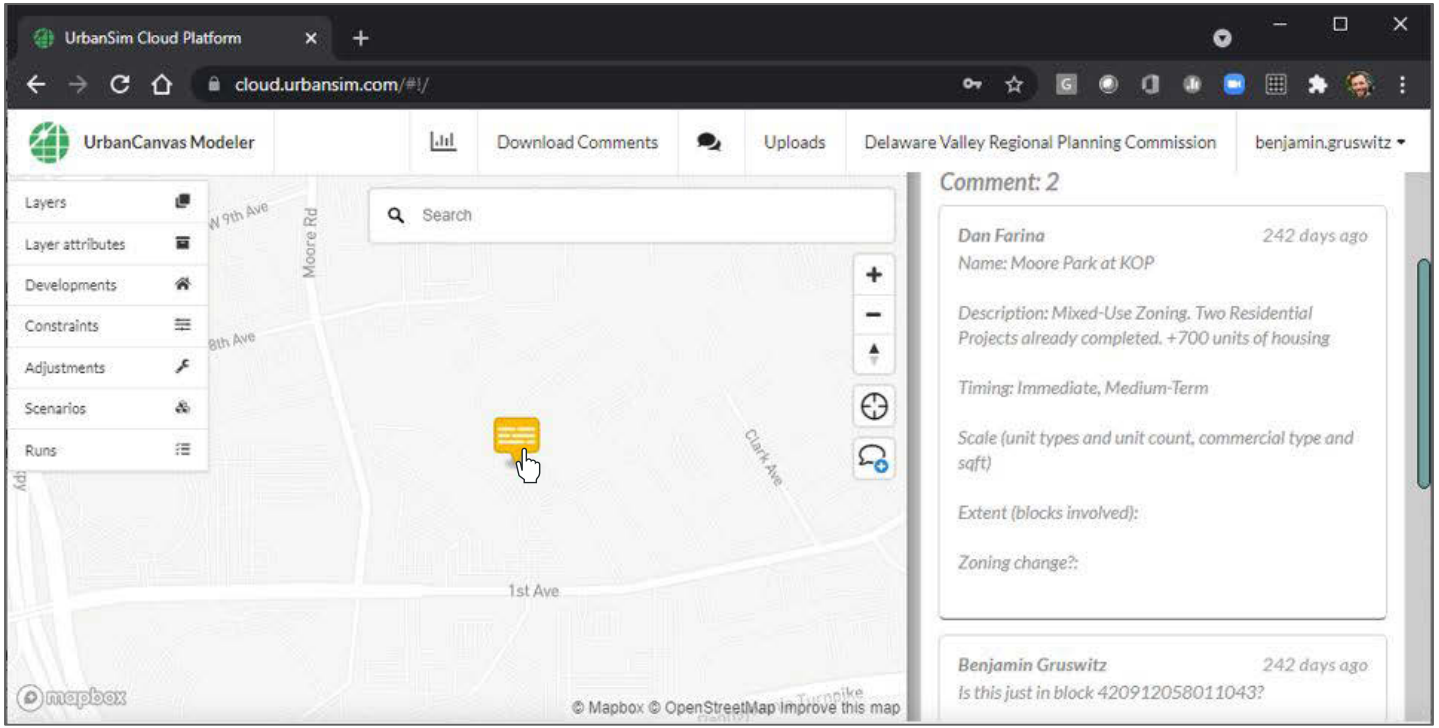
UrbanSim - Integration of Agency Processes

- Continued use & modifications to forecast for agency studies
  - Regional
  - Corridor
  - Station area
  - Master plan/district
- Can rerun forecast scenario configuration with new data on development projects/timing
- Can compare travel or development outcomes of different assumptions to forecast base
  - infrastructure and/or development
  - timing and/or magnitude

UrbanSim - Platform for Sharing & Feedback

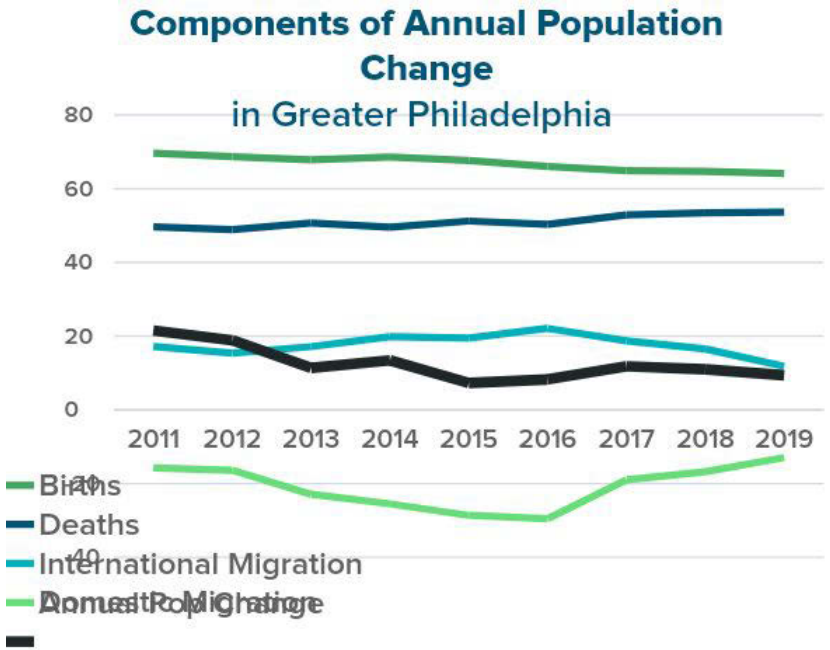


UrbanSim - Platform for Sharing & Feedback



Assumptions & Results

Pre-Pandemic Trends - Population



- Aging population
- Declining birth-rates
- Slowing immigration
- Negative, but improving, net domestic migration
- Slowing population growth overall

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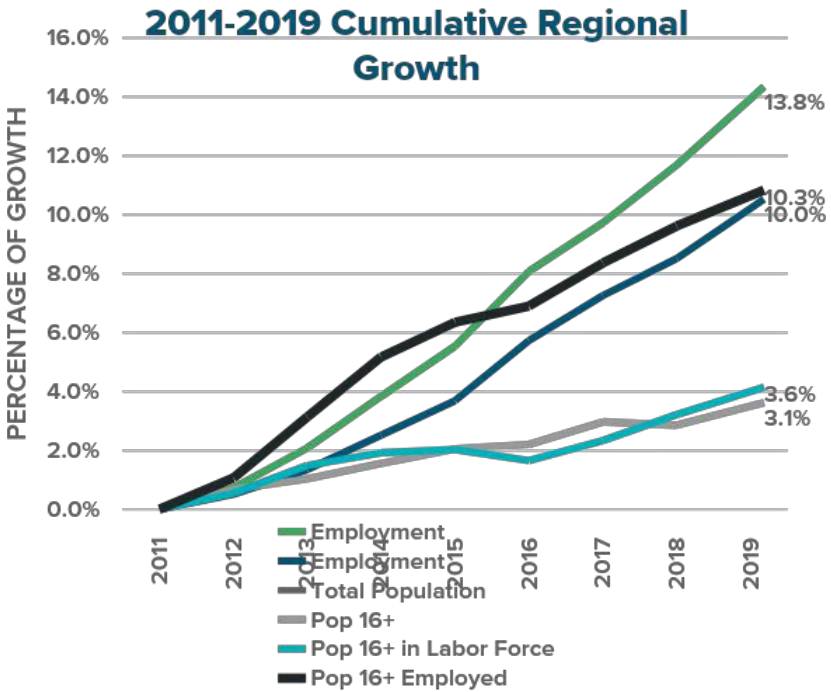
Pre-Pandemic Trends - Employment



- Despite sluggish population, declining unemployment rate created explosion of employed population
- Record employment increase before pandemic decline

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Pandemic Assumptions – Much Is Still Unknown

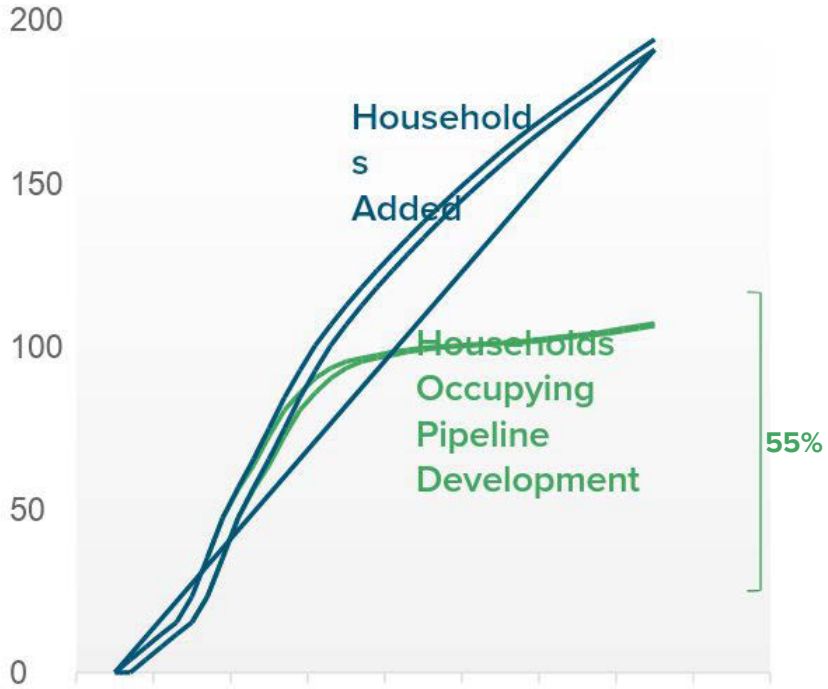
Population

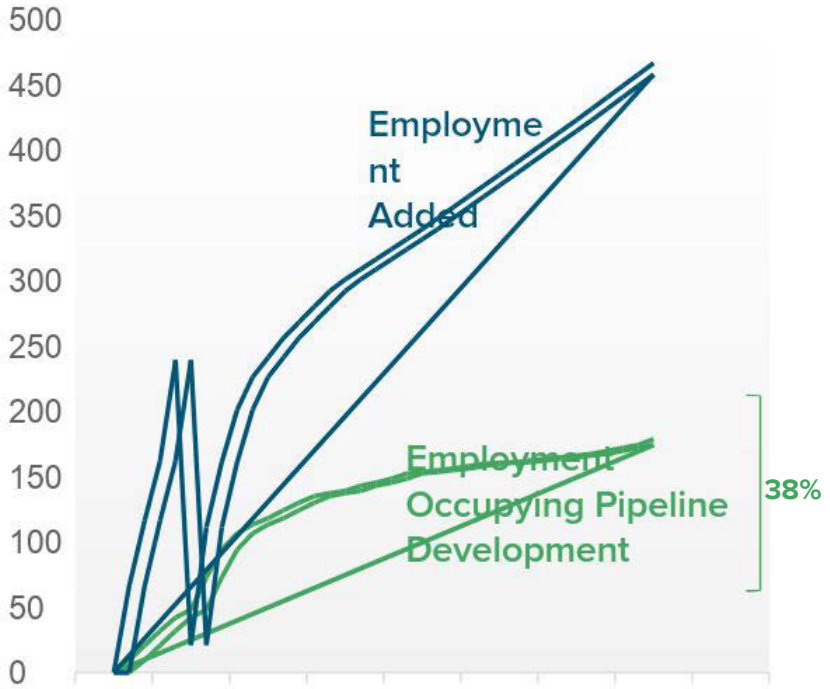
- Increased deaths largely reflected in group quarters nursing homes & correctional facilities
- Difficult to reduce household population while also filling increased units in development pipeline
- Potential for immigration & domestic migration rebound

Employment

- Regionally, almost all 2015-2019 gains wiped out in 2020
- Total employment rebound expected between 2023 and 2024
  - vaccine distribution
  - stimulus measures
  - high levels of household savings

Pipeline vs. Total Growth





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Population Forecast by County, 2015–2050

County	2015	2020	2025	2030	2035	2040	2045	2050	Absolute Change, 2015–2050	Percentage Change, 2015–2050
Burlington	446,863	448,166	463,830	471,001	474,401	476,962	477,540	477,884	31,021	6.9%
Camden	507,692	507,602	512,630	512,790	515,571	518,525	519,127	519,476	11,784	2.3%
Gloucester	291,091	291,794	295,192	298,495	307,003	312,710	321,140	327,608	36,517	12.5%
Mercer	368,200	368,191	378,112	392,070	394,244	395,881	396,202	396,462	28,262	7.7%
Four New Jersey Counties	**1,615,861**	**1,617,773**	**1,651,789**	**1,676,386**	**1,693,254**	**1,706,118**	**1,716,054**	**1,723,480**	**107,619**	**6.7%**
Bucks	625,225	629,389	635,768	641,786	646,930	651,113	654,442	657,131	31,906	5.1%
Chester	515,043	528,418	563,468	586,300	604,007	620,391	634,119	645,673	130,630	25.4%
Delaware	563,142	567,017	570,207	573,667	576,903	579,706	581,763	583,376	20,234	3.6%
Montgomery	817,199	834,411	852,415	868,662	883,800	896,576	907,942	917,924	100,725	12.3%
Philadelphia	1,571,440	1,591,156	1,627,244	1,650,559	1,658,977	1,665,398	1,670,261	1,680,798	109,358	7.0%
Five Pennsylvania Counties	**4,092,049**	**4,150,391**	**4,249,102**	**4,320,974**	**4,370,617**	**4,413,184**	**4,448,527**	**4,484,902**	**392,853**	**9.6%**
DVRPC Region	**5,705,895**	**5,766,144**	**5,898,866**	**5,995,330**	**6,061,836**	**6,117,262**	**6,162,536**	**6,206,332**	**500,437**	**8.8%**

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Employment Forecast by County, 2015–2050

County	2015	2020	2025	2030	2035	2040	2045	2050	Absolute Change, 2015–2050	Percentage Change, 2015–2050
Burlington	243,773	241,044	259,622	263,784	265,316	267,490	269,911	272,016	28,243	11.6%
Camden	235,055	231,475	251,236	254,730	256,495	258,893	261,276	263,284	28,229	12.0%
Gloucester	116,906	123,027	138,978	142,306	144,046	146,652	149,362	151,891	34,985	29.9%
Mercer	229,501	230,526	246,875	249,634	251,430	254,122	256,973	259,402	29,901	13.0%
Four New Jersey Counties	**827,250**	**828,092**	**898,736**	**912,484**	**919,322**	**929,197**	**939,567**	**948,643**	**121,393**	**14.7%**
Bucks	315,665	308,713	326,700	332,639	335,324	338,108	341,149	343,632	27,967	8.9%
Chester	302,656	298,305	336,321	345,083	351,403	358,837	366,724	373,664	71,008	23.5%
Delaware	261,417	262,851	279,772	283,398	285,407	288,280	291,175	293,526	32,109	12.3%
Montgomery	567,585	559,413	601,014	610,266	616,333	625,549	635,373	643,790	76,205	13.4%
Philadelphia	766,163	804,345	839,480	857,981	872,566	882,135	889,907	904,311	138,148	18.0%
Five Pennsylvania Counties	**2,213,486**	**2,233,627**	**2,383,287**	**2,429,367**	**2,461,033**	**2,492,909**	**2,524,328**	**2,558,923**	**345,437**	**15.6%**
DVRPC Region	**3,038,721**	**3,059,699**	**3,279,998**	**3,339,821**	**3,378,320**	**3,420,066**	**3,461,850**	**3,505,516**	**466,795**	**15.4%**

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Action Proposed

Action Proposed

That the Regional Technical Committee (RTC) recommends that the Board adopts the 2050 Population and Employment Forecasts.

