

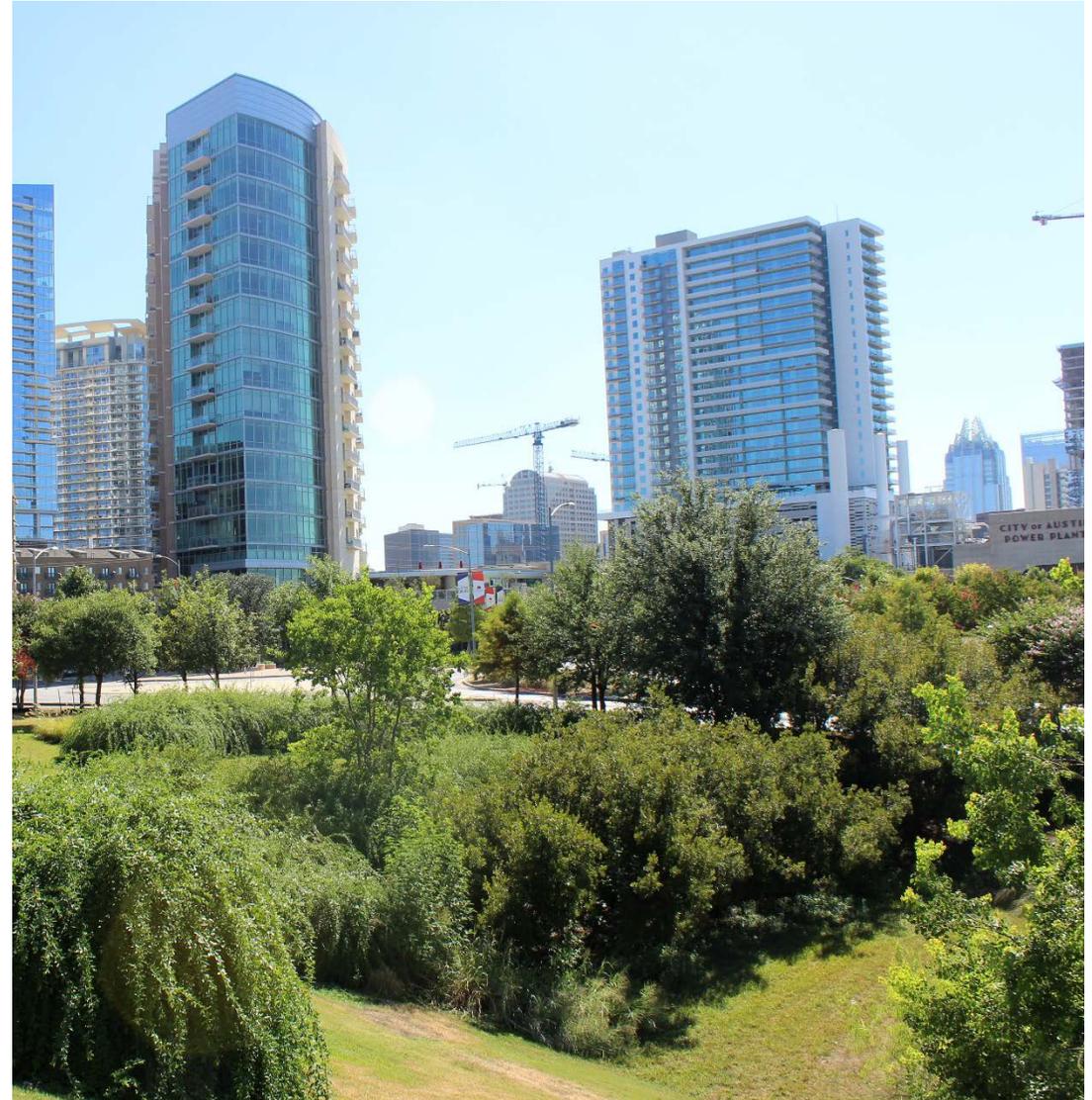
CodeNEXT Draft 3

Watershed Analysis and Proposals

Council Work Session: March 20, 2018

Overview of Presentation

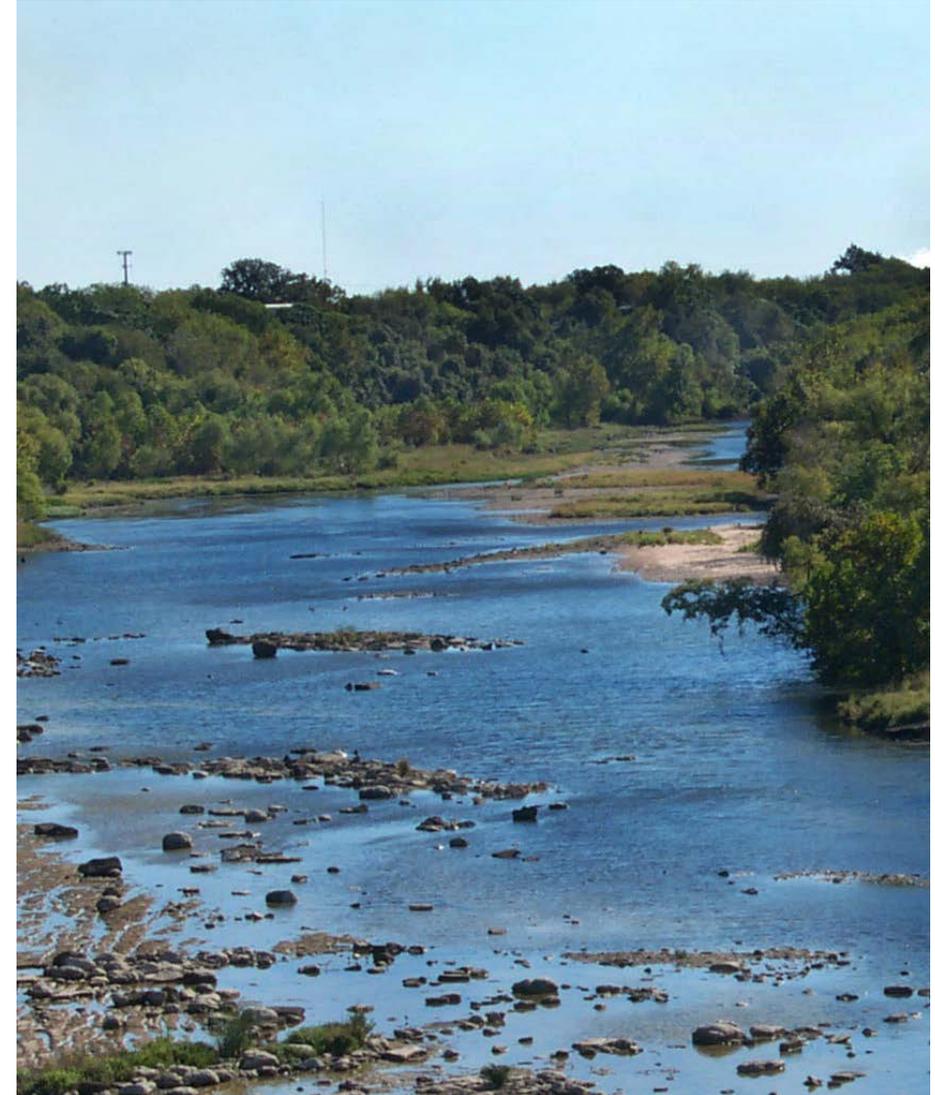
- Balancing Austin's priorities
- Maintain existing watershed protections
- Impervious cover analysis
- Flood risk reduction for redevelopment
- Green stormwater infrastructure (GSI)
- Residential development



Maintain Existing Watershed Protections

CodeNEXT proposes to preserve existing watershed regulations, including:

