



South 223rd Green Street Study Report April 2024 this page intentionally left blank



Andrew Merges, P.E., Executive MPA
Public Works Director

Khai Le, P.E.

Project Manager / Transportation & Engineering

Tyler Beekley, P.E.

Manager / Surface Water & Environmental Engineering



Terry Wright, P.E. Senior Engineer

Bryce Corrigan, P.E.

Project Engineer

Brian Taylor, P.E. Senior Surface Water Engineer

Sam Wilson, P.E. Surface Water Engineer Paul Fuesel, PLA
Senior Landscape Architect / Urban Designer

Phuong Nguyen, PLA Senior Landscape Architect / Urban Designer

> Ginger Plaster Landscape / Urban Designer

Charles Cisneros, RPA
Senior Archaeologist / Environmental Services



Bryan K. Hawkins, P.E. Senior Geotechnical Engineer



Samantha Murray, MA Cultural Resources Director this page intentionally left blank

SOUTH 223RD GREEN STREET STUDY REPORT

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S 223rd St IURP&OLIB6WRWB6

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PREFACE

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\$\text{LPSRUWD\$\text{D\$\text{LMR}\text{CPD}\te 6RXWKUG 6WUHFRWULGRUN UHSRUMUFOSGHWKUHIXOWRV WKSURMHKWHDPWVSG\ DVIIOODVSUHOLPLQIXGHMAQ FRQFHSWWLVLQWHQQVKCGI D OLYQGRFRHQWWWWOGH XGDWHGV&LWSURMHFRRNY IRUZUG WXGH DGMDFHQNZSULØWHHGHMORSPHQWZGDSLWDORMHERSURMPHQWV DQGRU WDQVIQGLQJXXSRUW JVSURYGHWVKGHWQ FRQWHXXDOV REMHFWLXXXSRUWLQDQDOMVDQGWDNKOGHUQSXXRU SODFHPDLQJGHWQ decisions for corridor.



Looking east up S. 223rd St. from 7th Ave S.





Des Moines Marina bulkhead





Overlook I Park



Farmers Marke(Source: Des Moines Farmers Market Historic Lighthouse Lounge building Harbormaster Building at Des Moines Marina

THHO 6WUHINWS\IRFMV ROWN 6WUHENWEHOODULOH9LHZ MPHOW RI 6RWKUG DULM DQG&OLIIBIQM 6RXVK 7KV UHSRUWQFOIGHV preliminary design concepts to create a "green" corridor DOGSHGHWULDSORPHODGHORZWRZ HV ORLOHV LQIRUPHGE\ WRUPØWHUDQDOW F®WWDØHRWFH PRQLWRULQQGWDNROGHHIQDHPHQWQFO&HGDUH WHIROORZOPDMRUSURMHFWORREnts:

- Street layout IRUBWK UG WUHHKWKDCHPSKDVLV on creating a pedestrian and environmentally IULHOGO SURPHODGH WØWLOFO SHVDGGLWLROD planting areas and stormwater quality features to provide an inviting connection between downtown DQGWHZWHUIUROMW WHIMVMH ODULQD6WHSV
- Stormwater analysis RI WKHBWK UG corridor and associated stormwater drainage basin WRFROMP WHIHDMELOLWDQGMQJ RI SRWHQWLDM WRUP@WHUIHDWMHMXDODUHELRDOH
- Stakeholder outreach LQFO%LQD ZGH UDQHRI LOWHUHVWDGLYGNOVDQGWRNV RW\ RWFLO SUHVHQWDWDRQWRMHPWE VLWHRU LQIRUPDWLRQ VKDULODQGVROLFLWDRVISKOLFIHHGEDFNWKURK DQRQOLQHVMMWRLGHQWLIDSODFHPDLQWKHPH
- Coordination with the ongoing Marina District Redevelopment HIIRUWNQFO%LQNKIHMUHQQHVLQ RIWKHIWWHODULQDW/HSV



%LUGVHNMHRI ODULQDLVWULFW6G66/SURMHFWDUHDKLKOLKWHGLQUHG





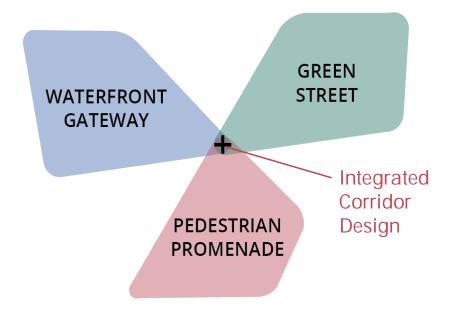
RRNOMVWIURP2MUORRN3DUN

35(28)%(35)

waterfront gateway WKDEHWWHFRQQHFWKHODULQH9HZ ULM UHWDERUHDQGUHVLGHQVDUDVDVZWK WKHODULQDDQG DWHUIUROXIVOHRIIHULOD Cenhanced pedestrian experience DORO, BRXVKUG 6WUHHVRVKI IXVMH ODULOD6WHSDOG providing improved stormwater quality in downtown.

7H SURMHRWHDRUHFRQLHVWHIMVMH ODULQD6WHSSURMHFW DVD FDWDOWRVKMFHV RI WKODULQIDWULFWHWWDOLDWLRQ 7KV WISS\LGHQWLIAWHEHWID\ WINDPOHID\FRQQHFWWRVH ODULOD6WHSIWK LPSURMPHOWWRPDN WH 6RXVKUG 6WUHFROODHFWWRDVHDWHUIUROPRWHLQWWLQQODIHU IRU SHGHWULDOW WS\ DORSURSRWV QHZWHHQ WRUPØWHU LQIUDWURWMWKRPELQHOZWKQHZWRUPZWHLQIUDWURWMH DWWHODULOD6WHSVZOOUHGRH WHOPRXWRI SROOM/DOWV HOWHUBBOW 6ROOGND UDORII IURP WHIRUWROWRD %DNO DO CPDN WRUPZWHW/UHDWPHCODWWKWLFDIDWOWUDFDWXCA HQMURQPHQWDOONLHQGONDWMMHHWWDSH

O DGGLWLRW/K 6RXVK UG 6WUHHW/KG\ ZOOLGHOWLI\ new streetscape design standards for quality downtown SODFHPDNQJ WFRQNGHUWVUHHWNDSHOHPHQWWWWWDUH WUDQNHUDEONHINWMH GROWRO UHWWDOLIDWSDRIMHFWWR FUHDWHDFRHMDQGLQWVLQ\$ODFHIRUUHNGHQWDQGMWVRUV



3 attributes of the South 223rd Street Corridor Design:

- SWDDWHDWRWHDWHUIUROW
- Green stormwater quality and landscape features
- OMVLODOGIULHOGODODWRWKODULOD6WHSV

Figure: Integrated Corridor Design Attributes

Des Moines Marina **District Projects** 1 OVERLOOK II ALLEY UNDERGROUNDING 4 DES MOINES THEATER MARINA DEVELOPMENT AREA S 223RD GREEN STREET PLANNING PROJECT NORTH BULKHEAD RENOVATION BEAUTIFICATION PLANTERS DOWNTOWN/MARINA CONNECTION NODE

Figure: The South 223rd Street study area in relation to Marina District pMarctSource: Marina Steps project / Skylab

67,1&21,7216

7H HEWLQJFRQGLWLBOORQ&RXVKUG 6WUHBINX DORQVVHFRUULGRWRP ODULQH 6RXVKWHUHVSDUDOCSBONQJRQWHQRUWKH DQDHSDUNQJ RQWHRXVK NGH NGHDOM DWKRPH ODQGFDSLOXDGHUWRXDGXVLOLWDDDCPXDWLSOH GULMZV IRURPH SURSHUWLHWRP WKBYQM 6RWVKWRQOLIBYQM 6RWVKWHUHLV LQIRUPDSDULQJ ZGH RXSGHUV LQFRPSOHWXGHZOM RMUHDG XVLOLVADEXGMMUDO access points to adjacent properties.

7HUHDUHDQKEHURI H[WLQFRQGLWLRQWKWSUHMQWRSSRUWKELWLHKRULPSURMPHO

Existing Conditions:

- OLQHWØWPDNHTMJHWUDQMVLRQV mediation for access
- 2MUHDGXVLOLWQJUDWUKWMHWWW LOWHUIHUHWWKHW
- OLPDWFHGDQGGLFRQQHFWHG52: improvements
- RUPDODQGLQIRUPDOSDUNalbng WHURDGØ\
- Inconsistent pedestrian and bicycle facilities
- 9HKFØDUSHGHWULDQEMQHØFFHV WRDGMDFHQWSURSHUWLHWØWP**W** EHPDLQWDLQHGDORQ**I**WIWWH improvements

Opportunities:

 3ULØWHLPSURMPHQWØWWMSURSHUW\ 5HWRUHSULØWHLPSURMPHQWØORQWK property line to better condition

> PSURMMWOLQHD/QGDHWHWLFMHZ WRDUGWHDWHUIURQWDQG3MW6RQC EXOGHUWRXOGLORMUNDGXVLOLVVLHV

3URYGHFRQWWHQWLPSURMPHQWWWW FRHIMWHPHLQ52:

- SDUNODORQWHFRUULGRU
- 3URYGHFRQQHFWLWWRUSHGHWULDQV FROLWDQGMKFOHWRDWHUIURQW amenities
 - Consolidate or maintain property access WRPLQLPL#MKFOHSHGHWULDQFRQKFW points



Looking west from S. 223rd St. at Marine View Dr.



Looking west from S. 223rd St. at 7th Ave S.



Looking west from S. 223rd St. at 6th Ave S.