UrbanSim - How it works

- A “disaggregate micro-simulation” model
  - Replication of real life decisions by a simulated individuals and households
    - Developer behavior
    - Household behavior
    - Employment sector behavior
  - Results at the census block level
- Simulates each year allocating from regional growth in households & employment (control totals)
- Key submodel components:
  - Location choice models (LCMs)
    - Residential development project LCM – developer behavior
    - Household LCM – household behavior
    - Employment LCM – employment sector behavior
  - Residential price model market behavior

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UrbanSim - Steps of Household Location Choice

- In each new simulation year
  - Creates random sample of individual households (household “agents”) to match regional household control total increase
  - Assigns first set of households to fill new residential units to 97% occupancy within 1 to 3 years of year built
  - Assigns remaining households to existing vacancies based on
    - Household demographics
      - Age of householder
      - Household size
      - Renter/owner status

DVRPC SELF CERTIFICATION

METROPOLITAN TRANSPORTATION PLANNING AND PROGRAMMING PROCESS

DVRPC RTC Meeting

JOHN WARD
Deputy Executive Director

June 8, 2021

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

DVRPC SELF CERTIFICATION

- US DOT Metropolitan Transportation Planning and Programming Regulations require MPO's to certify that its transportation planning and programming process is in conformance with all applicable federal regulations
- Undertake a Continuing, Cooperative, and Comprehensive performance-based, multimodal transportation planning and programming process
- TIP and Long Range Plan are consistent with the Clean Air Act

DVRPC SELF CERTIFICATION

- Private citizens and affected public agencies were provided with a reasonable opportunity to comment on the TIP, Long Range Plan, and planning process
- The TIP is financially constrained
- The CMP requirements have been met
- Performance-based planning approach is being integrated through coordination with state and federal partners on the development of performance measure targets

DVRPC SELF CERTIFICATION

- Developed and maintain a Coordinated Human Services Transportation Plan (currently titled Equity Through Access) with state, county, and transit agency partners
- The planning process considers improvements to resiliency and reliability of the transportation system and enhancements to travel and tourism
- Meets restrictions on lobbying
- Complies with the requirements of Title VI of the Civil Rights Act, and incorporates Environmental Justice considerations for minority and low-income populations
- Prohibits discrimination and complies with the guidelines of EEO, DBE, ADA, and OAA

DVRPC SELF CERTIFICATION

- DVRPC's Four-Year Federal Certification Review Final Report indicates that the Review's one Corrective Action related to updates to required language in our contracts has been addressed
- DVRPC elects to continue to use the exception provision regarding transit agency representation on MPO boards while continuing the transit agencies participation as non-voting members of the Board and voting members of the RTC
- DVRPC certifies that it qualifies for this exception

DVRPC SELF CERTIFICATION

Action Proposed

That the RTC recommends that the Board adopt Resolution No. B-FY21-005 certifying that the DVRPC Metropolitan Transportation Planning and Programming Process is in conformance with federal regulations implementing the FAST Act, MAP-21, the Clean Air Act Amendments, and other pertinent federal legislation.

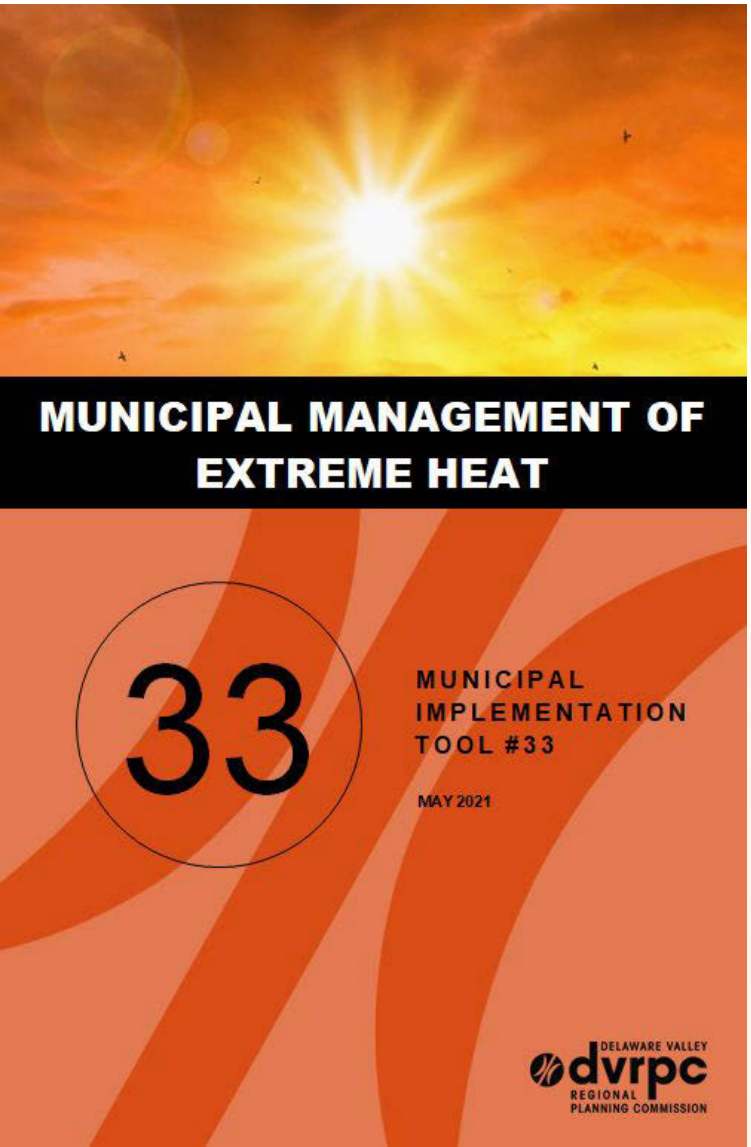
Municipal Management of Extreme Heat

Adam Beam, AICP
Senior Research Analyst
Office of Energy and Climate Change Initiatives

June 8, 2021

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

Municipal Management of Extreme Heat



- An overview of extreme heat: what it is and why it happens.
- Expected impacts of extreme heat on populations and infrastructure.
- Recommendations for mitigating the urban heat island effect to reduce local temperatures.
- Recommendations for preparing for and responding to extreme heat events.
- www.dvrpc.org/Products/MIT21011

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What is Extreme Heat?

- CDC - weather that is much hotter and/or more humid than average for a particular time and place

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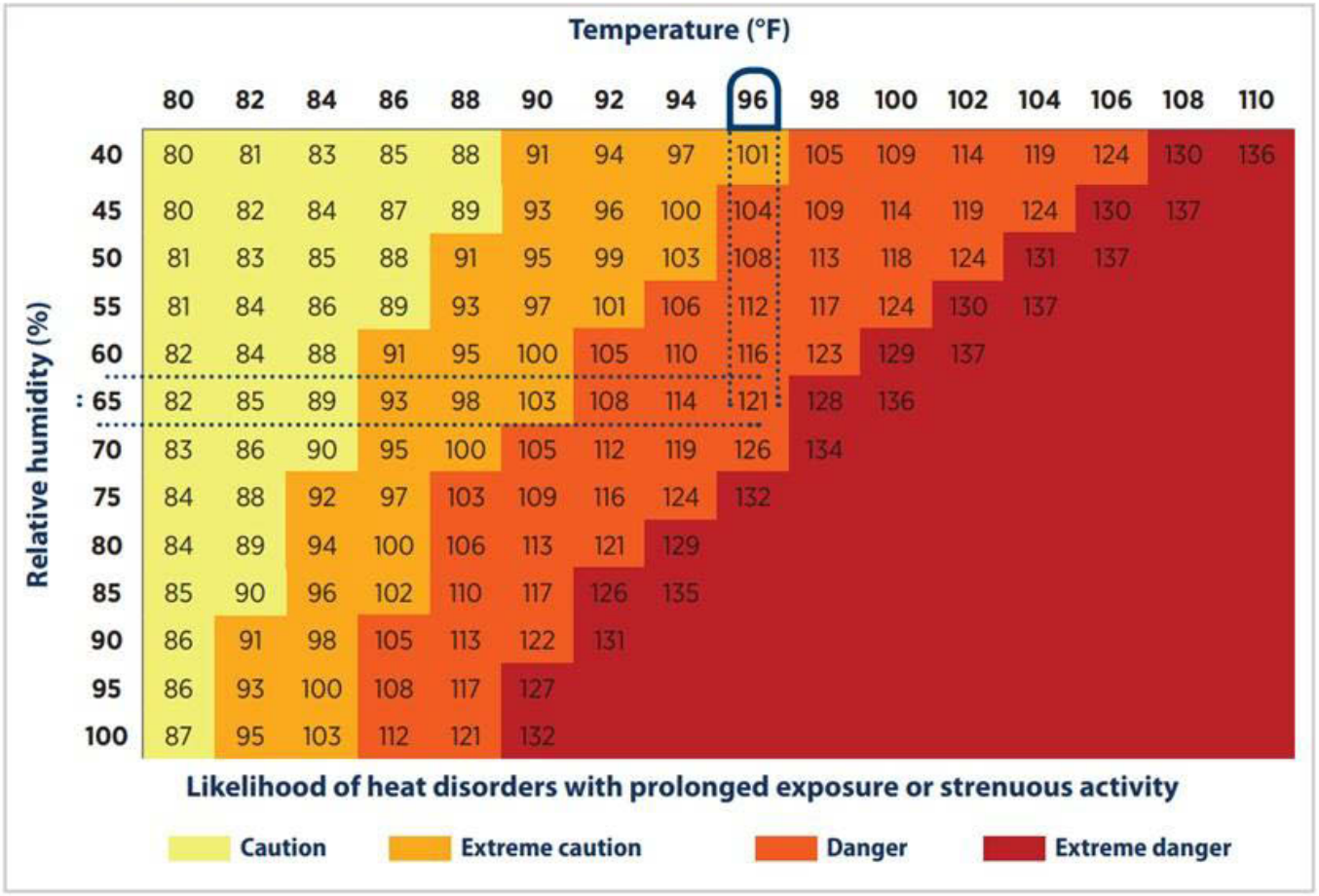
What is Extreme Heat?