- Drainage and floodplain standards
- Stream & lake buffers
- Watershed impervious cover limits
- Critical environmental feature setbacks
- Steep slope protections
- Cut & fill limits
- Erosion & sedimentation control requirements
- Water quality treatment standards
- Tree protections



A photograph of a modern landscape featuring a paved path, concrete curbs, and various plants including tall grasses and trees under a clear blue sky. The scene is captured from a low angle, looking down the path. The path is dark asphalt, and the curbs are light-colored concrete. The plants are a mix of green and brown, suggesting a dry climate. The sky is a clear, bright blue. The overall scene is well-maintained and modern.

Impervious Cover Analysis

Purpose of Impervious Cover Analysis

- Compare existing impervious cover, current maximum entitlements, and proposed CodeNEXT maximum entitlements
 - 100-year floodplain and drainage infrastructure implications
- Understand areas of change

Draft 3 Impervious Cover Analysis

Area	Existing Impervious Cover	Current Code: Maximum Impervious Cover	CodeNEXT Draft 3: Maximum Impervious Cover	Difference between Current and Proposed Entitlements
Urban Watersheds	50.6%	64.6%	63.4%	-1.14%
Localized Flooding Problem Areas	48.8%	57.4%	57.3%	-0.03%
Zoning Jurisdiction	26.8%	45.8%	45.4%	-0.44%

Note: This analysis does not account for steep slopes, critical environmental feature setbacks, landscape, and protected trees. These requirements potentially lower the total amount of impervious cover for any given parcel.

A photograph of a river with a large rock in the center, overlaid with a semi-transparent grey banner containing the text 'Flood Risk Reduction'. The river water is dark and turbulent, with white foam from the rock. The banks are covered in green grass and some brown leaves. The text is in a bold, dark blue font.

Flood Risk Reduction

Challenges for Flood Risk Reduction

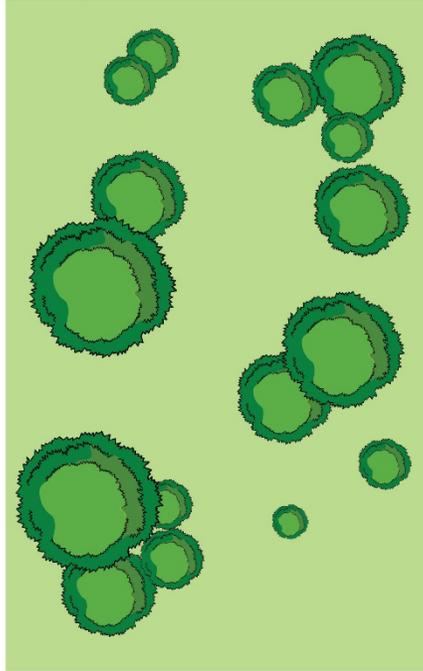
- Sites built before drainage regulations were introduced in 1974 lack stormwater controls, are often highly impervious, and can contribute to flooding and erosion
- Redevelopment in Austin's central core has put even greater pressure on existing infrastructure, which is often aging and undersized
- Current code does not require redevelopment to provide flood risk reduction in most cases



Draft 3: Flood Risk Reduction Proposal

- Redevelopment must provide proportionate share of flood risk reduction for new and redeveloped impervious cover
- Applies to site plans (commercial & multifamily projects) & residential subdivisions
- Limit post-development stormwater peak flow rates from new and redeveloped impervious cover to that with **zero impervious cover** (thus same as “greenfield” development)
- Multiple options to comply: on-site detention, participation in RSMP (Regional Stormwater Management Program) with off-site drainage improvements and/or payment-in-lieu of detention
- Options dependent on site-specific drainage analysis and must be approved by City
- Projects must still prove no additional adverse downstream impacts