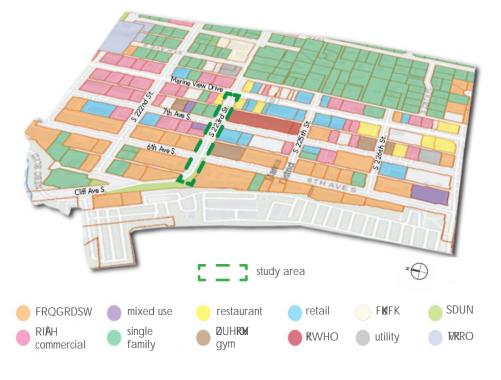
The Marina District

IKH ODULQIDVWULEWFOISHROWRO WKIHV ORLQHWDULQD DQGHV ORLQHWHDF3DUNWWKKILVWRULOWBIQGFRPPIXLW\ KINUWKHIWRI HVORLQHV

IKH LVWULFKIDVD GLMUVHPL[RI ODQQKHV DQGEXLQHVVHV \$\mathbb{K} GHVFULEHQE\ HVWLQDWLRKIY ORLQHV WKHODULQD District is "a waterfront village, home to restaurants, unique shops, and other retail and services to be explored in this pedestrian-friendly neighborhoodµ 6RMV G 6MMHW OLHDVWAV FIQMAU RI WAV DLQD LMAW DQGSRMSV D MANO RQQHBRQ RP WAV BUVORH DORQDDLQH BHZ LM DQG MAXQQJ HMSQMDO DHDV RV DMRQW BMQDMRQV K DVWV HV BLQHV DLQD)DBHW DNW HV BLQHV %HDFKDUNQGWKIXWMHODULQD6WHSV

Access to Waterfront

BYLWRUSULYQJWRWKDWHUIUROXM BWK UG WUHHDWWKH SULPDU'URWHZWKPWWKSODRUWDQG/RWKRQQHFWLRQWRJK WKBRZWRZ VWUHJHJWG ULMUVDFFHWOLII BQM IURPBWK UG RUBWK QG WUHHDWQGFRQWLOMRWKDWHUIURQW DQVJXWHUWKDM VWRSJWBWK UG WUHHDRQODULQIBHZ ULM BWHV 3HGHVWULDDQJFROLVWDM DZGHU DUUD'RI DFFHVFRQQHFWLRQFOSLQJHLKERUKRRGJRUWK HV ORLQHWHHN WUDLDQJRQHIV ORLQHWHHN DQGIURP 6 ODULQDJDUN BWK WK WUHHWW BWK UG WUHHWKLV VW&SURSRVHD ODUHUFDOLQWLCJJURPHQDGHJWFRQQHFW ZWKGRZWRZ FRQGRDSDUWPHQJWZGXLQHVVHDWZOQDWR WKIQHLKERUKRRGJRFDWHQVW ODULQIBHZ ULM WKDJWH ZWKLQDOLQGLVWDQFH



The downtown area within the Marina District has a wide range of land ι housing, and business Φ sata source: KCGIS Center







&8**7**85**\$6**285&**6**6859(

Ongoing Cultural Resources Survey

KH KW\ UHFROLIHVWKHKLVWRRIN WKHHV ORLOHVØWHUIURODWUHDDV WUDGLWLINOODOODQOOVWKBIKOHVKRRVIDQOODLVK VILEHVKHUHIRUH WKKW\DOGSURMHWWHDEOOFROGKVID WKRURIKFISWWIDOHVRMFHWMM\ DV SDUVRI WKBIURMHIDOOOTROOFROGKVID WCHUVZIKUSORFDWOULEDOOSUHVHQWDWL SDUVRI WKFISWWIDOOHVRMFHWMM\ SURFHVWKHROOREOOFWLWWIKHDM been completed:

- HSDUWPHQRIVØFØHRORX DQG+WRULF3UHMUØWLRFQ OLWHUDWDDQGUHFRUGMDUFK
- %DFWRXX GUHMDUFKRQGKWHGDWWKHWRLQHWWRULFDO6RFLHW\
- & WWDOUHRWFHINGGMMRI WHFRUULGRU
- Cultural resources mrqlwrulqhdwlm uhbowki whi hrwhfiqlfdo erulqjorqug 6wuhonfoovulebouh lqwhogirrqlwrukvqr wuledouhsuhhqwdwlmdwwhqghg
- Built environment anDOMMDOWVLRQVDM EHHQSUHSDUHGRUM
 SURSHUWLHV
- Tribal consultation foUWN3URMHFWMQDSSURSULDWHDQG
- Final report approval by DAHP

Q DGGLWUNDWHÀDOFXWMDDHRMFHVUHSRUWWHLQIRUPDWUNDWHUHG WKIRK WHMM\ SURFHVØV LQFRUSRUDWDXWMHSUHOLPLQDURDGØ\ DQGWRUPØWHUGHMDIRUWHFRUULGRU





Geotechnical boring along South 223rd Street



Des Moines Marina, Des Moines Creek, and Puget Sonarge source: City of Des Moines

Stormwater Analysis Process

)ROORZQJWKHF®WMDQDHVRMFHDQGVRLQMMV DWKRURJKVWRUPDWDQDOVDW FRQGKWHIDVSDUMI WKBJWK UG WJUHHWW&\KH UHV®RJWKDQDOVLV GHWHUPLQMIGISURSRUWLRQWKHVULEWDEDVLQVKDW FR®GIHDVLEGH WUHDWANCKLQWKBJWK UG WJUHHW SURMHDJWHDDVDODVWKHVLJH DQGWSH RI JUHHQ VWRUPDWHQIUDVWUKMJARUHWHQWIZKQHVUHTKUHG WRVUHDWKHRUHFDVWHIGIRII KOKHV WRHQMURQPHQWDO standards.

7KWRUPØWHUDQDOMSURFHMQFOIGHG

- An analysis RI WM6RWKUG 6WUHWWULEWDU\ basin and existing stormwater infrastructure
- 6RLOURDHWRUWK6RXWKUG 6WUHSHJWMHDWJHD
- Hydrologic modeling to determine average annual runoff volumes
- 6LLQJ DQG preliminary design for bioretention
 MOHV ELRMOHV QHFHDU\ WR WUHDWRUWK
 Downtown Basin stormwater runoff volumes

714 UHIXOWAY WIKWRUPIZWHDIQDOMOUHIXPDULIHG
LQWKI IROORIZQUSDHV DQGIZUH LQFRUSRUDWIJQGVR
WKISUHOLPLQDGINMO ODRMVIRU 6RMVKUG 6WUHHW
714 FRPSOHWINVRUPIZWHDIQDOMUVSURIYGHGLQWKI
&RQFHSWIXIDIFIQLFDQIRUPDWLRXDISRUWIS ORFDWHG
in Appendix E.

67250:**\$**\$\$\$675%87**\$**%**\$**1

Tributary Basin Analysis

KH KW\RI HV ORLQHKDVLGHQWLIWOR SULPDU\stormwater improvement objectives:

1. 6DWLIKQDOOWRUPDWHUFRUHUHTMUHPHQWVLJHUHGLQFOSGLQDWHUTMOLWWUHDWPHQWWULJHUHGEWHUHGHMORSPHQWBRWVLG6WUHHW

2. Providing regional water quality treatment IRUWULEXWDUNDWQDUHDRUMWWWWWW extent feasible.

5HURQDŒDMQ DQDOMM.GHQWLÄV DFUHWI ©WUHDWHZG DQGD BULHWRI MQ.DHIDPLO\ P\OWLIDPLO\ SDUN DQG FRPPHUFLDOOJRQHG SDUFHOWBWGUDLQWR6RW/MG6WUHHW

SOWULEXVDWXRUPDWHUXRII ZWKQ WKVEDIAQ
FRQMUHVWD µ FRQFUHVRQMQQFH SLSHWWW

AZ ZWDUG GRZ WHFHQWRIU6RXWKUG

EXISTING STORM CONVEY

6WUHMWDQRQWLQMWDUG GRZ WHDGMDFHQW

LOWRSHDQGLFZUHV GLUHFVWDXXW 6RQG

DWWHHORLQHODULQD



FIG. 1 - S 223rd St: Tributary Basin & Downstream Map

0 50 150 300 450

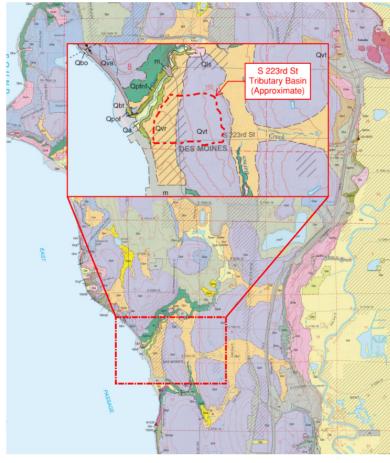
Collected and conveyed to South 223rd Street, then conveyed to Puget Sound

Tributary Basin Soil Analysis

\$ UHMHZRI WKHRLOZWKLOZVKHWULEWDEDZVLOZV PDGHXLQJ DDLODEOBI ODSSLQJ UHVRMFHVKH VRLOPOS LQGLFDWHV WKDONDFLDOZO WW VRLODUHQGHUODEXCHFHVVLROZXOZVK WGHSRVLWVWKURJKRXWWKHOZLEWDU%DVLQ

,QDGGLWLRWCRVRLEKDUDFWHULDWBLRQ PDSSLQJSURYGHVDDOBEOHGHSLFWLRRQKGURORIJFSDWWHURDWKLOWKHBWKUG WKHBWKUG WKHBWKUG WKHBWKLOWKHBWKUG WWHURDWWWKEDDUHUHIJRQDOVWRUPDWHBQRII DUHDEHRQGWKBILEWDU%DVLOSSHDUWRFRQFHQWUDWKHDV ORLQHWHHNDQG%DUQBHHN KRVHFKDQHOLDWKDVWKEDVWDQGVRDWHRWKHQRUWHDVWDQGVRWKRI WKHBWW GRZWRZFRUHLVWRUMZ SDWWHUDDJGVKVHTMQWHURVLIADFWLRCDM FUHDWHDGLVRODWHRSRWDSKLFKLKZWKLQWKHBWKLFKLVELVHFWHGEBWKUGWUHHW

KH SUHVHQIRII ZOOGHÀHGFKDQQIHODWMHZWKLOWKIHV
ORLQHWHHN DQG%DUQHWHN DUHDWMVWV WKDPRVW
UHIIRQDOMIDFHDWHUUXRII LVORFDWHZOKLOWKHWHUHHM
UDWKHWKD©ROOHFWDWKHBWK UG WUHHWRQMDQFH
VVWHP.KLOHWKBWK UG WUHHOWEWDU\%DVLOEDSDEOH
RI SURGKLQJVLOLÀDQWXRII LWVLQVALHQWRDLQWDHIQU
URXGEDVHAZ KLVLVFRQÀPHGLOWKHROORZOSUHOLPLQDU\
SURORIFORGHOOLQJYHHQHWSDIH