NOAA's National Weather Service Heat Index



This chart shows that as the temperature (horizontal axis) and relative humidity (vertical axis) each increase, they combine to create a heat index (colored values) that feels hotter than the actual temperature. For example, when the temperature is 96°F, with 65 percent humidity, it actually feels like 121°F (indicated by the blue lines in the chart above). Source: NOAA National Weather Service, 2016.[1]

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Climate Change and Extreme Heat

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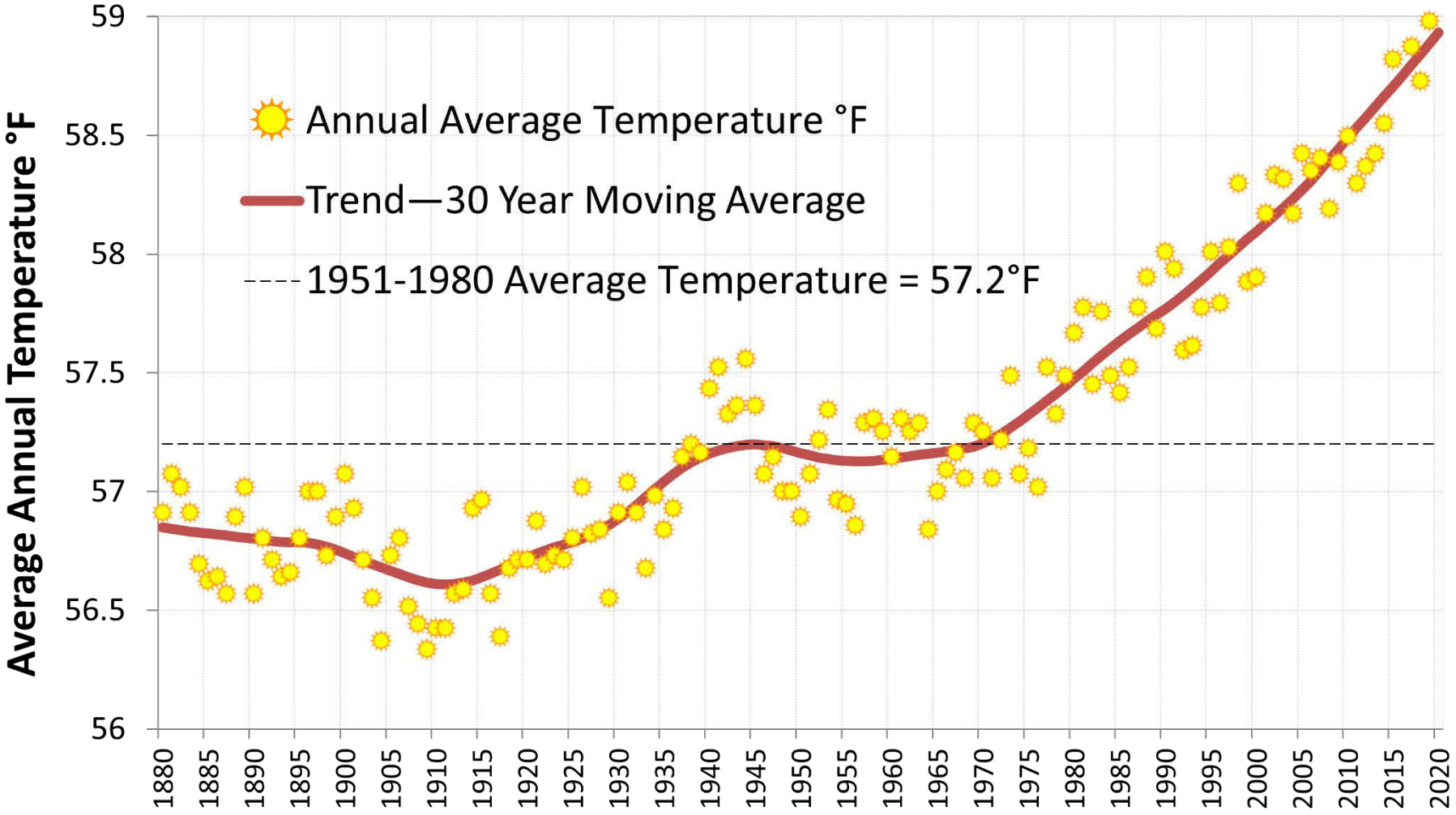

Climate Change and Extreme Heat

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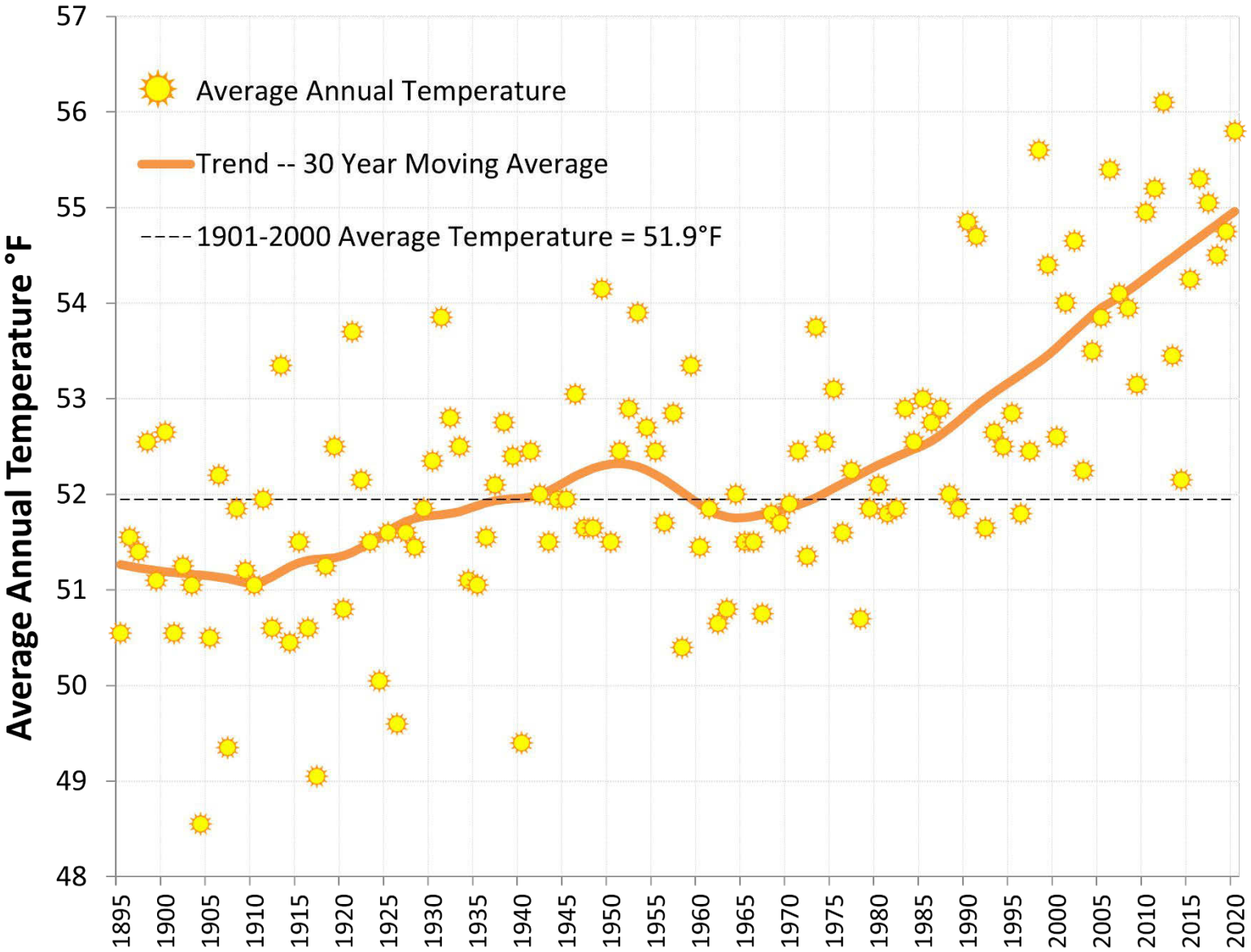
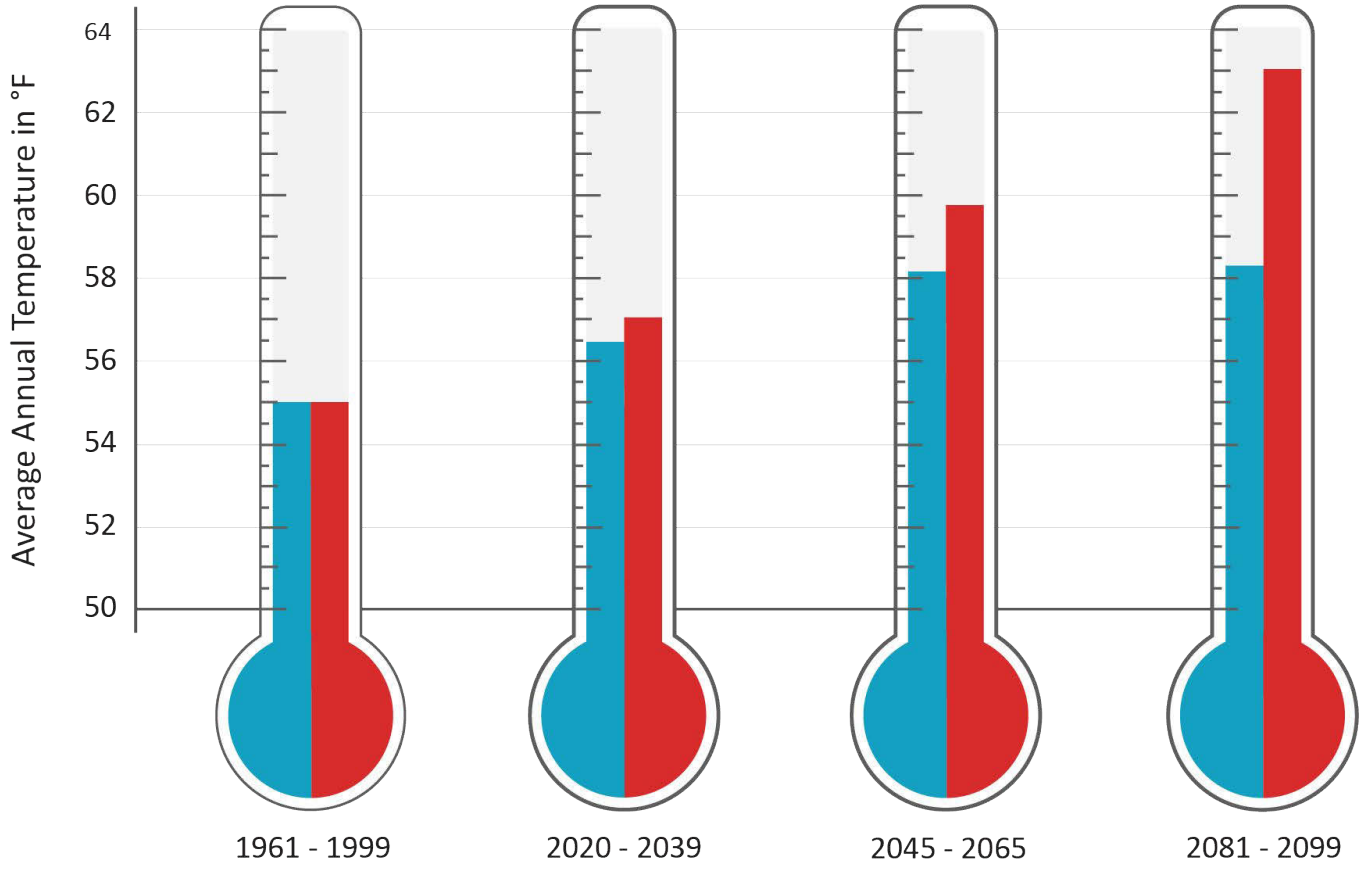


Climate Change and Extreme Heat

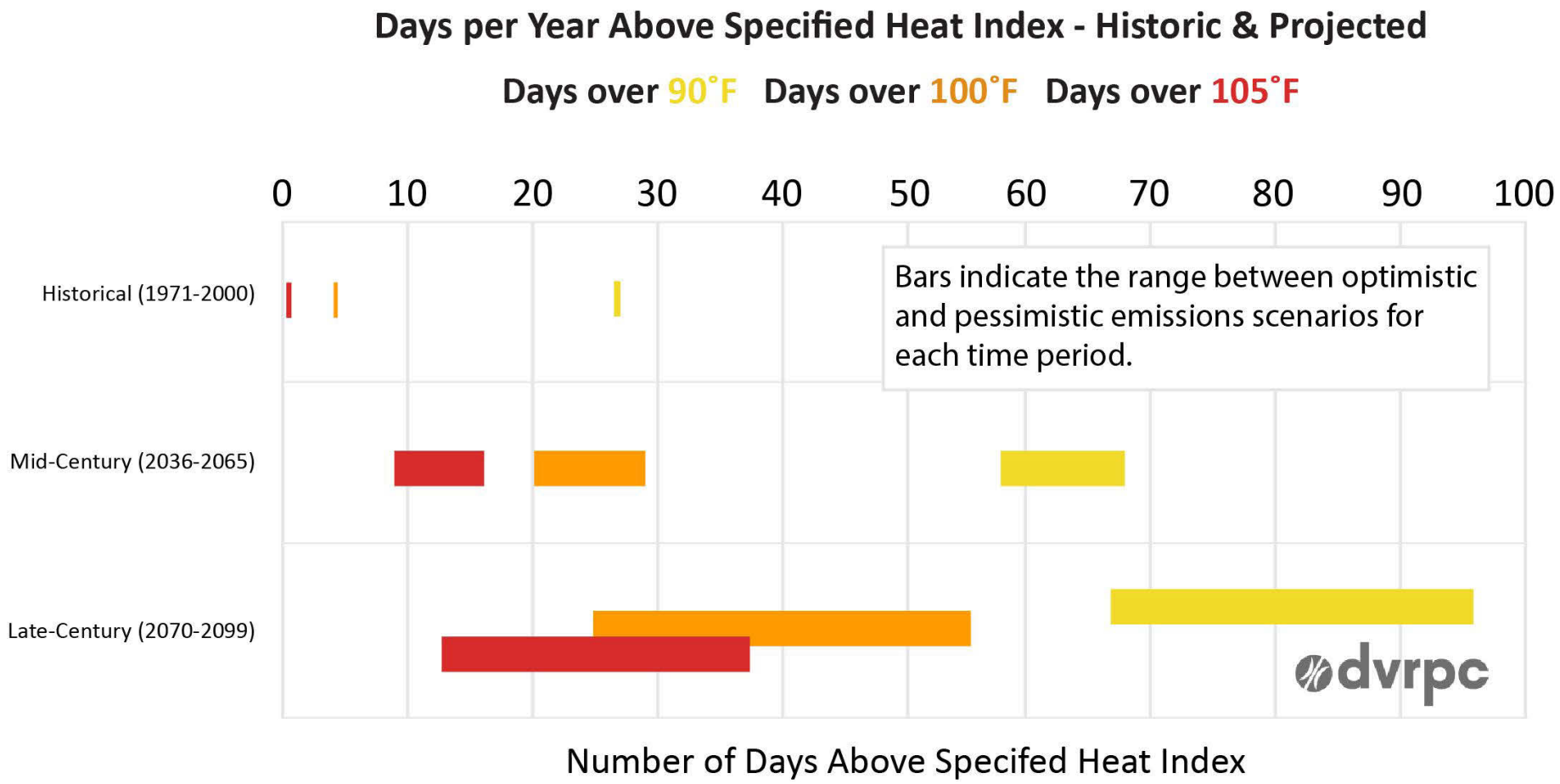
Average Annual Temperature in °F -- Historic and Projected
DVRPC Region

Optimistic | Pessimistic



Source: DVRPC chart using data provided by ICF.