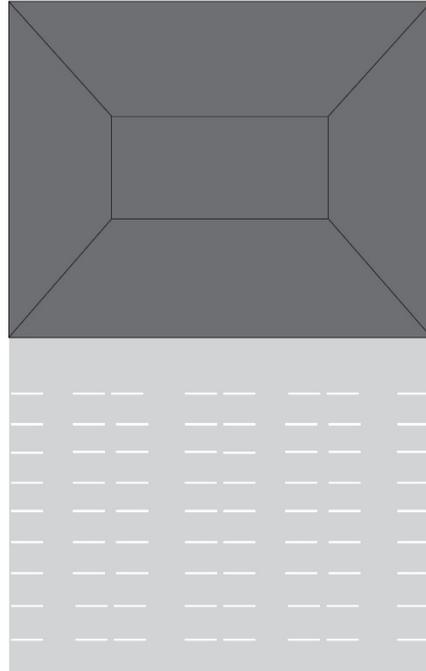
Undeveloped Land
0% Impervious Cover



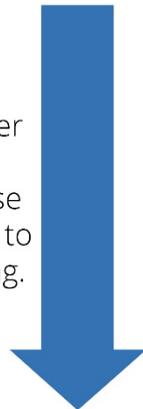
Natural land absorbs rainfall and reduces stormwater runoff.



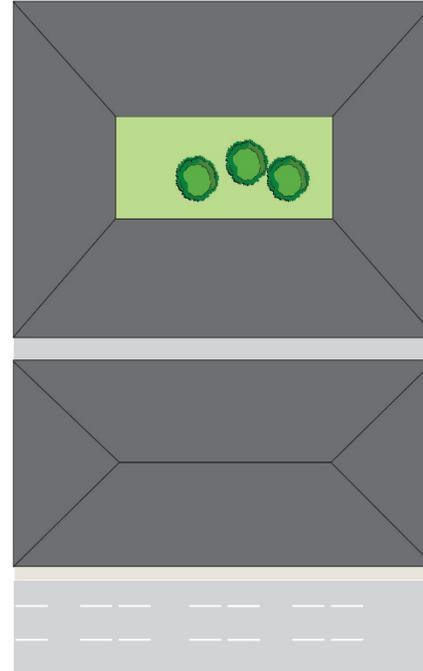
1960s Development
No stormwater management



Sites built before flood requirements were introduced in 1974 lack stormwater management, and the runoff from these sites can contribute to downstream flooding.



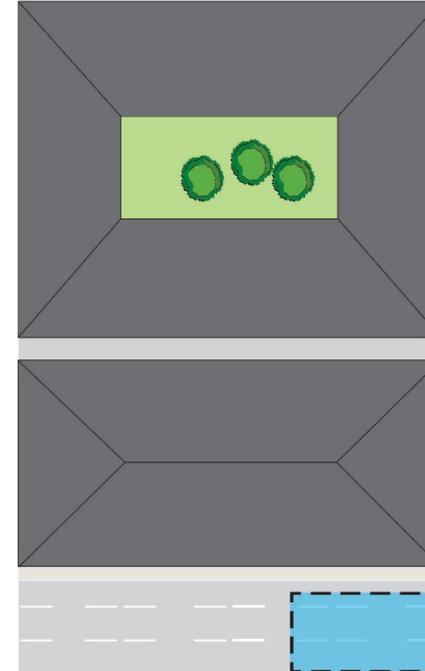
Redevelopment of 1960s Site
Current Land Development Code



Under current code, redeveloping sites cannot increase stormwater runoff. This means that they continue contributing to downstream flooding.



Redevelopment of 1960s Site
Under CodeNEXT Proposal



CodeNEXT proposes redevelopment manage flood waters, as is currently required for projects on undeveloped land. This would be achieved through detention ponds or offsite improvements in proportion to the site's impact.