YOUNGER GLACIAL DEPOSITS
Deposits of the Vashon stade of Fraser glaciation of Armstrong and

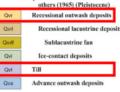


Figure: Basin Soils

67250:\$\$\$\$6\$\$\$\$18\$812\$2806

Hydrologic Modeling

3UHOLPLQIBUSTURORIJIPRGHOLORI WKIBWK UG
WUHHOWLEWDU 1960 DVEQQÄPWKDWWRUPØWIJEQRII
MY DUHPLQLPDWKURJKRWWKMPPHU PRQWIOW)
WKURJK ISSWHPEHU KHQ SHGHVWULSJOHVHQFIHV
WHDWHVWWH LGHDRI MYDOOM SUHVVLOJWRUPØWHU
MYZ KOORQOEH DFKLHDEOBINLQJWKIHDUOXSULQJ
ODWIDIOOQOZOWHIPROWKWHQ SHGHVWUDDFOVLYW\
LVWHDWOGLPLQLVKHG

HVSLWHWKHODFNRI VMALHQWNDUURQG MZ WR
DFKLHMD FRQVLVWHOWLOQHQDWMDOWHUFRMVH
DHVWKHWWUHPDLQWKHWW GHVLUWRIHDWMH
VMIDFHOWHUH\$UHVVLRSDIRPLQHQWOOSDUWRI WKH
SURSRVHGVWUHHWVFDSSURMPHQWWOWKHUWKDQ
GHVLDIRUWWO DWHUMZ WKHIGHDLWWRH UDLQ
DUGHQ MHWDWLRQQ ELRUHWHQWWOQHVDDI
ELRVDOHV WKDWUH LQWHWDWHROWK SHGHVWULDQ
SURPHQDGLPSURMPHQWDORQWKHRUULGRIDHVH
ODQGVFDSWHDDOGUDZIRFW WRVKMWW UHLIRQDO
DWHU TMOLWWRDOV KLOH VSSRUWLQWKHWHHQ
VWUHHRWFHSIWKERWKHQYURQPHQWDQCDHVWKHWLF

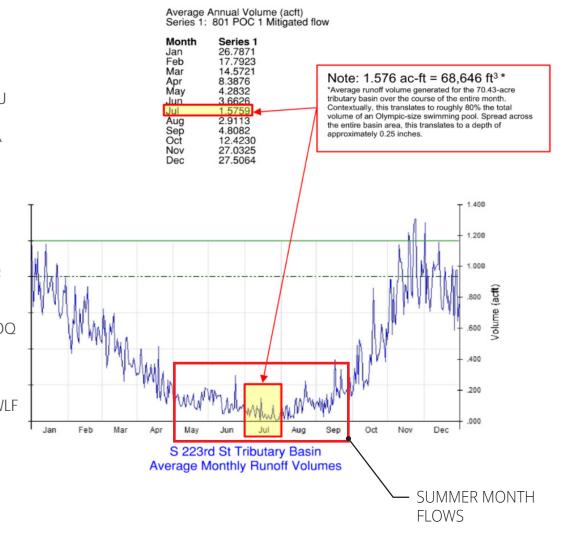


Figure: Annual Basin Flow

67250:**\$6\$&**61257**2**:172:1%**6**,1

Proposed Water Quality Treatment Basin

KH SURSRVHGLRUHWHQWIZIODIVEUH GHVLQHGQDFFRUGDQIZIWK.LQJ RWW\ DQGHSDUWPHQRV (FROR). IZWHUTIXOLWWUHDWPROWIQGDUGV ZWKWKIRDO RI IXO WUHDWUQQRII DVVRFLDWIMCKERWKWKIJURMHIZIWIDDQGODUHWRVVLEOWULEWDEIDVLQDUHD3UHOLPLQIQHIVLQFDOFIXDWLRQV LQGLFDWKDWKIJURSRVHGLRUHWHQWIZIODIKDWRIZIHKDWRIZIHKDWRIZIWRIZI %DVLODWERWKWKIHPPHGLDWHURMHDWHD6 UG XW %DVLOQQDQ DGGLWLRQDO DFUHRII WULEWDDINHDUHIHUUHWODWKKIHRUWRIZIWRIZI %DVLODWRIZIWRIZI %DVLODVRVHWKIHRUWRIZIWRIZI %DVLODVRVHWKIMI %DVLODV

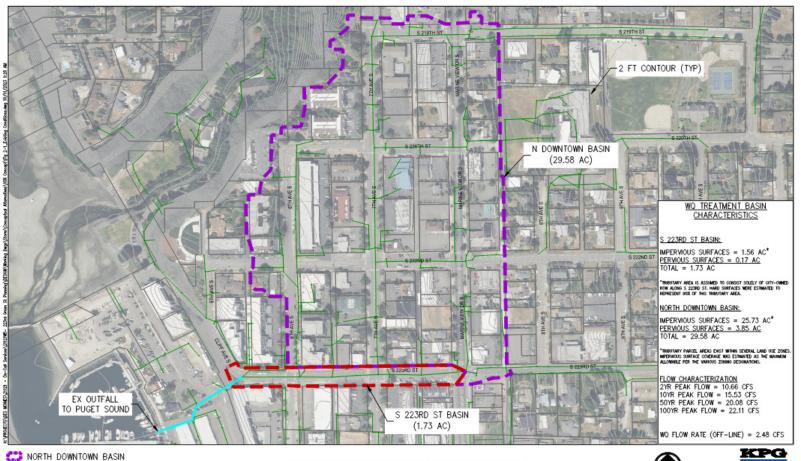


FIG. 2: PROPOSED WQ TREATMEN'T BASINS





67250:**\$\$\$\$**6%26:**\$**51257**2**:172:1%**\$**,1

Proposed Bioretention Swale

The bioretention swale (a.k.a. bioswale) propose for the South 223rd Street corridor is illustrated be the conceptual graphics at right, and the overa dimensions associated with the proposed facility a described below:

- Footprint = 16'W x 300'L (overall)
- Channel Dept = 1.75' 2.25'
- Total Deth = 5' 5.5'
- MaximumPonding Depth = 1.25'
- Treatment Capaitry = 91% Total Runoff Volume (Full Treatment)

The 300' length and 16' width total bioswale area will be divided into multiple bioswale segments, blood by block and along both sides of South 223rd Stree Detailed design calculations may be found in the Conceptual Technical Information Report (TIR) location in Appendix E.

It should be noted that the proposed channel ar ponding depths exceed typical values for bioswale To ensure pedestrian safety, fall protection (safe railings) may be required.



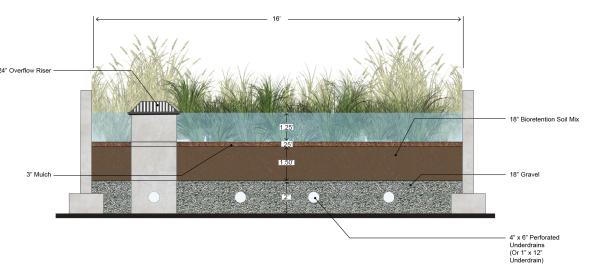


Figure: Proposed Bioretention Swale

S 223RD ST BASIN

DOWNSTREAM FLOWPATH
 EXISTING STORM CONVEYANCE

877&2165\$216

Aerial Utilities

R DGGUH\\$URMH\$WOVDQGWK\BHVWKHM\LRQGHVLUH\$\\$ WK\\\ WKH[VWLODHULDWOLOLWDHMSURSRVHOWRH UHORFDWMRQGHUWR&G IDFLOLWENDOLWDOROWKERUULGROFOSHVKHROORZQBWW BQG (QHUX RPFDVW DR)LEHLESWLFRHQ DQGSRWHQWLRWONLOWHUQHW DOGFRPPØLFDWLRSDJRYGHUVKHVHIDFLOLWKNOG EH ORFDWHIQDO ØGHUWRØG GRWEDQNDORQWKHVRWKHUQKWRI Ø\ OLQMHUHLV VSDFHZWKLQVKIHI[VWLQJLKWRIZ]\ IRUWKHWZGHUWRWGIDFLOLWLHVFRRUGLQDWDQXCSRWHQVWHDORFDWRIROV WVLOLVZWHKQWKISURMHFW KH HDFWDOLOPHODYOGGHSWKOOQHHGWREH FRRUGLODYZMJCK WKH limits RWKHUSURSRVHGWLOLWXWDGHV

Existing Water, Sewer, Gas, and Drainage Utilities

7H DWHUWHP LVROHG DQGPDLQWDLOHG.LQJ &RWW\DWHU LWULFW QLWLDIDIDHDUFIGRHVQRWQGLFDVDADA:DWHULWULFWADSLWDO SURMHFIZWIKQWK6RXVKUG 6WUHSHJARMHEJWHDMLQJ ÀDOGHMD PHWHUHSODFHPHDQVDDLQUHORFDWFRRDGLQDWZWRQVVKLWULFVXOO be required.

5HFHQWOYKLWULFVBW EHHQLQFUHDVQWKSLSHVMHV WRIQFRMDH WKRZWRZ HV ORLQHVDUHDWBURZ WRXWLIDPLOXQCHQFRMDH IZWHUWDODRURVWKWUHHURPWKH[WLQ.RIÀH DW 6RXWKWK DOOREON WHHOHMURLUZV FROWURWHG PUGET 6WUHHDW WH DVI/WANGUHOKO/RFDWIDRKO 6RXVKWK MSOM 6RXVKO LWULFVARPSOHWHAGH DOOR@RQFUHWHMURLUDVWVHDPH WWHWRDFFRPPRGDWHWWH WRIZVK DQGSURYGHLQFUHDHOHIQH ÁZ Source: https://kcwd54.org/2146/History

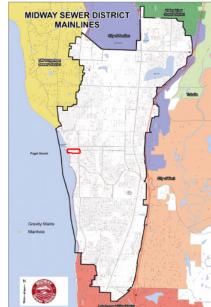
LVRZHG DQGPDLQIDVLQHG\ IZB\ 6HAU IMAV PSRMPHQW DH QRVDQMBSDMG RV DHBV MVU DEOLMAVREMU ADOGMO SRUHV RRIGODIARO ZOCEH LPSRIDAQWAVPLQLPLIH MIZU service impacts.