Climate Change and Extreme Heat



Source: DVRPC chart using data provided by Union of Concerned Scientists *Killer Heat* report.

Heat Island Effect

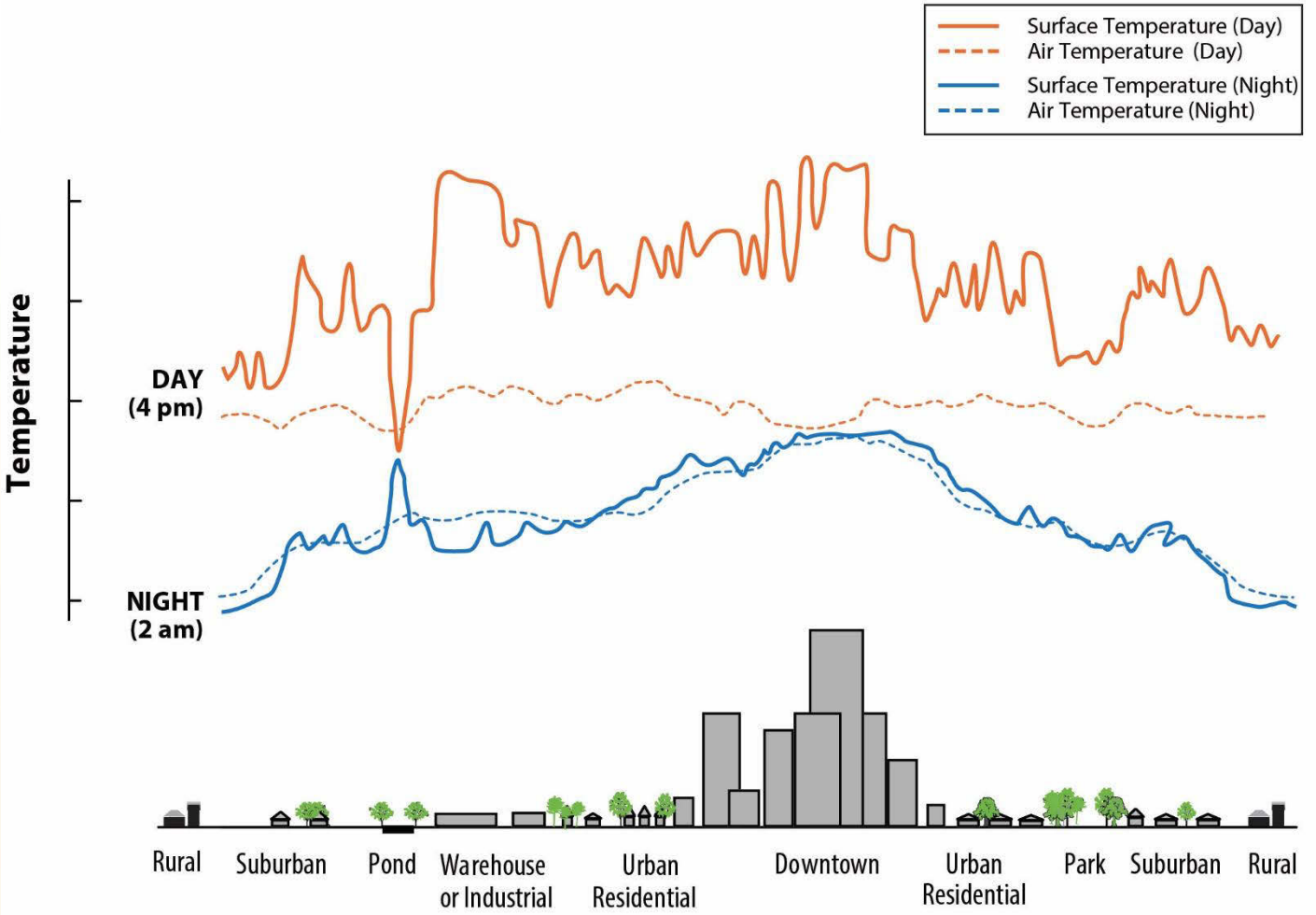


Image courtesy of US EPA

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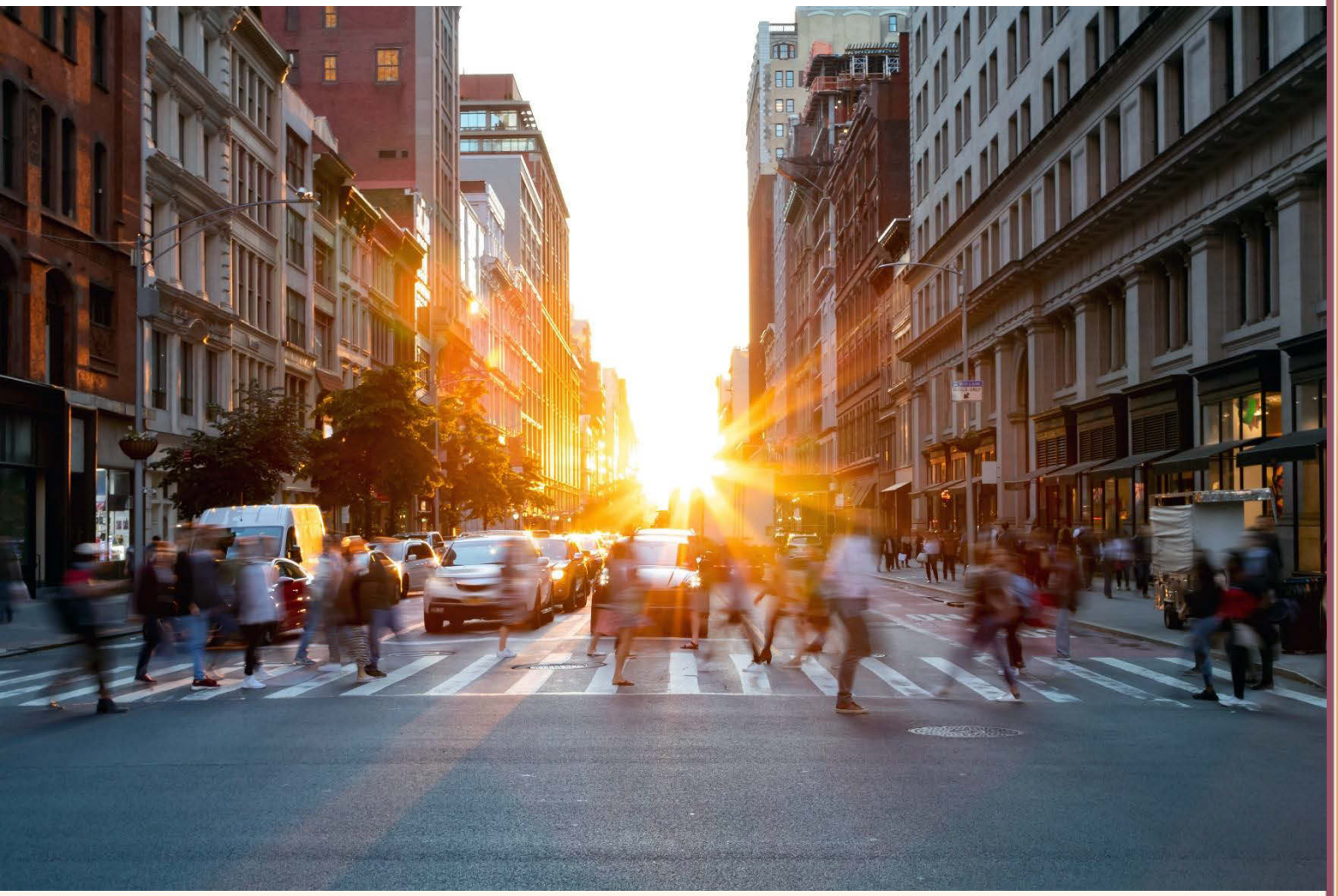
Heat Island Effect – Vegetation Loss