Creek Flood Modeling

Impact of proposed CodeNEXT regulations for commercial/multifamily redevelopment

- Peak flooding depths were reduced by up to 4.8 inches
- Up to 17% reduction in peak flows
- Generally small reductions in floodplain extent

Impact of maximum residential buildout

- Minimal increase in peak flooding depths—0.4 inches on average
- Average increase in peak flows of 2%

Localized Flood Modeling

Del Curto Study Area

Impact of proposed CodeNEXT regulations for commercial/multifamily redevelopment

- Peak flooding depths were reduced by up to 4.8 inches
- Reduced peak flows by up to 23%
- Reduction of flood depth >1 inch for
 - 7 buildings in the 2-year storm
 - 32 buildings in the 100-year storm

Impact of maximum residential buildout

- Peak flooding depths were increased by up to 1.4 inches
- Increased peak flows by no more than 3%
- Increase of flood depth >1 inch for
 - 1 building in a 2-year storm event
 - 0 buildings during all other storm events

Other Changes New to Draft 3: 23-10E (Drainage)

- Clarified that Regional Stormwater Management Program (RSMP) eligibility for new and redeveloped impervious cover will be based on a comparison to existing conditions
- RSMP participation will be based on a comparison to undeveloped conditions (e.g., the payment will be calculated as if the site was undeveloped)
- Added exemption from requirement to reduce peak rates of discharge to undeveloped conditions for existing impervious cover associated with City roadway projects*

*Inadvertently left out of initial Draft 3 publication. This language will be included in the updated staff recommendation.



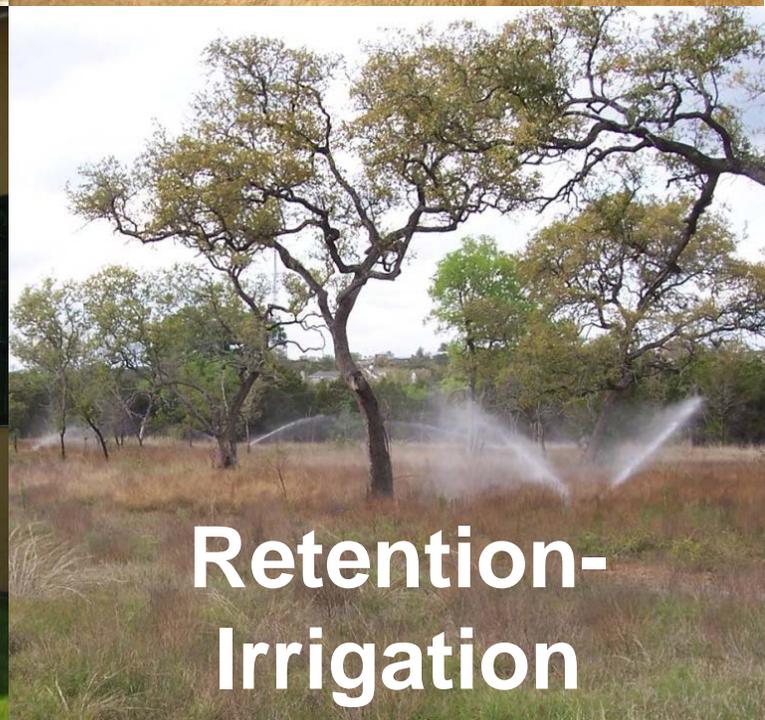
Green Stormwater Infrastructure

Green Stormwater Infrastructure

- **Infiltrate** to mitigate the impacts of impervious cover
 - Improve stream baseflow
 - Pollutant removal
 - Reduce creek scour and erosion
 - Improve aquatic habitat
 - Enhance recreational values
- **Conserve** potable water indoors and outdoors
- **Green stormwater infrastructure** for resiliency



Green Stormwater Infrastructure



Draft 3: Green Stormwater Infrastructure Proposal

Simplified beneficial use proposal to require the use of green stormwater infrastructure to capture and treat the entire water quality volume

- Conventional water quality controls (e.g., sand filter) allowed under certain conditions, including residential subdivisions, hot-spot land uses (e.g., auto repair), and regional ponds
- Sites with greater than 80% impervious cover may also use conventional controls, but would need to capture stormwater for onsite use
- Administrative modification for unique site conditions

A photograph of a modern residential building with a wooden deck and a satellite dish on the roof. The building has light blue siding and dark blue accents. A semi-transparent blue box is overlaid on the image, containing the text "Residential Development: Proposed Drainage and Environmental Requirements".