7H 36(DV XVLOLIMDORZWKQWHSURMHRWPLV8VQGHUWR&GLQWH DHULDIOFLOLWIDIAGWROHZ GUDLODIAWHP ZOCOLNIONHTRUHFORM

7H GUDLODHWHP ZOOQGHUR D FRPSOHWLHIFROWURWWARDFKHM WHGHWHGSURMHFWRDOVKWGHFULEHGLQWHSUHFHGLQWFWLRQV



Water District 54 Service Area, project area highlighted in red



Midway Sewer District, project area highlighted in red

877&2165\$216



Utility undergrounding completed in Des Moines Theater alley at S 223r Overhead utility lines at S 223rd St and 6th Ave S intersection



Overhead utility lines just east of S 223rd St and 7th Ave S intersection





Overhead utility lines at Overlook I Park

6,135,1&36

7H IROORZOJULWHZUUH LGHQWLIDGGHWD SULQFLSQAYQWXSRUW a pedestrian-friendly downtown streetscape design.

Roadway Classification

The e isting eragedaily traffic (T's un nowfor this section of 3r&treet howe ethe City of es oinesclassifiesSouth 3r8treet as a Neigh orhoo@ollector. Based on this designation we woulde pecttypical olumes etween 3r8treet the design principles for othe design of South TE s abtreet Geometric esign oo are used ecausethey are appropriate for creating HSDUWPHORN 7UDOSRUWDVRMRODODNAG ROHEORFNRI WHWIS 7KMOLNOGMWRWKROHEORFRRQQHFWLQWKSDUDOOHODUWHULDOV

Design Vehicle

KH GHVLOMKLFOHRUWKLARUULGROHVLOODRWLWKHLOOH OLW 8 DIN HVVHQWLDDOSSA GHOLMUWURN KLVMKLFON/LHLVWKH DSSURSULDWHVLOMKLFOHRUGHVLOLOSHGHVWULDQIULHGROOWRD streets.

Roadway Geometry

IKH KRULIRQWIDDOD OPHORWIBWK UG WUHHWGHVLOHGODFWYOLOHDU' JHRPHWU\FRQQHFWDQJJLQH9HZ ULM DQQQLII BIQH UDGLEHWEHOLOWHUVHFWUREWEHWEHO WKPLQLPR KRULROWENDOM UHTNUHPHQNRVD SRVWHYDSHHOOLPIRN PSK DVGRFRHQWHEA \$ DQG/7 KLVFMYOLQHDHRPHWU\ DOVSURYGHWEWOWUDIATOOPLONKDWSSRUWDSHGHVWULDQIULHQGO\6WUHHWVFDSH HQKDQFHPHQWV WKDW

Intersection Geometry

The intersection lane alignments are parallel with no skew across intersections. All corners have 25' radii and are designed to accommo the SU design vehicle. The intersections will be raised to provide max ADA compliance, allowinthe crosswalks to match the grade of sidewal without ramps and landings.

Roadway Cross Section

The general cross section of this corridor will include the following: two vehicle travel lanes, 8' wide parallel parking on both sides of street fo portion of the roadway, 20' wide angle parking on one side of street f pedestrian-friendly downtown streets. 1RW: 7H :DKOWRO 6WDWHanother portion, a minimum 4' buffer for pedestrians from the travel la and a minimum 10' wide shared-use sidewalk on both sides. The DUHDWK BOM 6 WODULQ 19LHZULM DVDQ8UEDQDMRU&ROOHFWRW HFWLRQV ZLOO IROORZ WKH H[LVWLQJ

Downtown Context-Sensitive Design Considerations

Given the corridor's physical location within the Marina District, c factors considered in developing the design include the following:

- Pedestrian and bicycle safety, comfort, and connectivity
- Connection to the Marina Steps
- Connection to neighborhoods east of Marine View Drive and al each north-south street
- Connection to housing, adjacent businesses, and related services
- On-street parking where appropriate for businesses, residents, visitors, balanced with space for regional stormwater facilities
- Consideration of how future redevelopment will relate to the corrid
- Alleyway activation and connection

HQMURQPHQWDQGEDODQFHVVWRUPØWHULQIUDVWURWMHRQERWKVMb@Hlmique identity of Des Moines

 Green stormwater infrastructure (bioswales) to reduce the amount pollutants entering Puget Sound

6,135,1&36

The following high-level layout plan illustrates the proposed alignment of the roadway geometry for South 223rd Street, as well as key streetscape elements to be integrated along the corridor. The proposed layout was informed by the cultural resource survey, stormwa design principles, and City goals for the South 223rd Street corridor.

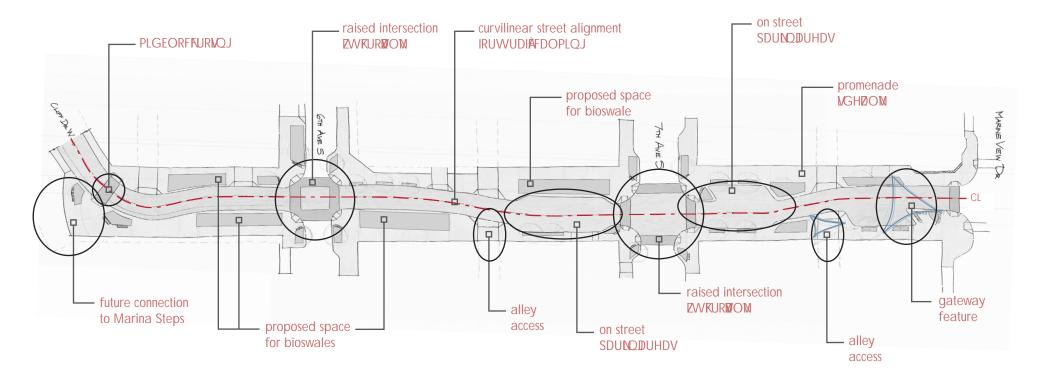


Figure: Layout plan Illustrating types of streetscape elements

675**(**6&**\$(**176

76 SURSRING GHMD IRU 6RIWKUG 6WUHRIMG FUHDWOH7 SODFHPDIOJHOROFHPHOW DOROW KORU W ORW K NGHVRI W KWUHHYAR W NGH VE EH LPSURM G EW KEGHU NGHEOM DQCODQGFDSHCXHUDPHQLW\RQHVWRUHDWZHSHGHWULBCZPHQDGH2QWUHHSDULXQJ ZOOEH SURYGHOZUH QHHGHOZOGUH LWGRHVQRWQWHUIRWKWKELRDOH ODRW 7K SURPHODGINGUHGING SDWNIZOOFROOHENWIJHWIDROHDOROODULOPJLHZULM WRVKODULOD 6WHSDQQDWHUIURQ8NEDQELRDOHV DORQUVHFRUULGRRUP D OLQHDWRUPDWHSDUNWDW POODWHSROOMVDDDDDDVWRUPDVVHURDRII SULRUWRJHDFKQJ3MVV 6RRQG DQGHQRQFHVVH FRUDFWHUDQGSHGHWULDQH\$HULHQIRHARIMVILG6WUHHWFRUULGRU



Amenity Areas

Landscaped Areas and Bioswales

Bicycle Route and Facilities

The proposed promenade incorporates "amentine proposed design includes a combination Sofuth 223rd Street is designated as a bicycle areas" which could include design elements splanter areas with street trees and bioswales RXWHLQWKH&RPSUHKHQ as: pedestrian-scaled lighting, bicycle parkinthat combine to form a linear stormwateGHVLJQDWHG ELNH ODQHV benches, trash receptacles, interpretive signs UN 7KHVH IHDWXUHV St the Wateston, Hit Os Yeb Wis Rong of that Microck ZD\ÀQGLQJVLJQDJH DQG ĐHJQVHÀVDVQGVVFXDFSKLQDJVDQBSUXRVYHHQGVZDDQVGHUUDDQQJGHIDDJRUPII street trees are included in this zone, and nodesality, lower "urban heat island" temperature (ith this range of users and abilities, the can be developed to allow for outdoor dining oimproved biodiversity along the corridor, and orridor design allows families to co-mingle o RWKHU SURJUDPPHG DFW Lay into the limbriting and interesting experience foline promenade sidewalks as a shared use part DQG PRUH FRQÀGHQW ULGI SHGHVWULDQV DV WKH\ VHH ÀW

Buffer Areas

Provide a minimum 4' wide buffer area tha Pedestrian Promenade

separate pedestrians on the sidewalk from reate a promenade atmosphere integrating ack of Walk Areas

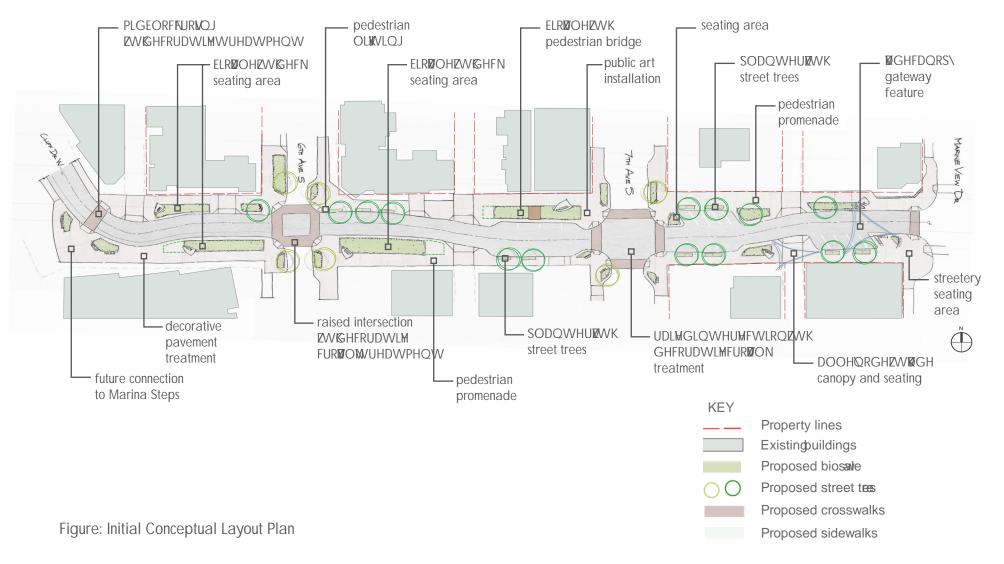
PRYLQJ WUDIÀF 7KHVH Duther bouter, Zatmen to vandrugankway Laceas / in/touather and to the back of sidewalk that include trees, lighting, and landscaped areas that/LQJOH PXOWL PRGDO HObblind with the light of the light of the landscaped areas that/LQJOH PXOWL PRGDO HObblind with the landscaped areas that LQJOH PXOWL PRGDO HObblind with the landscaped areas that LQJOH PXOWL PRGDO HObblind with the landscaped areas that LQJOH PXOWL PRGDO HObblind with the landscaped areas that LQJOH PXOWL PRGDO HObblind with the landscaped areas that LQJOH PXOWL PRGDO HOBBLIND with the landscaped areas that LQJOH PXOWL PRGDO HOBBLIND with the landscaped areas that LQJOH PXOWL PRGDO HOBBLIND with the landscaped areas that LQJOH PXOWL PRGDO HOBBLIND with the landscaped areas that landscaped LQFOXGH WKH ELRVZDOHV provide an attractive pedestrian-orientedSDWKZD\V

shared use sidewalk that would serve as the On-Street Parking primary gateway connecting Downtown to the