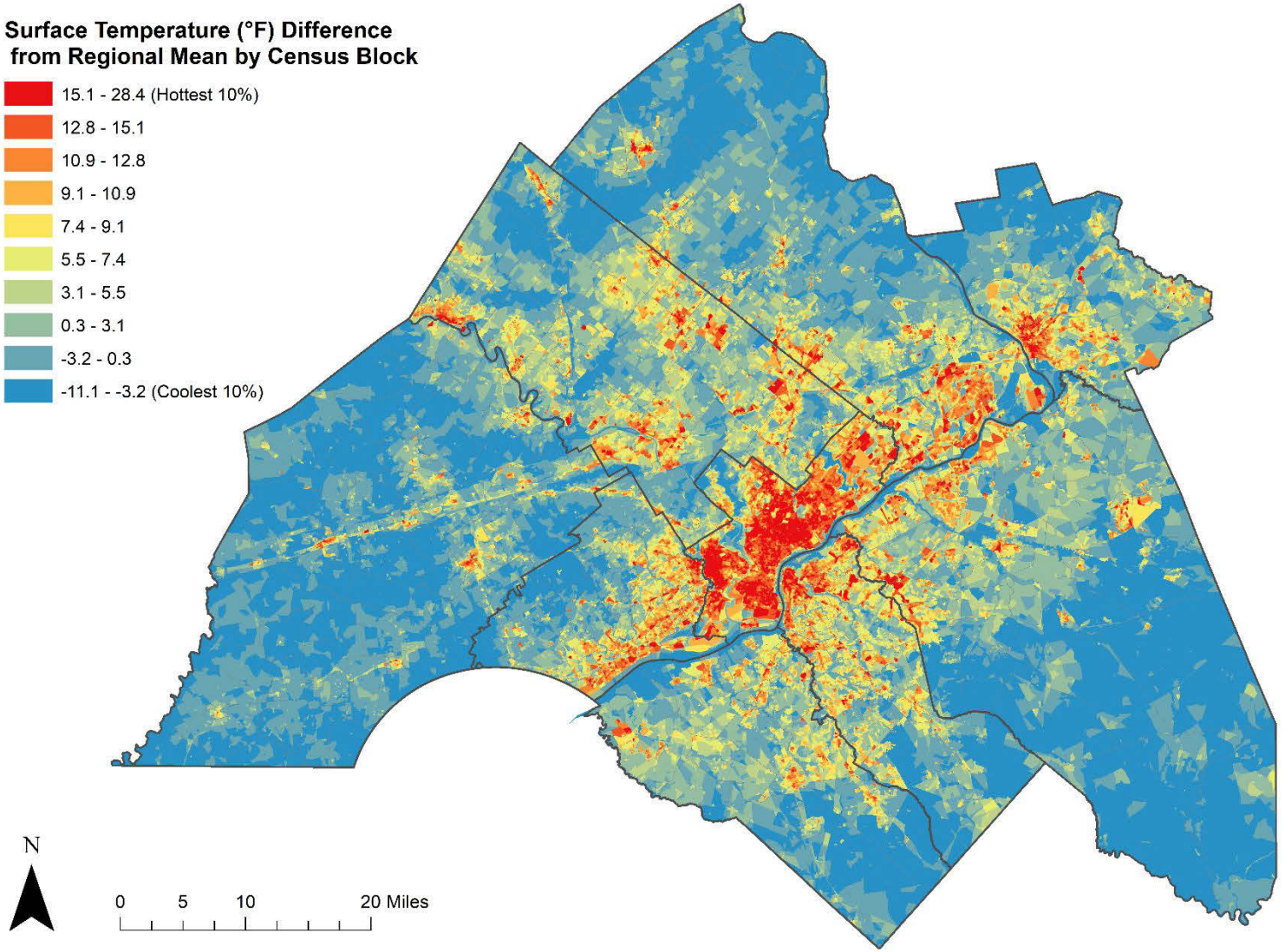
Heat Island Effect – Urban Materials



Heat Island Effect – Urban Geometry

Heat Island Effect – Waste Heat

Heat Islands – DVRPC Region



Heat Islands – West Philadelphia

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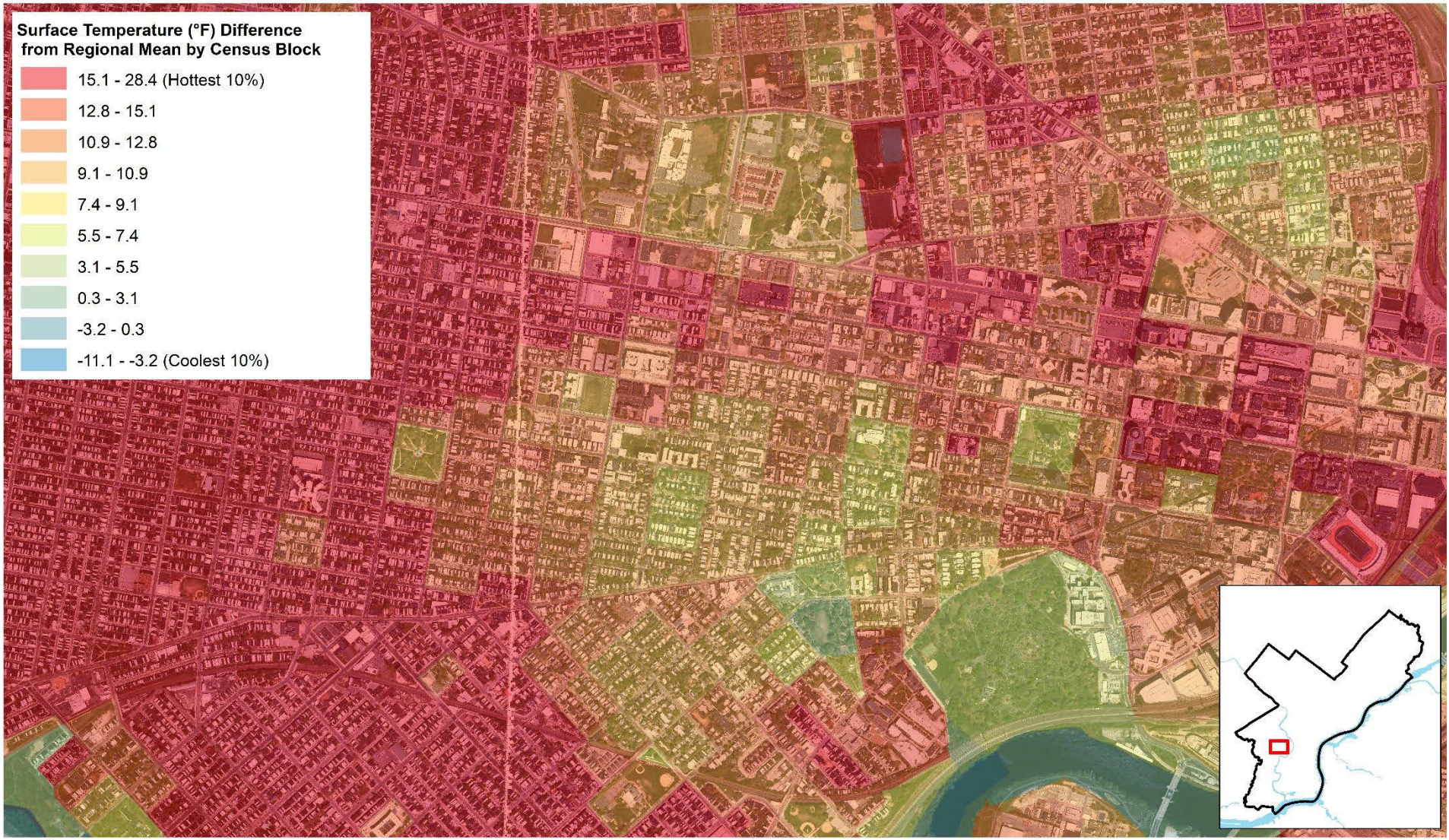

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Impacts of Extreme Heat

- Heat-health Risks

Heat Index	Possible Heat Disorders
90°F	Sun stroke, heat cramps, and heat exhaustion are possible for certain risk groups.
100°F	Heat stress or illnesses are possible, especially for elderly adults, children, and others sensitive to heat.
105°F	Even healthy adults are at risk of heat-related illness with prolonged exposure.
130°F	Heat stroke is highly likely with continued exposure.

- Air Quality Degradation

- Exacerbation of Inequality
  - Low-income neighborhoods
  - Racial and ethnic minority neighborhoods

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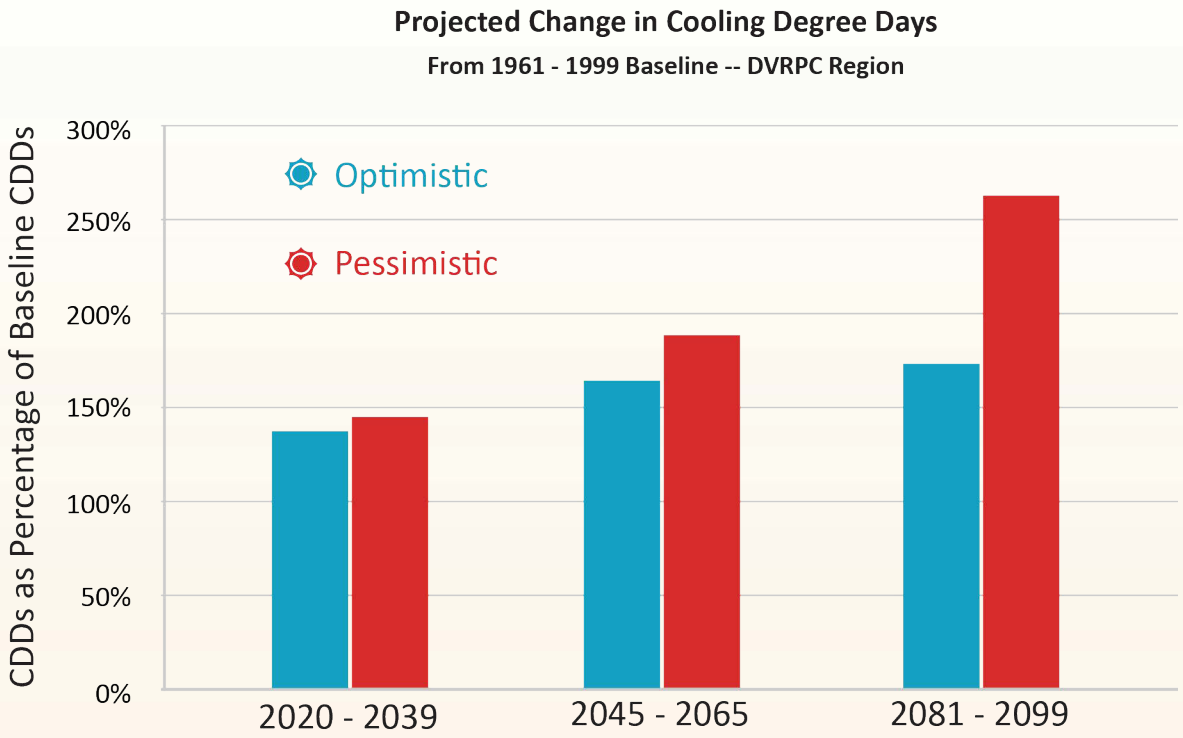
Impacts of Extreme Heat

- Transportation Infrastructure
- Utility Infrastructure



Source: DVRPC chart using data provided by ICF.

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Municipal Actions

- Identify hot spots and vulnerable populations
- Mitigate Heat Islands
- Prepare for and Adapt to Heat Events

Hot Spots and Vulnerable Populations

- Those most vulnerable to heat
  - Elderly
  - Children
  - Low-income residents
  - Socially isolated
  - Racial and ethnic minorities
  - Limited English Proficiency
  - Foreign born populations
  - Underlying medical conditions

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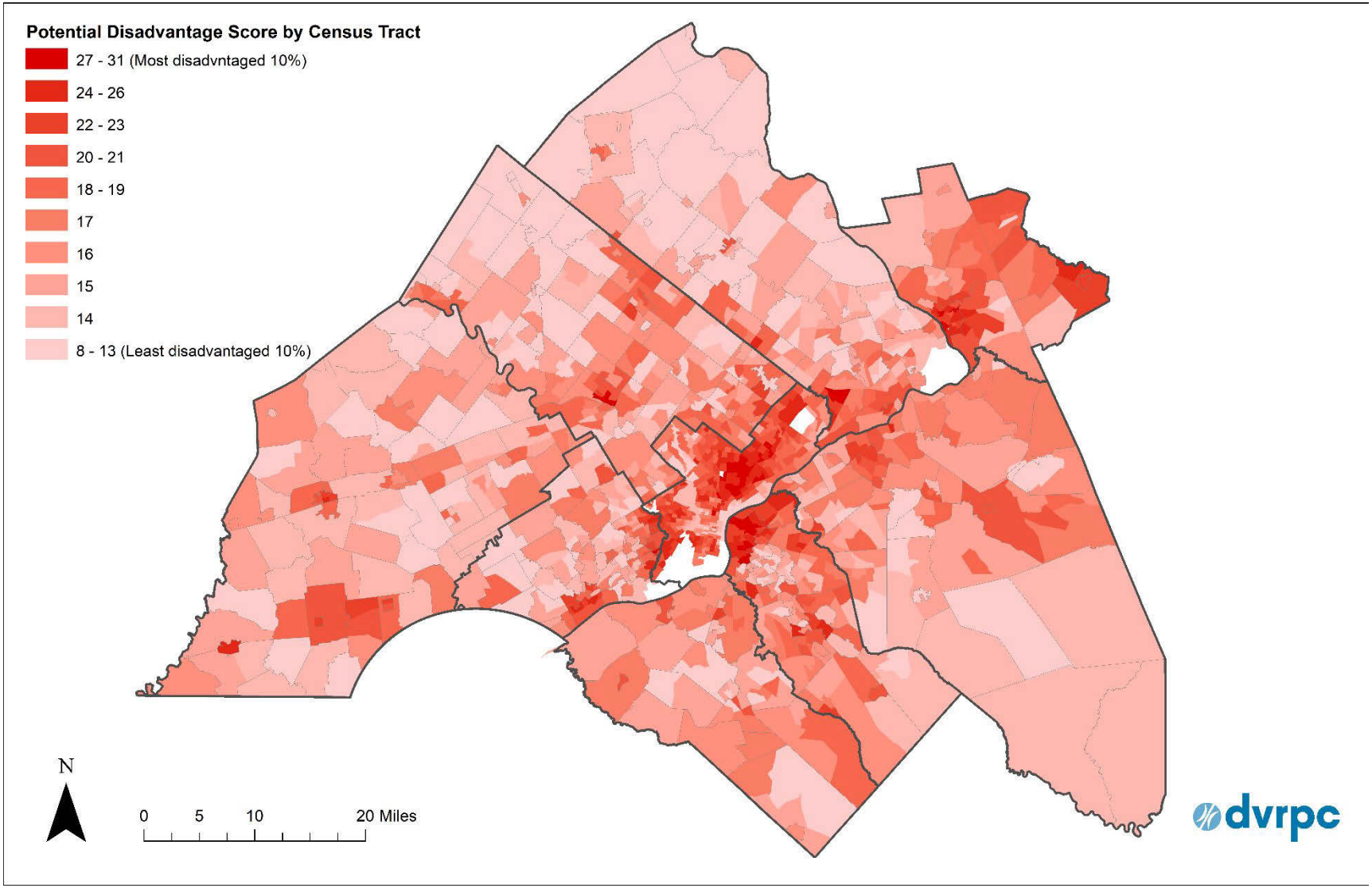
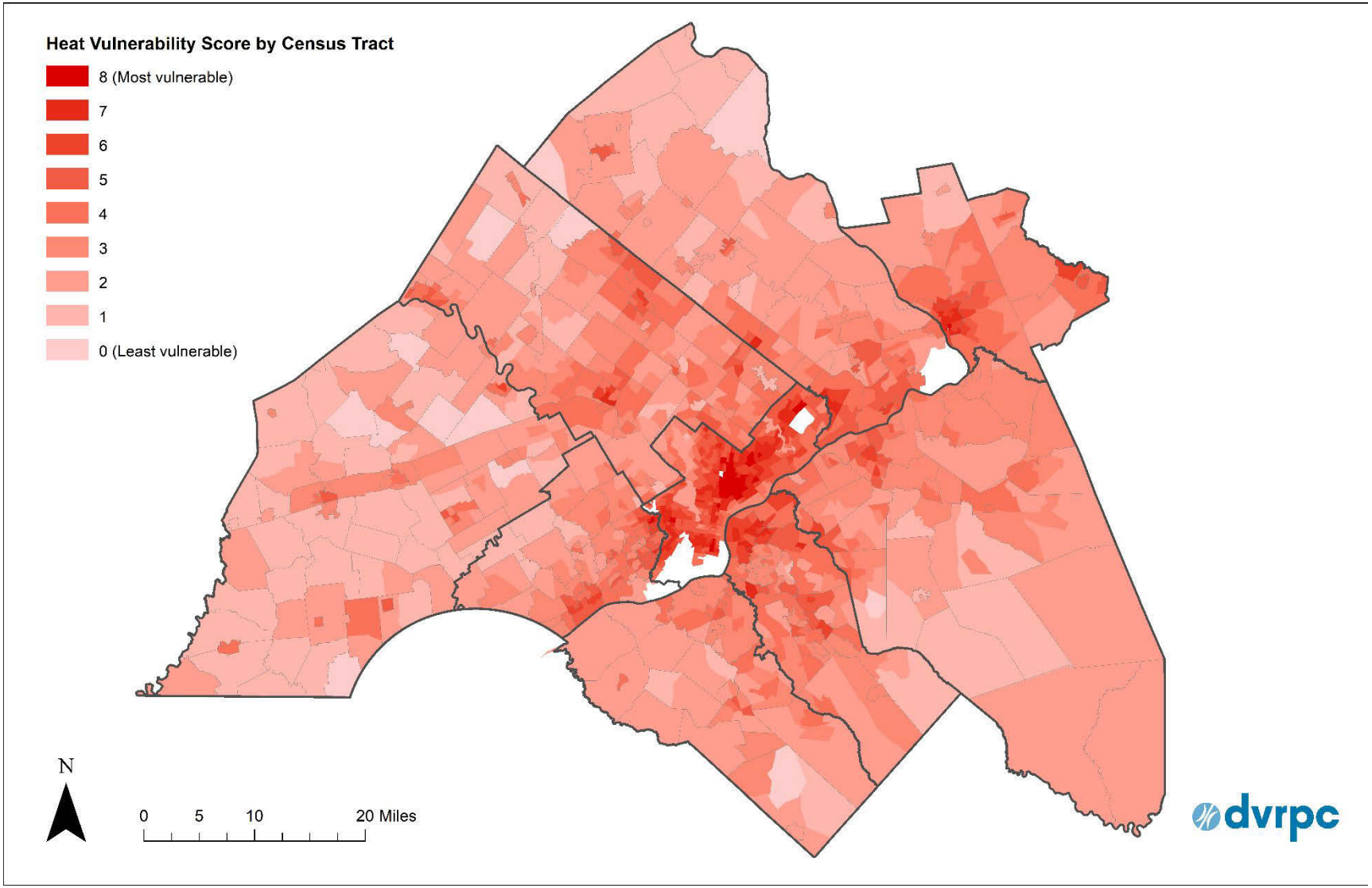
DVRPC's Indicators of Potential Disadvantage