Residential Development: Proposed Drainage and Environmental Requirements

Goals and Considerations

- Goal: Tailor applicable regulations and permit review procedures to a project's overall scale and intensity
- Opportunity to enhance outcomes for 1 – 2 unit construction and encourage missing middle housing
- Seeking to balance affordability goals with avoidance of drainage and environmental problems
- Analyses in progress to assess potential impacts on DSD resources and permitting process

New Residential Development Regulations

23-2A-3: Residential Development Regulations

- Establish the same environmental and drainage requirements for 1 – 6 units:
 - 1 to 2 units: Provides a higher level of environmental and drainage review than current practice
 - 3 to 6 units (“missing middle”): Creates a new, scaled and streamlined single-permit process for 3 – 6 unit development on residentially-platted lots
- Over 6 units: Maintain requirements for full site plan and building permit

Major Changes: 1 – 2 Units

- Current practice includes impervious cover, floodplain, and erosion hazard zone review
- Draft 3 proposes the following requirements:
 - Engineer's certification of no negative drainage impacts to adjacent properties;
 - Creek buffers (1986 Comprehensive Watersheds Ordinance, 2013 Watershed Protection Ordinance);
 - Construction on slopes requirements (Post-1986 Comprehensive Watersheds Ordinance); and
 - Cut/fill limits

Major Changes: 3 – 6 Units

- Creates a new, scaled single-permit process for 3 - 6 unit development on residentially-platted lots
- Offers a faster, lower-cost path for residential projects that provide a diversity of housing types while maintaining impervious cover limits and environmental/drainage requirements of 1 - 2 family projects
- Qualifying projects must:
 - be located outside the Barton Springs Zone;
 - not exceed 45% impervious cover; and
 - not require a Land Use Commission variance

Drainage and Environmental Requirements for 1 – 6 units

Environmental

- Impervious cover (zoning)*
- Tree protection*
- Creek buffers (based on date of subdivision and for all properties along Lake Austin)
- Steep slopes (based on date of subdivision)**
- Cut/fill restrictions**
- Erosion and sedimentation controls*

Drainage

- Floodplain*
- Erosion hazard zone*
- Engineer's certification that any drainage changes will not negatively impact adjacent properties

*Currently reviewed for 1-2 unit residential building permit

**Not required in Urban watersheds

Residential Development (1 - 6 units)

