

EXCERPTS

Acronyms in Document:

CCD- City and County of Denver (the City, the Mayor and his Administration)

CDOT- Colorado Department of Transportation

CPGC- City Park Golf Course (Detention, part of **P2PH**)

GLO- Globeville Landing Outfall (part of **P2PH**)

MATT- Multi-Agency Technical Team (formed by **CDOT**, **RTD**, **CCD**, and **UDFCD**)

NDCC- North Denver Cornerstone Collaborative (6 Portfolio Developments combined by Mayor)

P2PH (or **P2P**)- Platte to Park Hill: Stormwater Systems (4 Drainage Projects for a 100-year storm)

P3's- Public Private Partnerships

PCL- Partial Cover Lowered (I-70 PCL, lowered portion of the Central 70 Project, part of the **NDCC**)

PHGC- Park Hill Golf Course (Detention, part of **P2PH**)

UDFCD- Urban Drainage and Flood Control District

Sep 2014- City and County of Denver (CCD) Storm Drainage Master Plan

A Master Plan that is the blueprint for all drainage concerns and **"..is updated every 5 years in order to identify and alleviate present and future drainage problems of the city."** ---7/186 (3)

It identifies **\$1.5B** in needed citywide upgrades. **Doesn't mention any need or plan for an Open Channel, GLO, or 100-year protection for Montclair Basin** (even though the City began pursuing all of that in 2014 before this Master Plan came out). The City's "Level of Service" handles 2-year events for residential and 5-year for commercial. Higher flows are then carried in gutters and streets. In several places the Master Plan highlights that **creating a City-wide 100-year plan is difficult and expensive** and not the norm for older established neighborhoods. However, there are several harbingers of things to come in the various sections, foreshadowing the Developer-friendly direction the City was taking, including all the ways to make the Master Plan partner with Development. And, to be sure, **the upcoming 2019 Master Plan will certainly hail all the virtues and necessities of 100-year protection via P2PH (and 39th Ave Open Channel, GLO, CPGC and PHGC Detention).**

Excerpts Include:

"Adaptive Urban Stormwater Management and Level of Service

..Currently, it is Denver's policy to require drainage systems design to conform with the "Level of Service" goal of fully conveying, at a minimum, the minor or initial storm event within pipes or channels. "Minor" or "initial" storm is defined by the Denver Drainage Criteria as a 2-year storm event for residential properties and the 5-year storm event for commercial and industrial districts. Runoff from storm events exceeding the minor storm up to the 100-year storm is conveyed in streets up to 1 foot deep in the gutter or in surface drainageways. Open channels, gulches, streams, rivers and creeks are designed to convey the 100-year storm event. As the City and County of Denver continues to densify, land values have increased resulting in higher easement and right-of-way costs for open channels. (A statement actually working against the notion of Open Channels being the best option.) Also, parks and other open space

areas continue to be improved to provide a more active and urban setting (*..ie- more indication of the Mayor's vision of what Parks and Open Spaces should be- "active and urban", vs. peaceful and pastoral as they have been..*) **that limits the availability of storage for stormwater detention.** (*(Ironically, they found a way to use one of their "active and urban" settings- the new City Park Golf Course (CPGC) with its giant new Club House in the center for "larger events", to also provide Storm Detention for Platte to Park Hill (P2PH) to protect large City-favored developments further down-basin, like I-70 PCL.)*) **The City will continue to evaluate redevelopment areas for land acquisition for regional detention facilities to reduce peak flows.** (*This is exactly what they did to Park Hill Golf Course (PHGC) as the City looked at it not as valuable and necessary Open Space for residents as it has been, but as "redevelopment areas for land acquisition". So not only are they using the Northeast corner for storm Detention for P2PH, but are pushing to tear up the taxpayer-funded Easement protecting all of it and open much of it for Development, with "Pocket Parks" left for Open Space.)*) **The conveyance system must accommodate and improve the "Level of Service" provided by City drainage infrastructure."** ---8/186 (4)

"Cost effective implementation of a City-wide 100-year drainage system is not practical because of the significant capital cost of retrofit construction and limited annualized flood hazard reduction. Consequently, a phased program is recommended that prioritizes improvements to address current hazards while improving the minor storm system." ---8/86 (4)

(Improving the minor storm system wouldn't include such a huge 100-year project like P2PH unless something required 100-year protection, like a highway.)

"Primary Drainage Issues Confronting the City

- **In many areas, the existing City drainage system does not meet current drainage criteria,** whereby the initial storm (2-year recurrence for residential areas and 5-year recurrence for commercial/industrial areas) cannot be fully conveyed within pipes or dedicated drainage channels. **In other words, the current drainage system is generally undersized except for the major drainageways,** which have been improved over the years (e.g. South Platte River, Goldsmith Gulch, Harvard Gulch), (*..so how does building a 100-year system well downstream of all these undersized areas upstream help them?..*)

- **It is impractical and prohibitively expensive to upsize the storm drain system on a City-wide basis to provide for a 100-year storm,**

- **The Master Plan needs to understand the implications of redevelopment. Major projects such as Stapleton or Lowry benefited from scale economies and private-sector developer investments to construct new improvements to outfall to major drainageways. Smaller redevelopment projects such as those within North Cherry Creek basin or lower downtown lack the financing and cohesion to build regional drainage systems, and** (*..yet, the "Major projects" that benefitted from P2PH, like the Mayor's NDCC and I-70 PCL, didn't really follow this model. What was their plan to pay for this protection? Get the taxpayers to do it, and leverage funding from CDOT so you can have 100-year protection that*

immediately benefits all of these “private-sector developer investments”. In fact, the private-sector (P3’s) funded none of the storm improvements they received from P2PH. Meanwhile the “Smaller redevelopment projects” and most of the Montclair Basin residents don’t benefit in the near-term from this largess provided by the City via the taxpayers..)