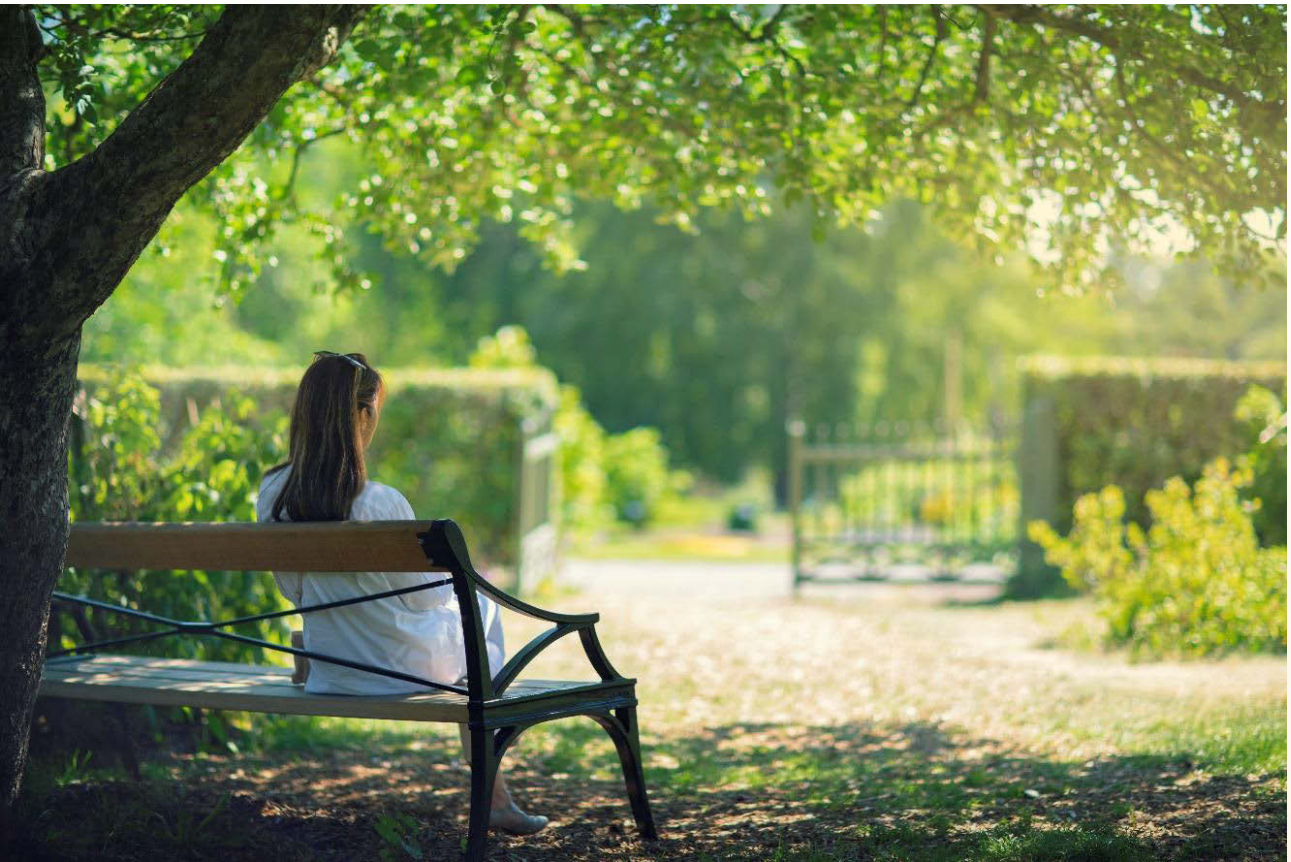


Heat Vulnerability Index



Mitigation Measures – Trees/Vegetation

- Provide shade, stormwater management
- Improve air quality, sequester CO_2



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Mitigation Measures – Cool Roofs

- Reflective roofing material or coating, often white
- Reduce energy costs in the summer

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Mitigation Measures – Green Roofs

- Vegetative layer on roof top
- Improve insulation, stormwater management
- Reduce air pollution and sequester CO_2

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Mitigation Measures – Cool Pavements

- More reflective
- Decreases formation of ground-level ozone
- Can be combined with permeable pavements to mitigate stormwater and increase safety

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Mitigation Measures – Cooling Public Spaces

- Bus shelters
- Shade structures
- Pools/spray grounds

Prepare and Adapt

Forecast, Monitor, Notify

- Typically done through county public health offices

Education and Awareness

- Inform prior to first heat wave of season
- First heatwave is the deadliest

Responses to Heat Waves

- Check water and electrical infrastructure
- Resident buddy programs
- Cooling centers
- Outdoor cooling sites

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Thank You!

Adam Beam, AICP
Senior Research Analyst
abeam@dvrpc.org

For more information please visit,
www.dvrpc.org/EnergyClimate

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

Sidewalk Gaps

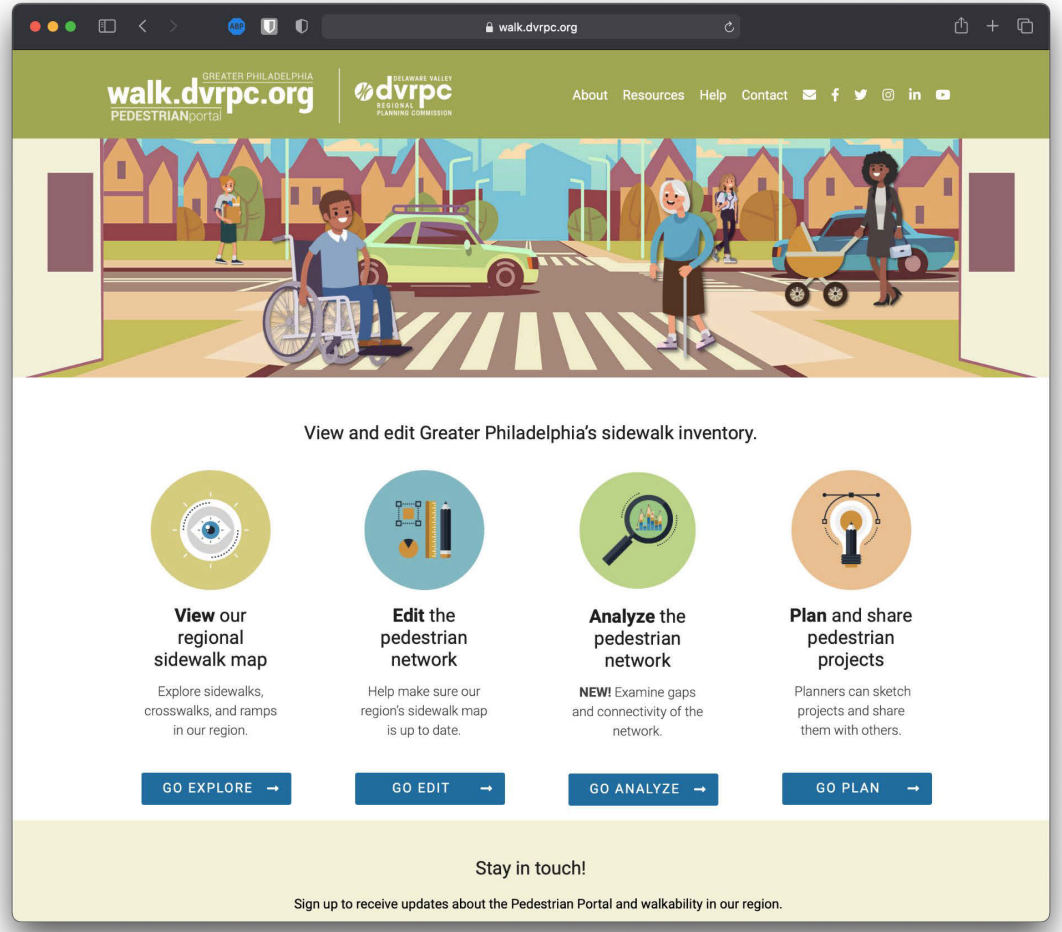
RTC | 6/8/2021

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

Aaron Fraint, AICP
Logan Axelson

Background

- Regional inventory of sidewalks collected as GIS data
- walk.dvrpc.org was created to allow the public to:
  - explore the dataset
  - find & fix errors/omissions
- It also allows planning partners to sketch and share improvement project concepts



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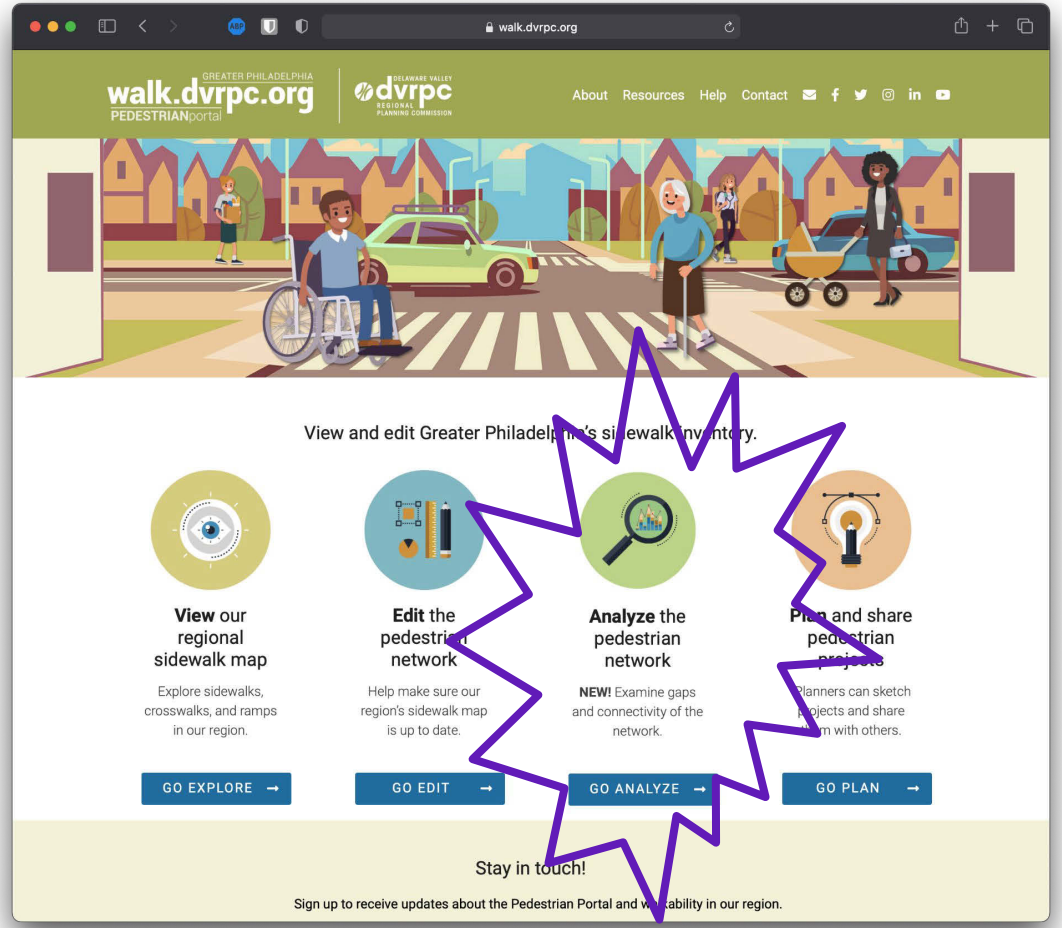
Gap Analysis

1. Identify a variety of definitions of what constitutes a “gap”
2. Develop analytic pipelines to transform raw data into insights
3. Design an interactive visualization that showcases the analytic outputs in a user-friendly fashion



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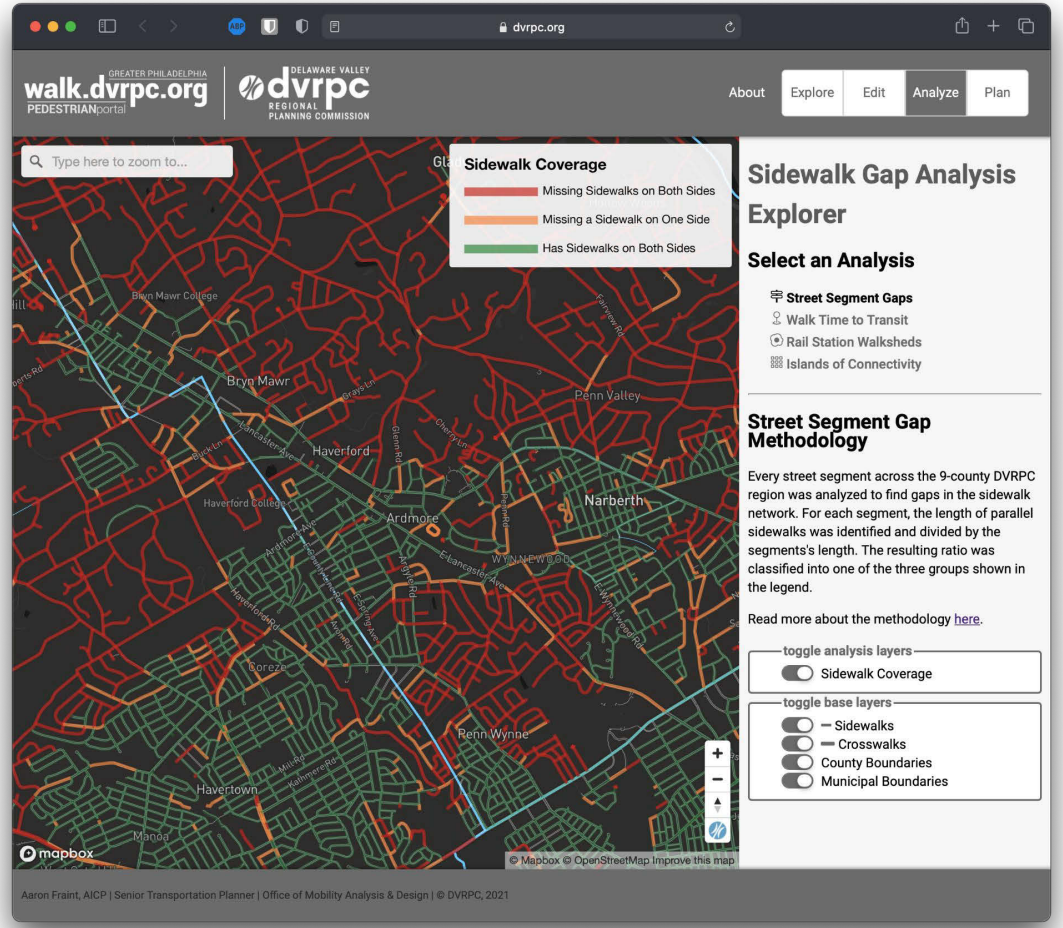
Which roadway segments are missing sidewalks?