Draft 3

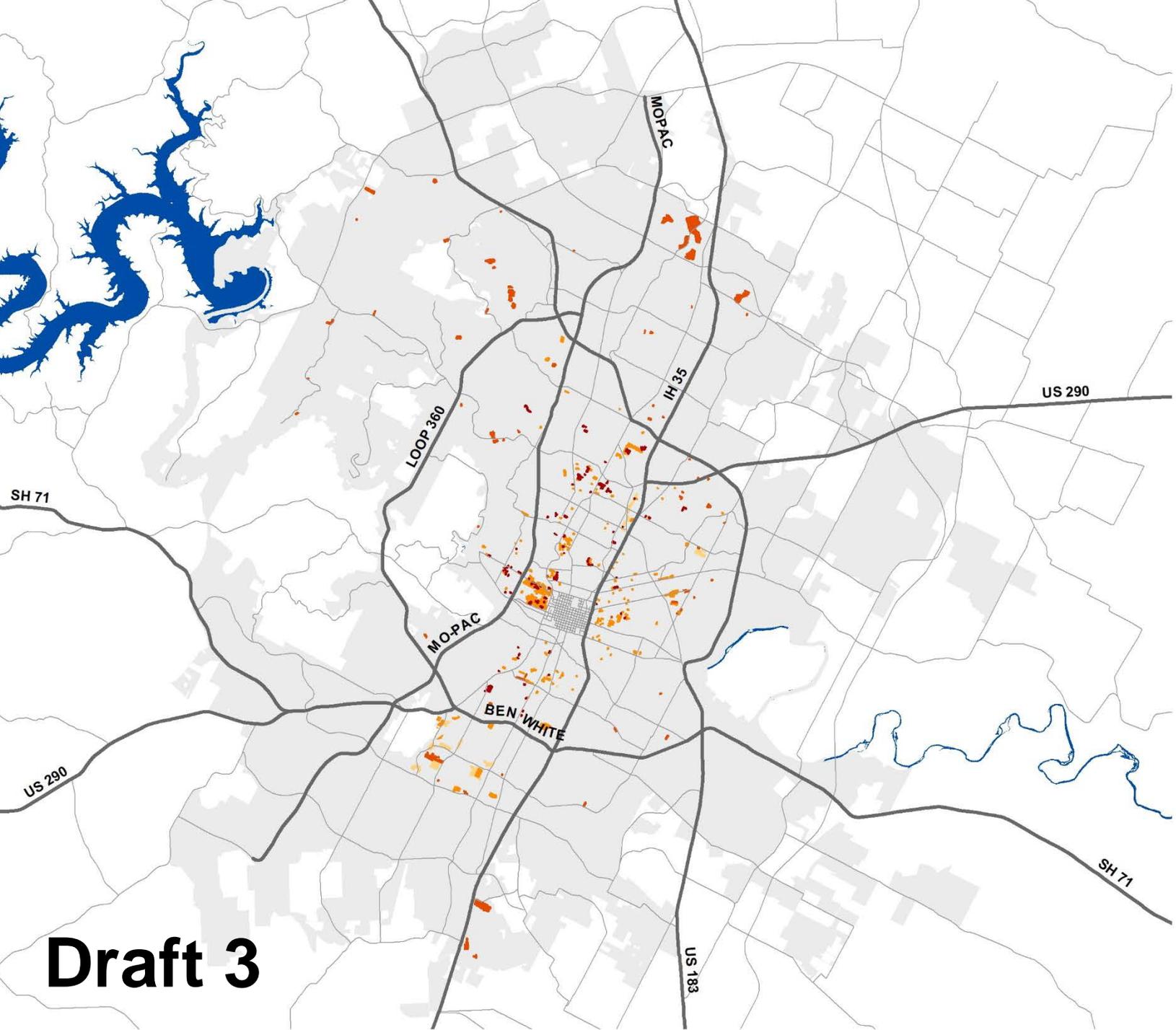
Parcels	Parcels with creek buffers		Parcels with slopes over 15%*		Total Eligible Parcels
	Pre-86**	Post-86	Pre-86	Post-86	
1 – 2 unit	17,702	4,431	19,522	11,696	171,231
3 – 6 unit	190	182	138	525	3,742
Total	17,892	4,613	19,660	12,221	174,973

*Not including Urban watersheds, parcels with < 25 square feet of high slope area, or areas within buffers

**Subdivisions with no recorded date assumed to be pre 1986

Potential 3 - 6 unit parcels

-  R3
-  R4
-  RM1A
-  RM1B
-  Zoning Jurisdiction



Draft 3



A scenic view of a river with rapids and a forested hillside in the background. The river flows over several large, dark rocks, creating white water rapids. The background is a dense forest of green trees on a hillside under a clear blue sky. The foreground shows the turbulent water and some smaller rocks. A semi-transparent white banner is overlaid across the middle of the image, containing the text "Questions?".

Questions?