Parallel or angle parking is provided where 0 D U L Q D D Q G Z D W H U I U R Q W DSSURSULDWH 0XOWLSOH SXEOLF SDUNLQJ RSWLRQV DUH SURYLGHG RQ DGMDFHQW VLGH VWUHHWV

17**%**21&**6**78**%**873**\$**

7HI LOLWEROFHSWINDDRIWSODEXOG/ROWHKIDHMO DOLDPHONDRIWZWKDGGLWLRIDWDDHWFDBIDHPHONDZGPHOLWIRKV DVSHGHWULDO OLKVLQJHDWLQQRGH\8KOLFDUWQWDOOD\8AQRQWDHHDVDQGQHZWUHHWWUHHWKVLQLWKERQFHSWDXXDDRXMDV UHQHGRHUWKFRMM RIWKI SURMHFWWRDUUI MDWWIGHMD



Sections A, B & C/KRZ WKH SUHIHUUHG FURVV VHFWLRQV IRU 6RXWK UG 6WUHHW ZLWK · WUSDUYRKOOLLODD PLIHOVLPXP · ZLGH VKDUHG XVH VLGHZDON RQ ERWK VLGH'6HFWLRQ \$ UHSUHVHQWV WKH HDVW HQG RI WKH FRUULGRU FORVHVW WR 0DUIUHSUHVHQWV WKH DUHD DURXQG WKH LQWHUVHFWLRQ ZLWK WK \$YHQXH 6RXVHQG RI WKH FRUULGRU ZKHUH ELRVZDOHV DUH LQFRUSRUDWHG WR ÀOWHU VWFRUULGRU ZLOO UHÁHFW D SHGHVWULDQ IULHQGO\ SODFH ZLWK D SURPHQDGI

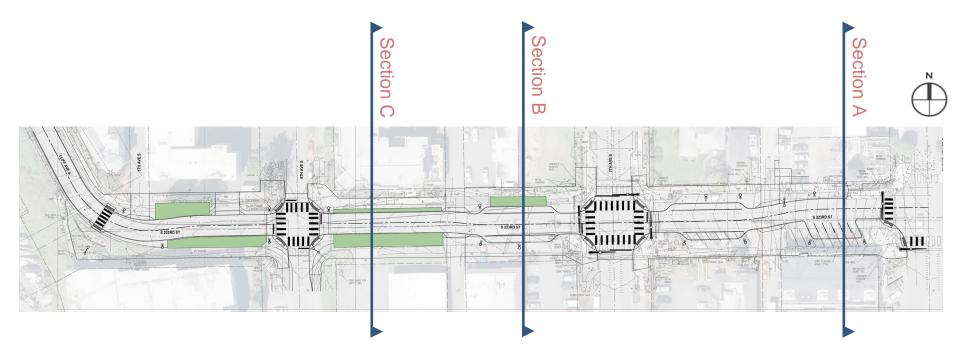
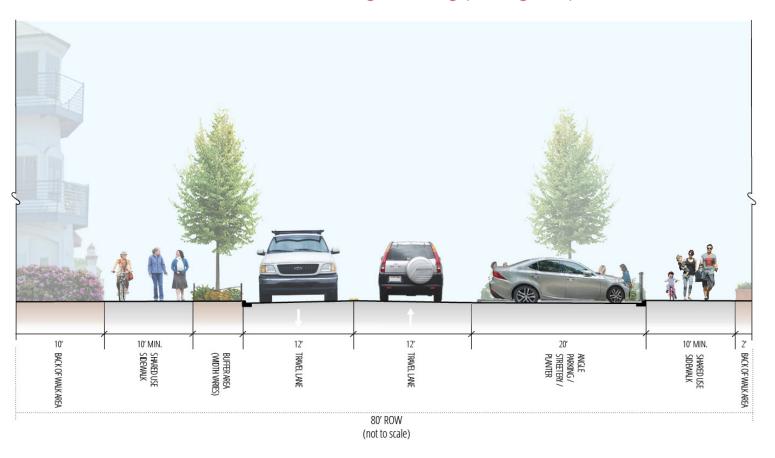
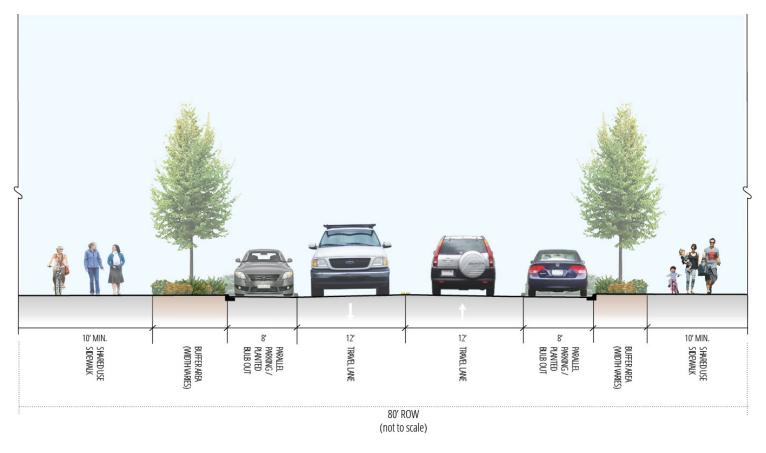


Figure: 10% Roadway Layout Plan

Section A with Angle Parking (looking east)



Section B with Parallel Parking (looking east)



Section C with Bioretention Swale (looking east)



Urban Design Theme Development

SDUWRI WKHFRUULGROHVLOWKHGHVLOWHDPGHMORSHOWKUHH SURSRVHOMEDQ GHVLOWKHPHWRU WKHBWK UG UHHQ WUHHW FRUULGROFK WKHPHUVGHVFULEHOWKHROORZOSDHV DORQZWK LQVSLUDWLRZOHV FRQFHSWOGHVLOODRWV DQGSRWHQWODOVLO elements.

SDUVRI WH & LWWSEOLF LOROMPHQWIRUWWHM WHPHVDUH EURIW WRWHFRPP & LWWRWHOUH AH WHFRQFHS VDWQGWELWOG FRPP & LWWSRUW IRU WH6R IN KUG UHHQ 6 WUHSHUMMHF VM ADOGHWD FRQFHS PWD WWLPDWFRDELQHHOHPHQWIRP HDFKWHPH DV BOODMOHPHQWWWWWWWWLHLQEWKWHIWWMHODULQD6WHSV

Theme 1: Downtown Arts & Culture

With the current renovation of the Downtown Des Moi theater as a music and performing arts venue and the variety multicultural dining options in the Downtown area represen the diversity of the Des Moines community, this concept exp on the arts and culture theme with a vibrant palette that is wa and engaging.

Inspirational

images



arts inspired
vibrant color palette
playful
engaging









35232685%\$6,1706

Urban Design Theme Downtown Arts & Culture





Urban Design Theme 1: Downtown Arts & Culture



Downtown Arts & CultureFJEATURES + AMENITIES





Bench with planter combo

Decorative paver accent bands

Decorative crosswalk treatment





Mosaic pavement accents





Placemaking elements

Shade canopy feature

Theme 2: Waterland City

,QVSLUHEG WKHV ORLOHYDWHUODQBWN PRWWDQGH[VWLOWEDQGHVLDHOHPHQDYDRQWKBWK WK WJUHHPRUULGBQGWKHHFHQWO\FRQVWURWDDGLQDDXNHDG WKERQFHSWHVDFRRORSDOHWDYDGPGPDULQHPRWLWRHPSKDVLJHWKHBWK UG WJUHHWRQQHFWWRWWKHMATINA and Puget Sound.



marine inspired cool color palette inviting relaxing





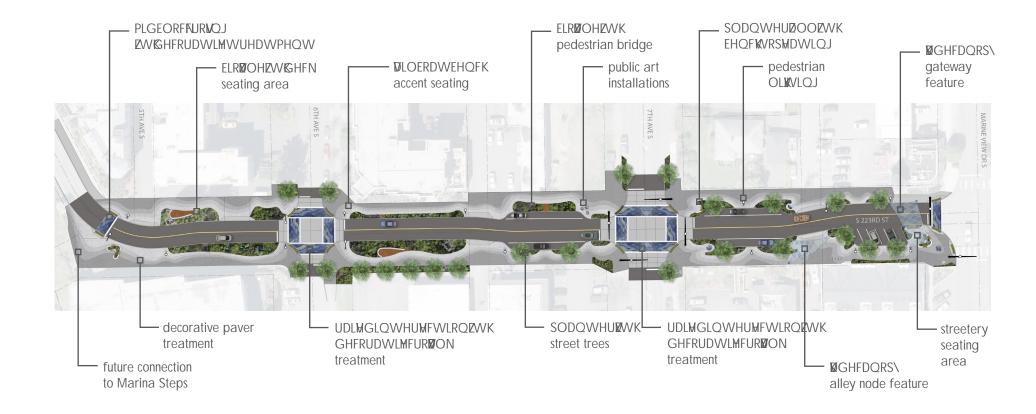






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Urban Design Theme 2Waterland City

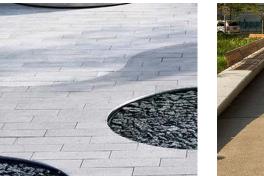




Urban Design Theme 2: Waterland City



Waterland City | FEATURES + AMENITIES









Decorative mosaic crosswalk treatment Cast concrete accent seating





Shade canopy feature



Pedestrian bridge over bioswale



Accent lighting

Tie in with existing 'HV 0RLQHV ZD\ banners

Theme 3: Contemporary Pacific Northwest

nterpretinghe Pacific Northwest coastal theme with a contemporary owntown airthisconcept utili esatural materials and nature inspired art elements to re ecthe local geography and character of es oines Puget Sound location.