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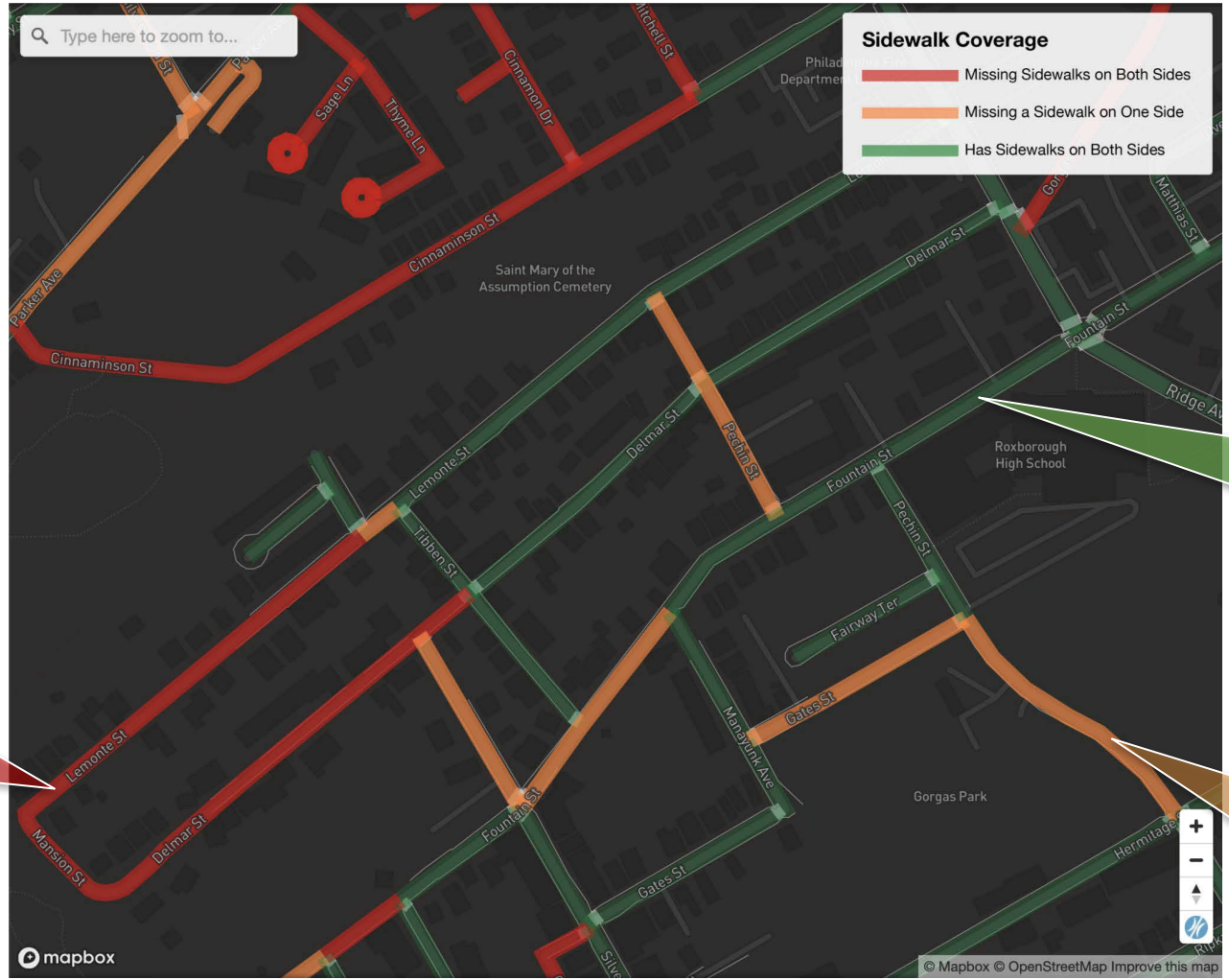

Green lines show where sidewalks exist on both sides of a street

Red lines show streets without any sidewalks

Orange lines show where partial sidewalks exist along a street

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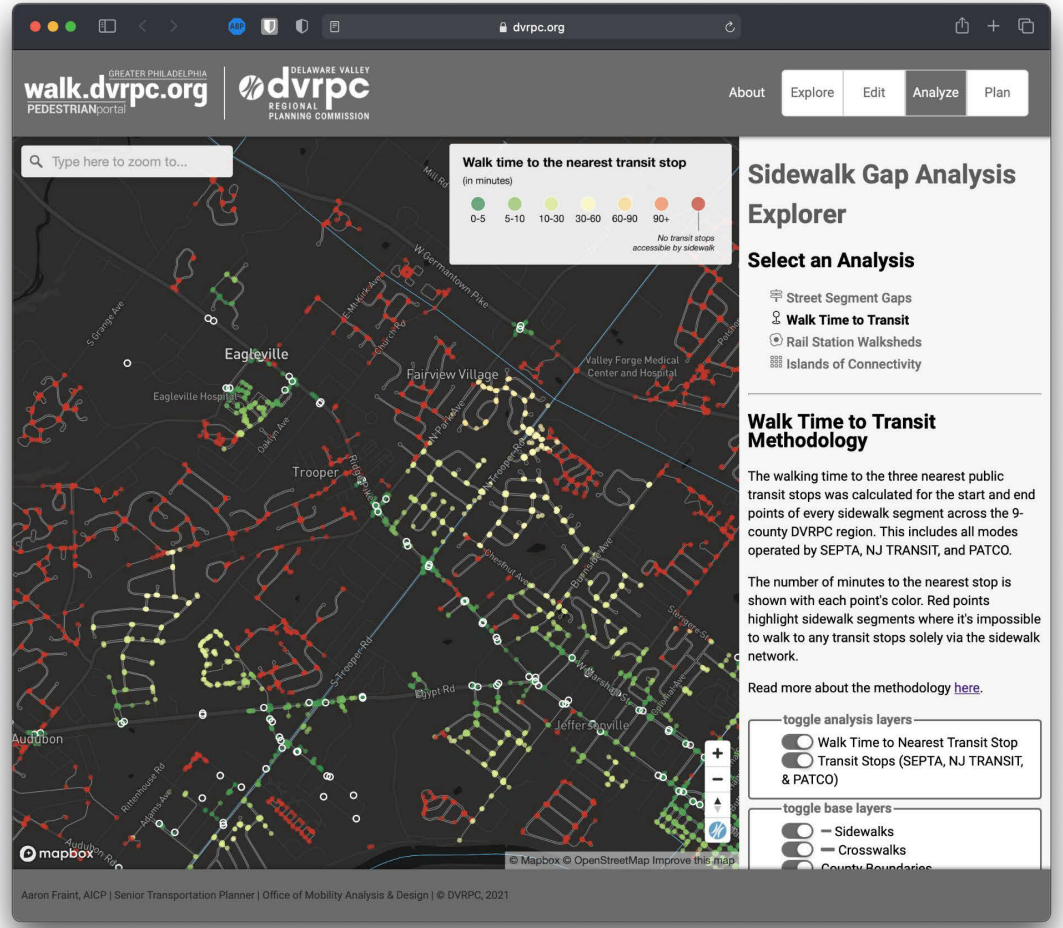
Where is there a disconnect between transit stops and the sidewalk network?



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Transit stops are shown with a white outline

Green, yellow, & orange dots indicate walking time to nearest transit stop along the sidewalk network

Red dots identify portions of the sidewalk network that are disconnected from all modes of transit

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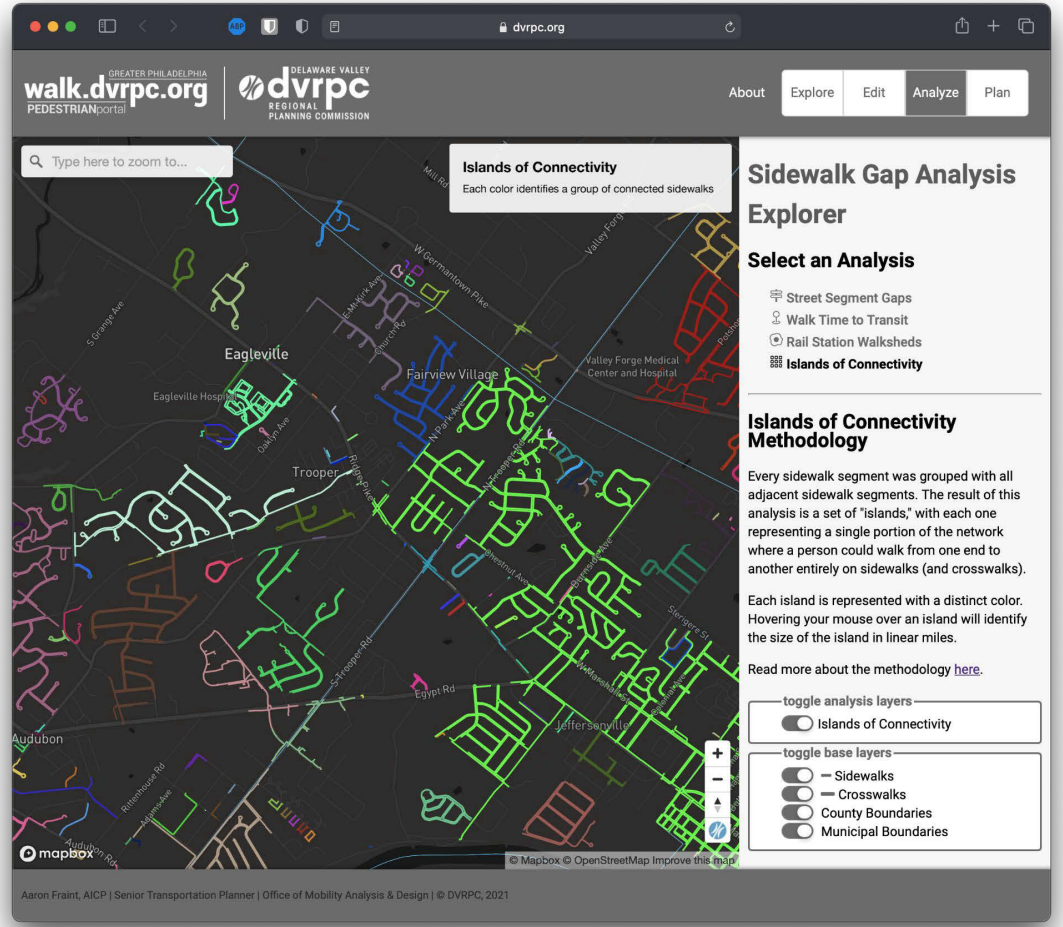
Where are the islands of sidewalk connectivity?