• Because the existing drainage system consisting of a combination of storm drains and surface street flow does not strictly satisfy 100-year standards, City staff must review waiver requests on a regular basis and need a decision-making tool for evaluating the reasonableness of proposals.” ---10/186 (6)

*(Since the current City drain system doesn’t meet 100-year standards, the City allowed numerous City Developments to have insufficient drainage via waivers and the “reasonableness of proposals”, versus requiring less impervious cover and more green space to absorb water. Because the City pushed **Density everywhere and allowed maximum lot coverage for Developer Profits**, it created more and more **impervious cover** as a percentage of total area, greatly exacerbating the Drainage problems we all face. Again, Developer friendly short-sightedness has made the situation worse for everyone.)*

*(One of the **“Goals for the Master Plan Update Process”** includes the following):*

“• Provide a framework for continued urbanization of the City and County of Denver and implementation of the concepts and tenets of Blueprint Denver: An Integrated Land Use and Transportation Plan.” ---10/186 (6)

(Providing a “framework for the continued urbanization” of Denver doesn’t really include hard rules on adequate Drainage or Greenspace for Developments within City neighborhoods, but just more fuzzy Developer-friendly framework-speak so you can pass off the large and expensive drainage projects to the taxpayer, to fund giant solutions to the ever-increasing imperviousness of our city.)

“Threats or Obstacles Preventing Denver From Obtaining This Goal

• The relatively short timeframe and broad expanse of the study area poses a major challenge to evaluation of the basins in a street-by-street detail. Hydrologic modeling should be developed in sufficient detail to support the conceptual design and sizing of infrastructure. *(This is what **MATT** did, to support large Developments.)* **There should not be an effort to develop new technology or precisely define urban floodplains.**

• Because the City has limited enterprise funds for construction of new facilities, a 100-year storm drain system will likely be unachievable in most drainage basins. The plan needs to establish a rationale for appropriation of funds based upon current level of service drainage criteria.” ---10/186 (6)

*(Many question the rationale of so many funds being used to create a 100-year flood system (well above the “current level of service drainage criteria”) to protect a relatively small area with that level of protection, i.e.- primarily only the **I-70** and **NDCC** area. It’s the largest increase in Denver Stormwater Rates ever and limits the ability of the City to raise additional funds in the near future to help all the neighborhoods in Denver with meaningful protections.)*

"Parameters for Stormwater Runoff" (General Information that's good to know..)

..Generally, the imperviousness for residential areas was set at 52%, commercial/retail from 80 to 90% and industrial 90 to 95%.

One-hour rainfall depths for the.. model were obtained from the Urban Storm Drainage Criteria Manual, Volume 1 for the following recurrence intervals:

2-year 0.95 inches

5-year 1.34 inches

100-year 2.57 inches" ---18/186 (14)

From a slide at a **Platte to Park Hill** presentation in Mar 2016:

DENVER
THE MILE HIGH CITY

2014 Storm Drainage Master Plan

- Citywide planning tool that identifies basic stormwater needs
- Master Plan identifies and prioritizes projects, which consist of pipes that meet 5-year storm criteria
- **Platte to Park Hill was not included in the master plan because it solves the 100-year event**
- Modeling for Platte to Park Hill area indicated a need to consider higher level of criteria (100-year) due to high flood risk

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(Another basic lie: On the notion that P2PH wasn't included in the 2014 Master Plan because it's a 100-year system and the Master Plan only deals with 5-year systems, the following Excerpts from the Master Plan disagree):

“For purposes of this Master Plan, a 100-year alternative is proposed for Basin 0061-02 to intercept this runoff in the major storm and convey it south to the South Platte River. This improvement would prevent all flows from south of I-70 from entering the Globeville – Utah Junction (0059-01) Basin.”

---40/186 (36)

“Proposed 100-Year Alternative Capital Improvements:

Project F and F1: Park Hill Phase VI & VII

Storm drain alignments shown in the 100-year alternative from Projects F and F1 are the same alignments for the minor storm. Pipe sizes have increased for the 100-year alternative in order to reduce surface runoff depths in the street to 12-inches in the gutter in accordance with Denver street-depth criteria. This analysis is based on the July 2011 *Sand Creek (4400-02) and Upper Park Hill (0060-01, 4400-02 & 4500-01) Basins Final Drainage Study* by Atkins. See that study for additional alternatives.”

---44/186 (40)

“Project G: S. Washington Street Drain (100-Year Only)

A new storm drain network is proposed in S. Washington Street from E. Colorado Avenue to E. Florida Avenue and extending down E. Florida Avenue to the existing 96-inch storm drain stub-out at S. Broadway to convey 100-year flows. The 100-year storm drain network will alleviate flooding problems for businesses and properties along S. Pearl Street. The storm drain network will consist of 54-inch to 84-inch storm drains.” ---152/186 (148)