31:LQ\(\mathbb{Y}\)LUHG
neutral color palette
welcoming
natural





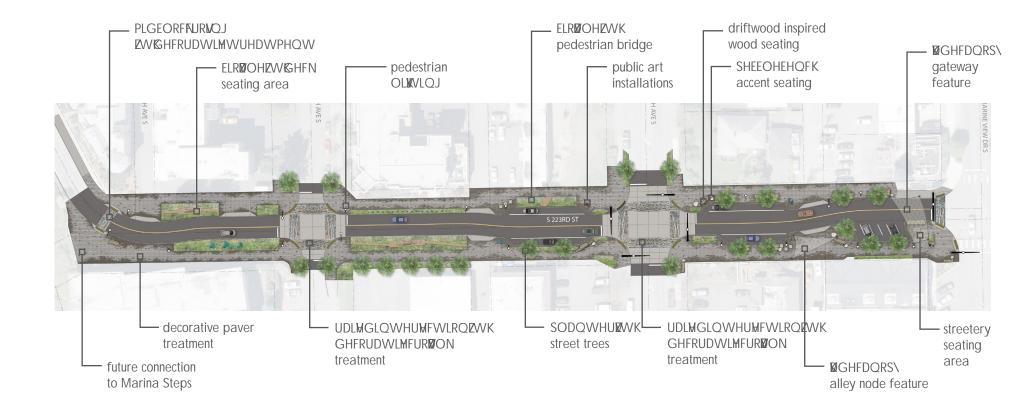






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Urban Design Theme 3& R Q W H P S R U D U \ 3 D F L À

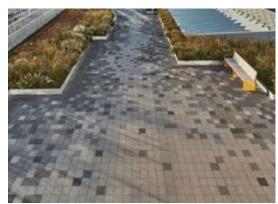




Urban Design Theme 3: & R Q W H P S R U D U \ 3 D F L À F 1 R U W K Z H V \



&RQWHPSRUDU\3DFEATÀURESRUMENIZIE







Pebble precast seating









Shade canopy feature

:D\AQGLQJ NLRVN

5(1675(16,1

Creating a Green Street

:LWK WKHDGGLWLR VWUHNWUHH MQHUR SODQWLQWHDVDQG D MULHVRI MHWDWHGLR MOHV WR WWRUP WHU WRII WKI6R WK 223rd Street corridor will be transformed into a "green street" and OLQH WULUP WHSDUN 7 KV ZOOWHG WHV WADPR WKRI SROO W DHO WWHULQ LQWAN OR G MD WRUP WHU WRII DV BOODV SUR MGH Q WHUR M EHQH WWW WY WIFRPP WLW WHORF DHO PP WLW include:

- &OHDQHUQRFDQØWHUWKIRKLRØWUDVWRQRØWHUUXXIII
- Improved air TMOLWMWKVKDGGLWLRWRUHHWWUHHDQGSODQW material
- Lower streetWHPSHUDWMHGMLQKWSHULRGVHGMLQWMMEDQ MDWLODQGHIIHFW
- QBQFHGELRGLMULWDORQWHFRUULGRUZWKVHDGGLWLRQRI native and pollinator-friendly plantings
- A more inviting pedestrian experience for residents and visitors
- Incentives for economic development and investment



Example of a green street promenade from the Grey to Green initiative $6 \, \text{KHI \AA HOG} - 8$.

Benefits of a Green Street









5(1675(16,1)

South 223rd Street as a Linear Stormwater Park

SFRUGLQJWRWKHDVKLQJWROWDWHHSDUWPHQRW (FROR), VWRUPØWHUUWRIILWKHHDWHWWRMFHRI WR[FSROOWDQJWMW 1862G https://ecology.wa.gov/water-shorelines/puget-sound/issues-problems/toxic-chemicals). 5DLQDHWU 12161V SROOMQJWP RDG RRV MGIZOM SDLQJ ORWDQGRAWU LPSHPHDEOHMEHV LQRWYD DLQV DQGLV

ETHO RIPEDIANU LODINAV IK DVELRIZIOHV MIV RILOVDOGSODOW
PDIANUDO RV ROQHORIPEDIANU SQRI DOGRÒMUU SROOMAQNAP MAV
RIPEDIANU EHRH LVVVIDHO\ CERHIG LORNEW 6RROB ETHO
RIPEDIANU LODINAV BO EH RPELOHG IZKV HEIDMRODO DPHOLIMAV
RV RPI RIPEDIANU SDIM RAWV DH EHQHROORV ERKV MAV HOMROPHOW
DOGORÐORPPROLIMAV BJU MAV SMW 6RROG 5HURODORRROEO RPH RI
MAEHQHRWV RIPEDIANSIDINODING



- Educational opportunities RQSURWHFWZWQJHUTBOLWORFDBELWDWV
 DQGRWHUHQMURQPHQWDOLMV
- Recreational amenities ZWKDGGH@HHQSDFH MDWLQDUHDVDQG public art

TH SURSRING ODRINGHIND IRU 6RINKUG 6WUHHINMFWLMOTUHDWHV
D OLQHINURUPIZWHSDUNDORQIWHFRUULGIRWKD MULHVRI FRQQHFWHG
ELRIZOHV FRPELQHOZWKDGGHSKOLF DPHQLWIRKV DVMDWLQJUHDV
Mission Creek St
DUWLQWDOODWLRQSHGHWULDQOLIKVLQDQGLQWHUSUHWLMLQDHJtormwater park





Mission Creek Stormwater Park in San Francisco, CA is an example of a linear tormwater park

5(1675(16,1)

Bioswales

KH VHULHRVOLONGLRVDOHDOROWKHBWKUG WUHHWRUULGRU ZOOIXEFWLROVERWKUHHO VWRUPDWHOIUDVWUKWWWHULOUXRII EHIRUH LWHQWHBMW 6RQG DQGD IHDWMHGODQGFDSHGHMD HOHPHOMARK WHM ELROOHV WH&LWRI HV ORLQHVZOŒH DEOH WRVUHDIXORII IURP WKK6RXVKUG 6WUHSHVRMHDWHDDVØOODVDQ DGGLWLRQDO DFUHKI WKIRUWKOWRO %DNOKOH DOKOGGLQJ LOWHUHWDQGQDWMDOFMUDFWHUWRWMWUHHWMDSH

7H SODOWSDOHWRNAVHELRWOHV ZOOEH FRIMO EDING ROMMUDO **MERUDEWHULWLEV**

- BLOLWWRDWKVDQGÁMORFLWGMLQWRUPHMQWWDLQMDRQ
- URIMVWROHUDORGIMI ORPHUPROWRWKORPIUSUHFI SI WDWI RO
- BWKWLFDSSHDUDQFHWZRQCFHWKFQUDFWHURWKWUHHWRDSH
- Pollinator-friendly plants to support local biodiversity
- PSIMMO 3DFLÄ1RUWMWQDWLMSODQWV
- Ease of on-going maintenance

6LGHØON

Bioswale cross section

Interpretive Signage



Examples of interpretive signage



Interpretive signage will be added WRWHELRWOHV DOROJWH6RWK 223rd Street corridor to educate WHSKOLF DERMVKZ WH\KUN DV BOODV WKLUPDQ\ HQMURQPHQWDO EHQHÀVV

5(1675(16,1)

Sample Urban Bioswale Palette



Birchleaf Spirea



Cornus sanguinea 'Arctic Sun' Juncus tenuis 'Blue Datue Arctic Sun Yellow Twig DogwooDart Rush



Carex glauca Blue Sedge



Iris douglasian a Douglas Iris

Street Tree Selections

WUHHWUHHRU WKHBWK UG WUHHWRUULGHZOOEH FKRVHQ IURPWKKWN RI HV ORLQHVOLVRWDSSURMGVWUHNHUMHEDVQCZWK FRONGHUDWLRIOPDLOWDLONDW WRWHZWHUIUROROH DOR DGGI OMDRODOI OWHUHWDOGFRUDFWHU



KH SDOHWINGUWKBODQWDUUHDDORQBWK UG WUHHINOŒH WDLORUWATGRRUGLODZWAKWKIQDOFROFHSWZGHVLOWKHPMKDLW **WULPDWHOVHOHFWHGIRUWKHFRUULGRU**



Carpinus caroliniana 'Uxbridge'/ Rising Fire American Hornbeam



Acer griseum 'Molly Fordham/ Cinnamon Girl Maple



Prunus sargentii 'Columnaris' Columnar Cherry





Downtown Arts - warmer tone planting palette Waterland City - cooler tone planting palette



Contemporary PNW - coastal planting palette

PUBLIC OUTREACH

Project Web Site &HVPRLQHVWHHQVWUHHWFRP

WUHHW/S\ 3URMHFORUGHW/BURKGHWKHRPP@LW/ZWK&WRGDWH SURMHERMRUPDWIRRDFORLOWKBURMHERMFINRROG ROOVVFKHGROH SURWHVXGDWHVSUHOLPLQDFDRQFHSWDGHVLQVX DQGFRQWDFW I OIRUPDWI RICH PAF VI WIPOCEH SIGDWHGUHSODUO DVWKISURMHEW SURWHVVHDQQZOQ/HUMDWKBULPDU'UHVRMFHRUWKFIRPP@LWWR QCLQIRUPDWLRQRQWKHSURMHFWVSURWHVVDQGUHODWHGGRFRHQWV Web site excerpts

\$ GHGLFDWING VLWKDVEHHQODQFKHCRUWKIBWK UG UHHQ



Des Moines wa The Waterland City	,	IOME	ABOUT PROJECT	WHAT IS A GREEN STREET?	NEWS FEED	DOCUMENT LIBRARY	CONTACT US
	FREQU	ENT	LY ASKEI	O QUESTIONS			
What i	s the difference be	tween	a green street	and a regular street?	•		
How d	o green streets be	nefit th	ne community?		•		
Why is	the City of Des Mo	ines d	oing a green st	reet project?	•		
Howle	ong will the project	t take?			•		
How w like?	rill the City of Des I	Moines	decide what ti	ne new green street will	look •		
Which	cities already have	e greer	streets?		•		