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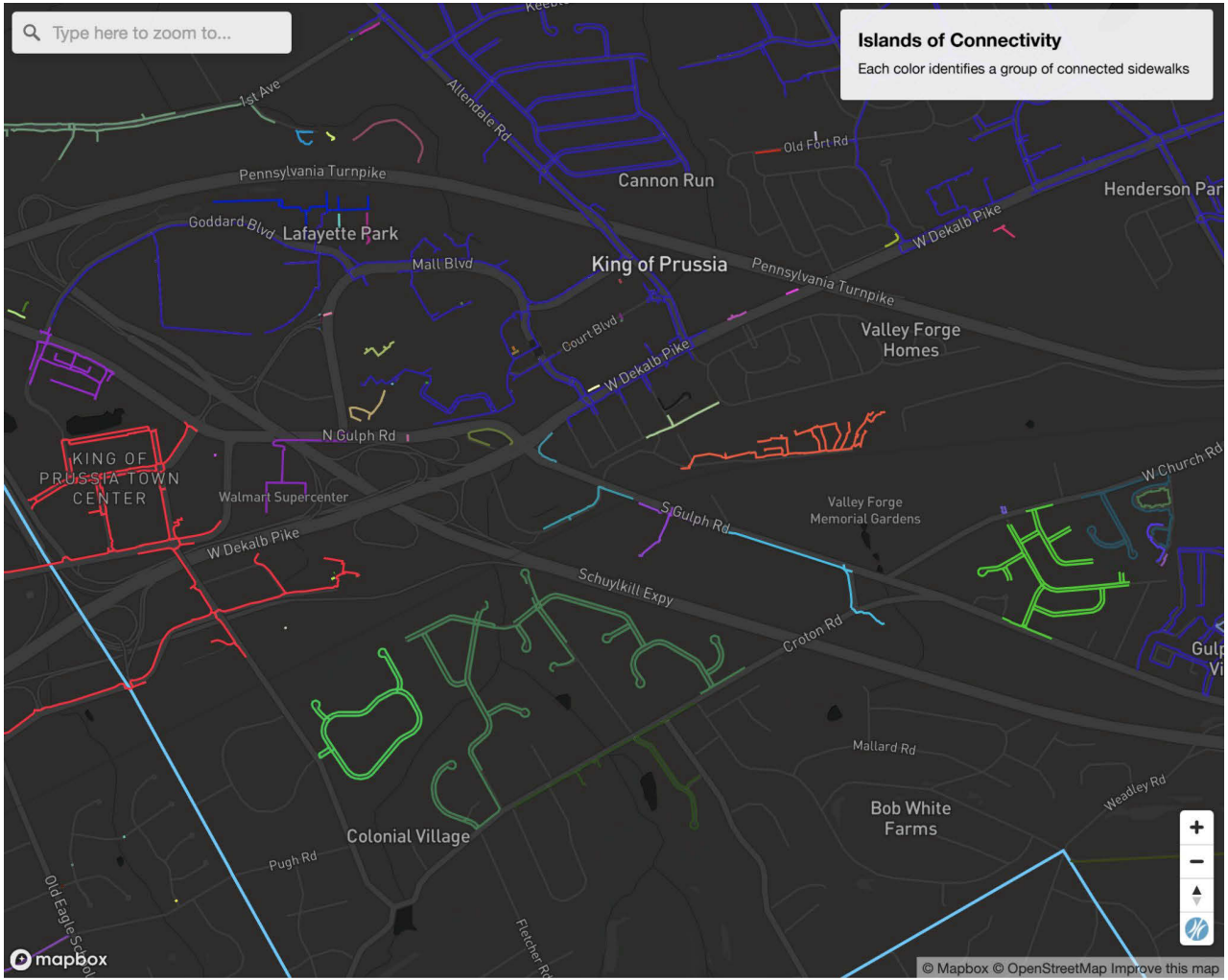
Type here to zoom to...
Islands of Connectivity
Each color identifies a group of connected sidewalks
1st Ave
Allendale Rd
Pennsylvania Turnpike
Cannon Run
Old Fort Rd
Henderson Par
Goddard Blvd
Lafayette Park
Mall Blvd
King of Prussia
W Dekalb Pike
Pennsylvania Turnpike
Court Blvd
Valley Forge Homes
W Dekalb Pike
N Gulph Rd
KING OF PRUSSIA TOWN CENTER
Walmart Supercenter
S Gulph Rd
Valley Forge Memorial Gardens
W Church Rd
W Dekalb Pike
Schuylkill Expy
Croton Rd
Mallard Rd
Weadley Rd
Bob White Farms
Colonial Village
Pugh Rd
mapbox
© Mapbox © OpenStreetMap Improve this map

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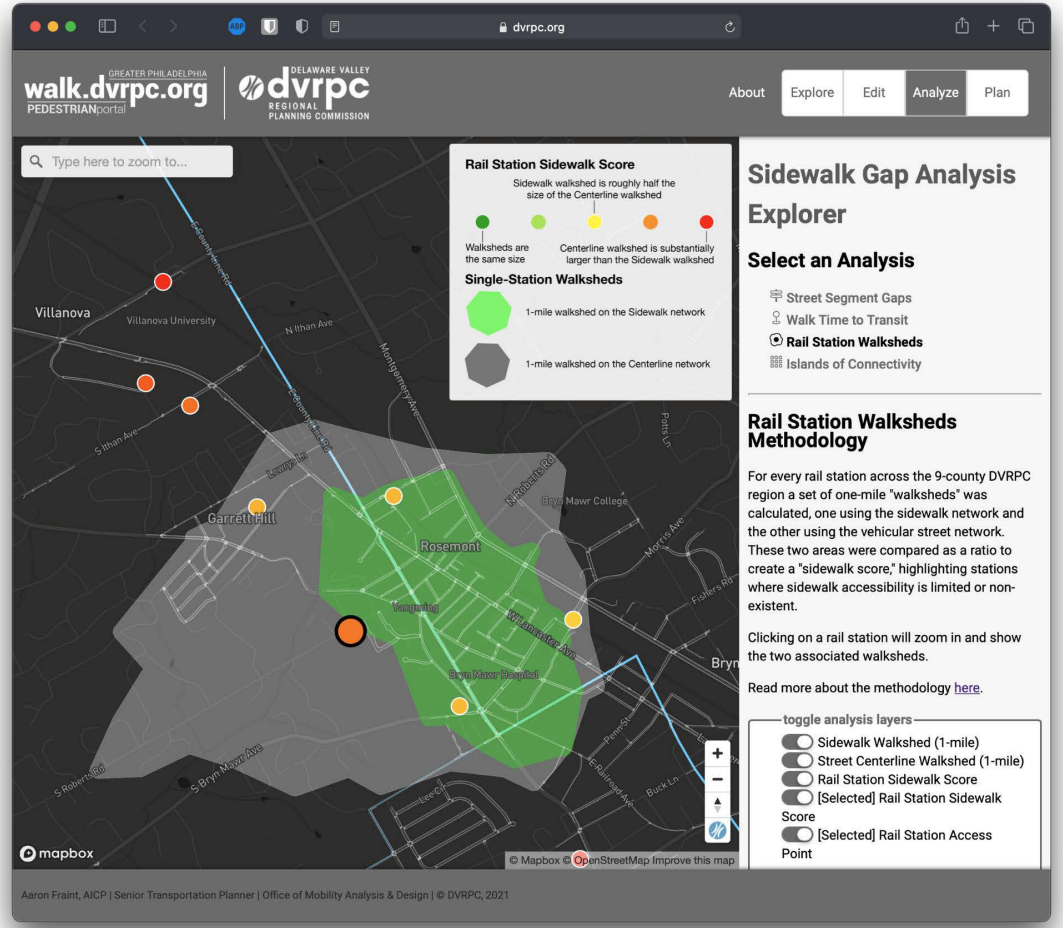
Integration with other work program projects:

- **Rail Station Walksheds** were identified for the ongoing "**Access Score**" project
- Click on a station point to see walkshed profiles that compare the sidewalk network to the OpenStreetMap centerline network



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Grey polygon shows 1-mile walkshed on OpenStreetMap centerlines

Green polygon shows 1-mile walkshed on the sidewalk network

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Next Steps:

Year 1: Support for existing sidewalk funding programs

Year 2: Pilot technical assistance program

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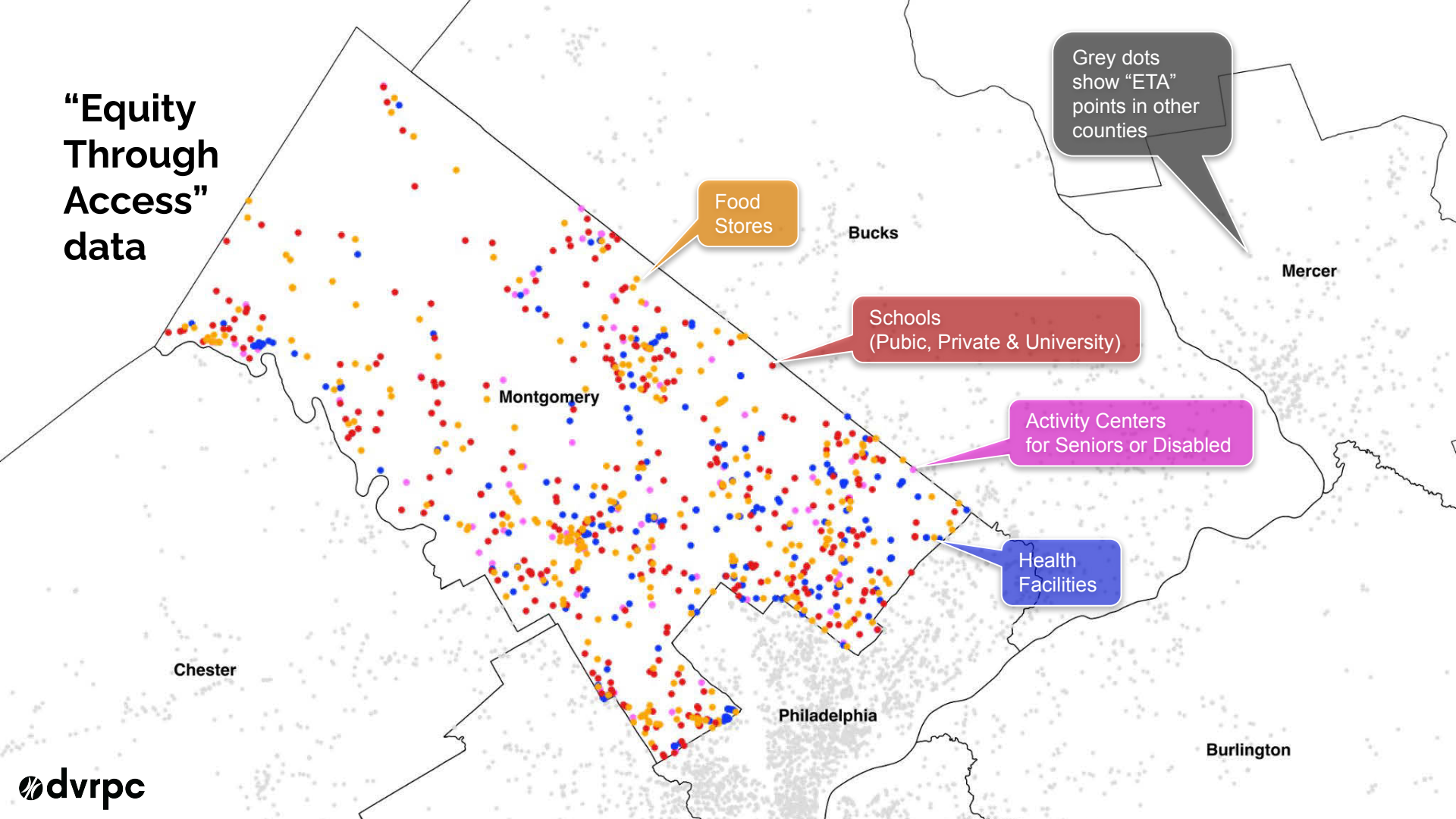
How can this analysis benefit existing programs?

“Equity Through Access” data



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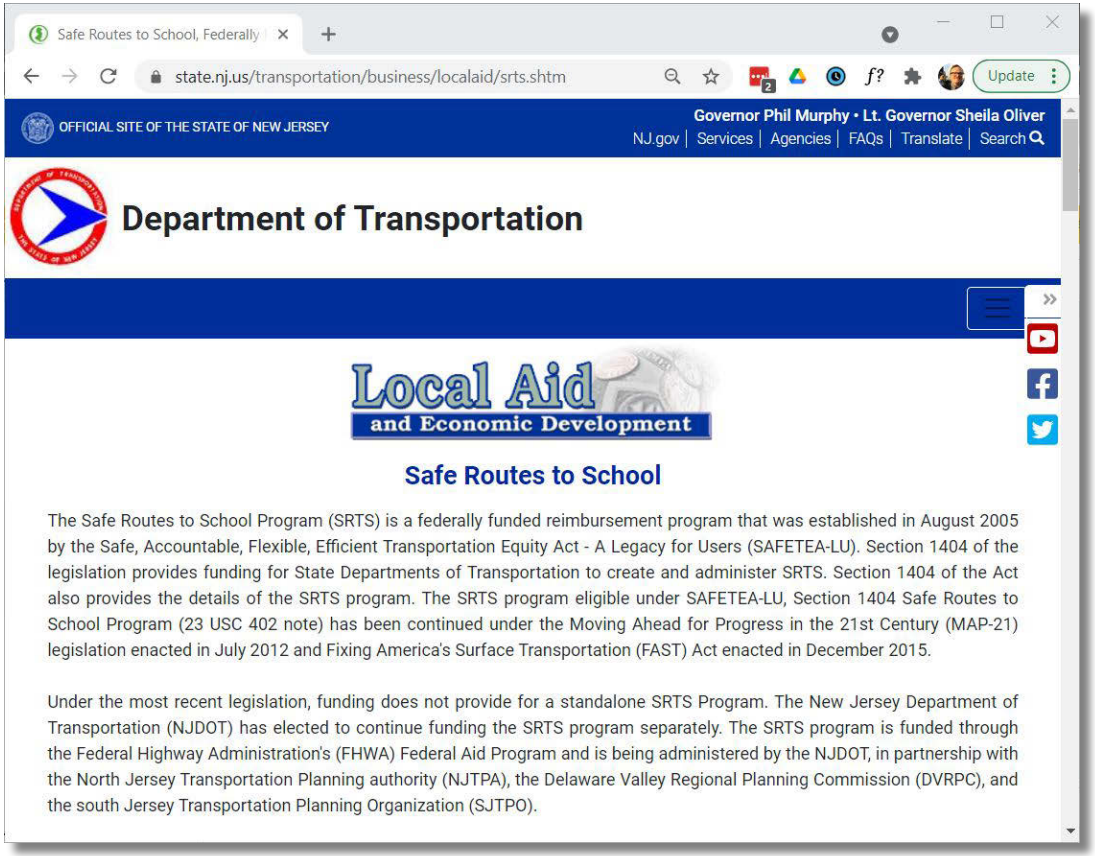
How can this analysis benefit existing programs?



Next Steps:

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

Pilot Technical Assistance Round:

- Screening and technical assistance for sidewalk projects with important local and regional connectivity benefits
- Refine selected local sidewalk projects into 'design and shovel ready' candidates for typical competitive grant programs

We want to hear from you!

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Office of Mobility Analysis & Design

Logan Axelson
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Senior Transportation Planner

Office of Transit, Bicycle, & Pedestrian Planning