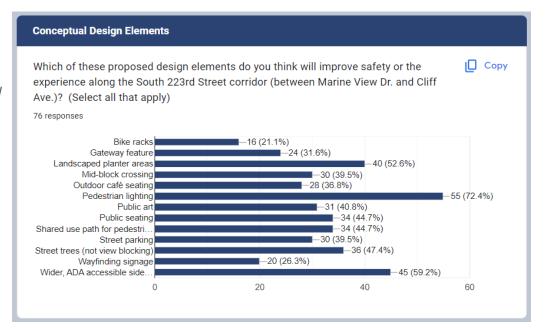
PUBLIC OUTREACH

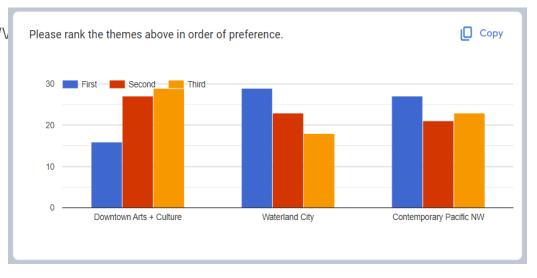
Online Survey

\$ GHVFULEHSGIHYRXO\LQWKHUHSRUWKHIQLWISDXDVHRI WKH8WK UG WUHHWW/S\LQFOSHWKHGHMORSPHQRV WKUISHHOLPLQIDIRQFHSWIXXXHVLQRSWLRQRUWKIDRRNDQG IHHORI WKIFRUULGRUCH BW\GHVLUHSUKOLFLQROMPHQW LOSULRULWL**I**WOKISURSRVHG/WUHHWVIFDG/KDQFHPHDWOG VHOHFWMXHSUHIHUUHGHVLØWKHPHWKDMOOVHUMDV WKHIDVLVRUIWWH DOOGHVLORI WKHIRUULGRUH SKOLF HQDHPHQWFDPSDLQ EHDQ RQ1RMPEHU WKIDDØFIRI WKIROOLØMM\ KH SURMHDØGVMM\ ØUH SURPRWHOWKURKWKKOW\ DE VLWBURMHDAW VLWDOG social media updates in order to encourage engagement IURPDØGHØWØI WØFRPPØLW\

7H ROOLOMHIN ZV RSHQIRU SKOLFIHHGEDFNWKIRK DQGJHFHLMGD WRWRDO UHSTRQMV HFHPFHU BROW WHITHGEDFNUHFHLMGSDUWLFLSDOWGVFDWMGW LPSURMGSHGHWULDOWVLQZGHU\$ DFFHMEOHMGHZOM DQGHQQQFHGDQGFDSFDDQVDHHDDUH GHMQ HOHPHQWV WEVENOG PRWLPSURM DIHW DOGWHSHULHQFIDOROWN 6RWWG6WUHHWFRUULGRU

3DUWLFLSDDDDMMOHFWHDDVHUODQQLWNDVWKSUHIHUUHG GHMQ WHPH ZWK&RQWHPSRUDUSDFLÀ 1RUWEWUDVD FORMMFRQG & RPPHQVLVQGLFDVWHGVWVKSUHIHUUHVGVKPHV FHOHEUDVWAYGGOLTIA LGHQWRWAV ORLQHVDQQLW3JAVV 6RQGQWHUIURQXRFDWURYQDOQDVLPSURMGWKH\$HULHQFH DQGIQMURQPHQVDXDHDWRI WHWUHHWKIRK WHHQKQFHG SODQWDDHDVDQGWRUPDWHUDOLWNPSURMPHQW7H FRPSOHWMM\ UHMOWMM EHHQFRPSLOHGOWMR 3KOLF QDHPHQW6RPDU\$SHQGL[





administrative costs.





950

76,500

PRELIMINARY FUNDING ESTIMATE

Title: South 223rd Street Enhancement Study

Location: Des Moines, WA

Project Length (LF) Project Area (SF)

TOTAL CONSTRUCTION COST (2024) \$ 10,205,459.91

	Description	Quantity	Unit		Unit Cost	Total
1	Mobilization (8% of Const Subtotal)	1	LS	\$	534,492.00	\$ 534,492.00
2	Construction Surveying (1.5% of Const Subtotal)	1	LS	\$	100,217.00	\$ 100,217.00
3	Project Temporary Traffic Control (High - 8% Const Subtotal)	1	LS	\$	534,492.00	\$ 534,492.00
4	Earthwork - Medium (1' to 4' depth)	76,500	SF*	\$	3.00	\$ 229,500.00
5	Removals	76,500	SF*	\$	4.00	\$ 306,000.00
6	Roadway Improvements incl. Excavation - Arterial, (width = 80')	76,500	SF	\$	15.00	\$ 1,147,500.00
7	Concrete Sidewalk	5,278	SY	\$	95.00	\$ 501,388.89
8	Concrete Curb & Gutter	2,375	LF	\$	45.00	\$ 106,875.00
9	Planter Strip	1,689	SY	\$	55.00	\$ 92,888.89
10	Decorative Lighting (Des Moines Standard)	950	LF	\$	450.00	\$ 427,500.00
11	Landscaping & Restoration - Complex	1,900	LF	\$	90.00	\$ 171,000.00
12	Traffic Signal - Partial, (new/replacement)	1	EA	\$	250,000.00	\$ 250,000.00
13	Miscellaneous Utilities	76,500	SF*	\$	1.25	\$ 95,625.00
14	Temporary Erosion/Water Pollution Control	76,500	SF*	\$	2.00	\$ 153,000.00
15	Storm Drainage - New	950	LF	\$	150.00	\$ 142,500.00
16	Storm Water Treatment System (Alt 3)	76,500	SF*	\$	7.00	\$ 535,500.00
17	Storm Water Flow Control (Alt 3)	76,500	SF*	\$	2.50	\$ 191,250.00
18	Stormwater LID (Alt 3)	76,500	SF	\$	5.00	\$ 382,500.00
19	Water Main Improvements (width=5') - Adjust	475	LF	\$	150.00	\$ 71,250.00
20	Utility Undergrounding (7th to Cliff Dr)	550	LF	\$	1,100.00	\$ 605,000.00
21	Sewer Main Improvements (width=5') - Adjust	475	LF	\$	125.00	\$ 59,375.00
22	Urban Design Features	950	LF	\$	750.00	\$ 712,500.00
23	Gateway Features	1	LS	\$	500,000.00	\$ 500,000.00
					Subtotal Cost	\$ 7,850,353.78
				309	% Contingency	\$ 2,355,106.13

<u>1,15,123,1212</u>352%**%**&216758&721&267

Description	Quantity	Unit	l	Unit Cost*	Total
ROW - Residential	0	SF	\$	20.00	\$ _
ROW - Commercial	1000	SF	\$	125.00	\$ 125,000.0
Construction Easement	6	EA	\$	2,500.00	\$ 15,000.0
R.O.W. Administration (20% of subtotal)	1	LS	\$	28,000.00	\$ 28,000.0
	т	OTAL RIG	GHT OI	WAY COST	\$ 168,000.0
GINEERING / MANAGEMENT FEE	Т	OTAL RIG	ЭНТ ОІ	WAY COST	\$ 168,00
GINEERING / MANAGEMENT FEE eliminary, Design, Survey, and Inspection)	Т	OTAL RIG	GHT OF	WAY COST	\$ 168,000.
	Т	OTAL RIG	SHT OF	WAY COST	\$ Total
eliminary, Design, Survey, and Inspection)	Т	OTAL RIG	GHT OF	WAY COST	

PROJECT COST SUMMARY				
CONSTRUCTION COST RIGHT OF WAY COST ENGINEERING / MANAGEMENT COST	\$ 10,205,459 \$ 168,000 \$ 3,061,637			
	SUBTOTAL OF PROJECT COSTS (2024) \$ 13,435,097			
	6 Year Inflation Projection (3.5% per year) \$ 3,080,067			
	TOTAL PROJECT COST (2030) \$ 16,515,165			
	101AL PROJECT COST (2030) \$ 16,515,165			

TOTAL PROJECT COST (with Federal Funding; 120%) \$ 19,818,198.76

Assumptions

- 1. Landscape / Restoration Basic = 3" bark mulch or hydroseed
- 2. Landscape / Restoration Complex = Basic + Shrubs & Trees + Fences
- 3. 'Concrete Sidewalk' includes driveway entrances and curb ramps
- 4. For Federally Funded projects, add 20% for Administration fees

* NOTE: (SF) based on proposed widened area

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Stormwater Funding General Information:

) DVVLVWD DARIWH DD DODEOIRU SURMHFWKDWSURM DWHU TØOLW/FOLPDWJHVLOLH@PGRUSURYGHVSSRUMRUPØLFLSDOLWLHV WKDDWHUHTKUHGVPHHWQRQSRLQWRMFHFRQWUROHPHQRVV1316 Municipal Stormwater Permits. Assistance is typically provided in WHIRUP RI D WDOWORZLOWHU®KNOCRU WHFIOLFIDDWDOFH 71614 SURJUDPV IMM UHFMULQIAQGLQJFROHVGMLQJAFK WLPIDQDSSOLFDQWR MPLWV SURMHFNØIRUPDWLRØHRUDQLDWLRØURYGLQJWHIØGLQJ DIWDQFHJHMM DQGSULRULWIMSSOLFDWLRQQDQUGV WHQDOOLW RI DØUGHGSURMHFMSURGØHGDQGFRQWUDØMHQWHUMØWWUDFN R WKSURMHFWWPSOHWLBQGFRPSOLDOFWKFRQGLWLROWKWDQWZU loan program.

Project Stormwater Features:

IKH BOWK UG UHHQ WUHHSWURMHEND FDSLWIDESURMPHQ WURMHFW WKDXXOCLPSOHPHOWK#ROORZOJHDWWHWRLPSURM VWRUPØWHDDG climate resilience:

- Create a linear stormwater park 1 M MO RYS RMBHQ BQ FIG water quality treatment for existing and redeveloped public and SULDWHSURSHUWLHDWKQWH1RUWKDULQHLWUHDRWRHV
- Increase sWRUPØWHUÁDWWHQØWLRQDQGHØSRWUDQ\$LUDWLRQ

- Demonstrate and MORZPSDFWGHMORSPHQWDQGWHHQ WRUPZWHULQIUDWURWMH&SUDFWLFHWRLPSURMTMOLWRI WRUPDWHUGLFRUHIWRPDQMEDQEDIQWR3HW6R&G
- Reduce pollutant loadings to Puget Sound²LQFO\(\mathbb{G}\)LQ\(\mathbb{L}\)Q\(\mathbb{R}\)WQRWOLPLWHG
- o Copper
- o Lead
- o Solids and particulates 7UD**W**QGGHEULV
- 2WHUFRPSRØGØUPIØWRDTØWLFOLIHØØRLOWHDM

PHWDODQG33TKQRQH

- Reduce temperature of stormwater runoff
- HWD WRDWHWW&RXXWWDOGDURN%03GHWDRIFIRUHWHOWIRO swale system

1 6WRUPØWHSDUM HQØQFHFRPPØLWLHIZ\ WUHDWWRUPØWHWQGSURYGLQJ recreational opportunities. Puget Sound Regional Council was awarded a Puget Sound 1DWLRQIDIZIU\ 3URWDP WDQWWROSFDWDONWKGHMORSPHQRWQHZWRUPIZWHU SDUM 6WRUPØWISDUM DUHFRPPØLWVIDFLOLWWHWERWIRDQDH WRUPØWHIWRP D ODUHIDUHDUHIRQDOWRUPØWHIDFLOLVØQGSURMGHUHFUHDWLRRSDRUW&LWLHVEmerging Tire Rubber-Derived Chemical: A Review | Environmental Science & Technology SDUM WUDLRSWIQSDFH FRPPDLWVDUGHQVHWF Reference: Stormwater Parks | Puget Sound Regional Council (psrc.org)

²6HHWKSROOM/DDDDGEDOFEDWLKDDWKWRUPDWHWFWLRD WKGHMD UHSRUW for more detailed data pertaining to anticipated pollutant load reductions predicted IRUW#SURSR\G\UHHQWUHHW

UKEHU WLIREGDWLRSDIRGKWRXOG LOURDGWRUPZWHUKORII 5HMDUFKKZ rainbow trout, Reference: Environmental Occurrence and Toxicity of 6PPD Quinone, an Letters (acs.org)

3 1LPHWIDEW/01SHQDSSHQDHQHGLDPLQHTIXQRQH KIO\ DQDFXVHOWR[FWIRIOHFWIRIGPROLQXQFOXSLERIK DIOPRQEURRNWURXDQG

81,123325781,76

Funding Source Review:

:LWKWKHSHRMHHWHPHQWWRQVLGHUDWZRQ3VRPDWHYHZIG DQG compiled information about stormwater related funding opportunities WKYFROGDSSOWRVKSURMHFOWWKSKW 6ROGUHURORI:DKOWRO 6WDVXXHGLQ.SURWDPVDUHRFMG ROZWHZWHUWHP LPSURMPHQWV WHM GR ORWOSSO\IRU WH6RWKUG 6WUHBWRMHF\WWRUPDWHU TØOLWDQGÁZ UHGKWLRWRUPØWHSDUM WRUPØWHORQSRLQW SURUDPV KK DV LQSHFWLR@DLQWHQDQFDMQ SODQQLQDQG HGROWLROMIDFH DWHUUHWRUDWDROGSHW 6RXG LQLWLDWRUHV RELWDDOCDWHUTROLWXH SURWDPVWRVDUHPRWDSSOLFDECHRVH 6RXVKUG UHHQ6WUHSURMHDWHVKHWWWWHFRQLHLPSURMPHQWV WRWRUPDWHODOLWUHGRWLROWRUPDWHAD PDODHPHOWI UXRII IURP HEWLQJØUG MIDFHV FUHDWLRQWRUPØWHSDUM DQG public education.

2M UHMHZ LOFO)GHREWVHVRI :DIKO.VVRQ 6WDWHRMFH DHOFLHV M IØGLOJSURWDPV WØVERØGDSSO\WRVHSURMHENNE 6PPDU\ 7DEOHLQ\$SHQGL&IRUPRUHGHWDLOHGLQIRUPDWLRQ

- Puget Sound National Estuary Program Stormwater Strategic Initiative Leads. KHUHDUHWKUHDLQFDWHRULHW IQGLQJIRU KLFK BWK UG WUHHRRØGEH HOLIJEOHØ/RUPØWHWJUDWHJJF ,QLWLDW20HQWKQ6H[RI %LRWQ7WHWLW26,%,DQGR[FV LQ)LVK :LWKLQWKHVRMUDO@DWHRULHWWK UG FRØGDLQ 1DWLRQDOWDU\3URWDPLQMVWPHOWDUHWLQDLPDWH5VLOLHQF\ LOW/RUPDWHUDDQDHPHQWDQG\$FHOHUDWHKHVWULEWLRDQG (IIHFWLMQHVM WRUPDWHU3DUM BFHQWIQGLQJ LQGLFDWHV SRWHQWLDOIRUSHUDØUGR**W**RI PLOOL ROWRWDO
- Ecology Water Quality Combined Funding (WQCF). ,Q WKLV SURWDP DVLQDBSSOLFDWLRICHKHØG IRUIØGLQJIURPPØWLSOH

- RI ORDONOGRUUDQWWYRUPDWHUDFLOLWDHMHOLUEOHQFO%LQJ ODQGDFT&VLWLRQGHVL@DQGFRQVWURWLRQI&GLQJ
- Ecology Stormwater Capacity Grants. KLVSURWDP LWRVSSRUW 13(6 O&LFLSDOØ/RUPØWHUBHUPLWRPSOLDQFKRØMU capital construction projects are not eligible.
- Ecology Grants of Regional or Statewide Significance (GROSS). Partnershipsare encouraged to address issuesof commonconcern and to pro ideconomies of scale. This grant is focused on non point programs and capital construction projects are not eligible
- King County WaterWorks Grant Program. KLVSURWDP IQGVD BULHWRI VWRUPBWHUHODWSURMHFWSHVRQD WRNDU FROH LOFO&LOWHHO VWRUPØWHLOIUDVWUFWDMKLOWKHLOJ &&W\ Wastewater Treatment Division service area. 7H 6RWKUG WHHQ 6WUHHWORVWVKQWKHUNFH DUHDR KOOG QRVWH HOLUEOH

Schedule Considerations:

:H LQLWLDGIGOWLÄG BKHGBHFRQVLGHUDWRROWKISURWDPVWKDDWHPRVWUHOHDORW 223rd Green Street are:

- Puget Sound National Estuary Program Stormwater Strategic Initiative Leads.)UHTMQF\RI DSSOLFDWLRQQRVDDLODEOHXH QHWUR&GVWDUWVLQ1RMPEHU 4
- Ecology Water Quality Combined Funding (WQCF). Application window is annually between August and October.⁵ For applications MPLWWHGO2FWREHUKUN WDUDWHDUODV-XD\ RI WKIROORZOJ HDU DQGQRODWHUKOSULODSSUR[PDWHO\ PRQWKODWKU HDPSOH IRU 2FWREHU DSSOLFDQMDØUGHGWHQVHØGLQJ DWHHPHQVIXOG EH QHRWLDWHIO -DQIQU **RUM**/DUWLQESULODQGWREHFRPSOHWHGEWKQNDUV

KVWS9HWRXGHWQUARWRUPDWHUMOUIS

RWKHURMFHV VRMFHVDWWKHVLPHRI WKLUHSRUVMQGLQJFRQVLVWV5 KVWSMFRORDDRDGRDERMVMDRHQWFRQWUDFWWDQWWDQWWDQWDGD **WDQWRUORDQØWHUTØOLWERPELQHG**

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Permitting Requirements Related to Funding:

,IWKHBWKUGUHHQWUHHWSURMHFWUHFHLMVIHGHUDOIQGLQWKHIROORZQ\$HUPLWVZQGEHUHTLUHG

- 18&RUP
- QGDQHUHG6SHFLHBW&RQDWDWLRQ1R((HFWHWWHURU%LRORUFDONDHQW
- 6HFWLRQFRPSOLDQFHFWWMDOUHRMFHV

7HIROORZQ@RFDOSHUPLWDQGDSSURDORXXXGDOREHQHFHDU\

68&HFØLW

7H DERM OLW SHUPLWWILDIWHPHQWWHV WWWHQWISURMHEWORFDWRWGWGHRI WHIRRW RUHOLQIRQH WWWRFULWLFDO DUHDBWODQGWUHDPBWHURUHRORIJFBIDUGBUHSUHWQWDQGWBWQRWHDWBHBOOEHDIIHFWHGEWHSURMHFW



Des Moines Creek at Des Moines Beach Paralge source: City of Des Moines

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7H QHIWHSRUWH6RXVKUG UHHQ6WUHSUMMHEWWRRQIIPWH URDGII\ODRXVSODQWK&LWWDIILQRUGHWRQLWLIQXIVGI GHMQRIWKSURMHFWKIHHGEDFNURPWKFRPPIQLWMM\DQQ&LWQHDGHUKSWKSURMHFWHDPDQEHUQWIIHQHDQQXGDWHWH SUHOLPLQIGHMQ IQDQGHMQZOQEHUQE\GHMORSLQDGHWDLQBHGPDSIRUWKFRUULGRWIXINGGLQFOXGIIOXQVLOLVWMRVIPIZWHU DQGWRSRIJIDSKWKLIKVRI IZNDMPHQWDQGSURSHUWQLQHV

:LWKD SUHOLPLQIGLAMD LOXQG WK&LWAXOG EH HOLLEOW/BSSO\RUWDWDGHGHUDLDDQM&GVIRUFRQWUKWLTKXY I&GLQJE&G DOORZ/K&LWWDHMUDHLWORFDI&GVWEKOGWKSURMHF3WRMHFWWWPSURM WRUPZWHWUHDWFDIOX99WHUTIXOLW3XSRUWPI&WL PRGDOWUDIADQGSURPRWHMEDQGHMORSPHQWDQGWR3VIMEHHQUHFHQWHPSIMDUHDIRUWDQWI&GV



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